

HIGH IN THE ECUADORIAN ANDES: THE NEST AND EGGS OF THE TAWNY ANTPITTA (*GRALLARIA QUITENSIS*)

Harold F. Greeney^{1,3} & Paul R. Martin^{2,3}

¹Yanayacu Biological Station and Center for Creative Studies c/o Foch 721 y Amazonas, Quito, Ecuador. *E-mail*: revmmoss@yahoo.com

²Department of Biology, University of Washington, 24 Kincaid Hall, Seattle, Washington, 98195-1800, USA.

³Museo Ecuatoriano de Ciencias Naturales, Rumipamba 341 y Av. Los Shyris, Quito, Ecuador

El nido y huevos de la Gralaria Leonada (*Grallaria quitensis*) en las partes altas de los Andes Ecuatorianos.

Key words: Nest and egg description, Ecuador, Andes, paramo, Tawny Antpitta, *Grallaria quitensis*.

To date, the nests of only 11 of the 31 species of *Grallaria* have been described in the literature (Krabbe & Schulenberg 2003), with a flurry of recent descriptions (Freile & Renjifo 2003, Price 2003, Kofoed & Auer 2004, Martin & Dobbs 2004). To these we add a description of the nest and eggs of the nominate Tawny Antpitta (*Grallaria quitensis*). From 16 September to 17 October 2004, we located four active nests of the Tawny Antpitta at 4100 to 4250 m elevation, above the pass west of Papallacta (00°22.4'S, 78°08.3'W), Napo Province, Ecuador. Here we provide a description of the nest, eggs, and nest site location with observations on the behavior of incubating adults.

Two nests were situated in strong vertical forks of isolated *Gynoxys acostae* (Asteraceae) trees and two were supported by multiple small branches of isolated *Hypericum laricifolium* (Clusiaceae) trees. They were roughly

centrally located in the substrate tree and only partially concealed by the sparse surrounding foliage. Mean (\pm SD) height above the ground was 124 ± 22 cm (range = 1–1.45 m). All nests were located on the leeward side of small ridges, sheltered by the ridge from prevailing winds. Nests were bulky cups of moss, mud, and small sticks, and sparsely lined with pale grass stems (Fig. 1). Measurements (\pm SD) of three nests were: outside width 20 ± 4 cm, outside height 14 ± 2 cm with 0–6 cm of hanging moss, inside cup width 10.6 ± 0.6 cm, cup depth 6.8 ± 0.8 cm.

Each nest contained two blue to blue-green, subelliptical eggs. One egg was unmarked and the other seven showed markings ranging from a few red-brown speckles at the larger end to sparse red-brown and lavender flecking and splotching over most of the egg, but always heaviest at the large end. They measured (mean \pm SD, $n = 8$) $30.6 \pm$



FIG. 1. Nest and eggs of the Tawny Antpitta, 17 October 2004, Papallacta, Ecuador. Photo by H. F. Greeney.

0.3 by 24.8 ± 0.8 mm and ranged from 30.3 to 31.1 mm long by 23.0 to 25.5 mm wide.

Further searching of the area and observation of adults revealed many actively calling

pairs, almost always associated with one or several old nests. Presumed old nests were highly clustered with active nests and always associated with relatively isolated vegetation

on the leeward side of ridges. They were found most often in *Gynoxys* trees, but also in large clumps of *Loricaria antisanensis* (Asteraceae) and *Hypericum*, 0.8–2.5 m above the ground.

Incubating adults were reluctant to flush, and left the nest when observers approached to within 1.0 ± 0.3 m ($n = 6$ flushes from 3 nests). In all cases, adults dropped immediately to the ground and ran 10–20 m away and began making a loud single-note alarm call. We videotaped activity at a nest of the Tawny Antpitta for 4.1 h, from approximately 10:00 to 14:00 h (EST) on 22 September. An adult was flushed from the nest during camera setup, and returned to the nest 42 min later, resuming incubation. The eggs were left uncovered for a total of 0.6 h (18% of 3.4 h) (excluding off bouts caused by human flushing), and were covered for 2.8 h (82% of 3.4 h), which is similar to, but on the low end, of that observed for other *Grallaria* (e.g., Dobbs *et al.* 2003, Price 2003, Kofoed & Auer 2004). Mean on bout was 1.1 h ($n = 2$). Two different adults were observed incubating (presumably the male and female), and both arranged nest lining inside the nest. One bird brought in a piece of dead grass (nest lining) to the nest, illustrating that Tawny Antpitta continues to add nest material to the nest during the incubation period.

Perhaps the most striking observation during incubation was the frequent vocalizations given by both incubating birds on the nest. Over the 2.8 h, an adult was observed on the nest, a total of 98 vocalizations were given on 10 occasions (each occasion separated by at least one minute of no vocalizations). Some of these vocalizations were soft; however, the majority were loud songs, frequently given in response to another vocalizing bird near the nest. Descending, harsh calls were given 10 times. The rest of the vocalizations were either full 3-note songs, or frequently soft or loud, 1- to 2-part “pup” calls which appeared

to be the introductory notes of the full song. Adults often alternated between 2- and 3-note songs while singing on the nest. As they sang, adults strained their necks upwards, pointing their bills at an angle towards the sky, but remained fully on top and covering the eggs beneath them. While other species of antpitta have been known to sing occasionally from the nest (e.g., Skutch 1969, Dobbs *et al.* 2003), the rate of vocalizing from this nest of Tawny Antpitta is unprecedented in the Formicariidae.

As with other species of Formicariidae (Dobbs *et al.* 2003, Greeney & Gelis 2005, Greeney & Sornoza 2005), Tawny Antpittas frequently probed the nest lining with their bills, sometimes in short, rapid sewing machine-like motions. Adults were observed to probe into the nest lining on 23 separate occasions, often appeared to eat something following probing, and were likely removing parasites (Haftorn 1994, Greeney 2004). Probing was usually brief (< 3 s in duration), with < 1 s of actual probing, and the rest of the time spent staring into the nest or shifting position within the nest. Probing events were shorter in duration than those in Scaled Antpitta (*Grallaria guatemalensis*) (Dobbs *et al.* 2003), and were not associated with the movement of nest lining or arrangement of eggs.

Incubating Tawny Antpittas frequently dozed on the nest as they incubated, closing their eyes partially or completely (as in Scaled Antpitta, Dobbs *et al.* 2001). Apparent yawning (opening bill wide and closing it without vocalizing) was observed on 3 occasions during the 2.8 h of incubation.

Overall, incubating adults sat low on the nest with their backs just above the edge of the nest, and their heads held low. Later in the afternoon, adults sat higher on the nest, particularly when the sun was visible, and frequently readjusted their positions on the nest. When alert, adults raised their heads, fluffed their throats, and held their bills upward,

keeping their bodies low to the nest. Adults arriving to the nest for incubation positioned themselves over the eggs, and then gradually lowered themselves onto the eggs with a distinctive swaying motion seen in other *Grallaria* (e.g., Scaled Antpitta, Dobbs *et al.* 2001). Adults also interacted when they swapped incubation duties at the nest, with one adult pecking 4–5 times at the cheek of the incoming adult.

The nests described here are similar, in their construction of humus material and positioning below 3 m above the ground, to the majority of those previously described for the genus (Wiedenfeld 1982, Whitney 1992, Protomastro 2000, Dobbs *et al.* 2001, Freile & Renjifo 2003, Price 2003, but see Kofoed & Auer 2004 and Martin & Dobbs 2004). The observed eggs differed only in the apparently heavier markings than most other *Grallaria* eggs (see previous refs.). Our additional observations, including periodically searching the area during other times of the year, suggest that the nesting season was just beginning in this area, and that pairs have high nest-site fidelity. Nest location in wind-sheltered areas makes sense to anyone who has spent time in the harsh climactic conditions of this elevation. Additionally, the use of the few available plant species which rise above the moist, often frozen, ground cover is an obvious choice. The ease with which we found multiple pairs and old nests suggests that Tawny Antpittas may be an excellent study organism for future investigations into the biology of this poorly known group of Neotropical birds. We hope these observations encourage others to undertake studies on this species, which can be abundant within its range.

ACKNOWLEDGMENTS

We thank Carmen Bustamante and Mitch Lysinger for continued support. Ruth Ann

and John V. Moore supported this work through the Population Biology Foundation. This study was funded in part by a Rufford Award and a Pamela & Alexander F. Skutch Award. We thank R. Gelis and M. Jane for assistance in the field. R. Dobbs, K. Zyskowski, and an anonymous reviewer improved earlier versions of the manuscript. The PBNHS and the Hertzberg Family Foundation helped make this work possible through encouragement and logistical support. This is publication number 36 of the Yanayacu Natural History Research Group.

REFERENCES

- Dobbs, R. C., P. R. Martin, C. Batista, H. Montag, & H. F. Greeney. 2003. Notes on egg laying, incubation and nestling care in Scaled Antpitta *Grallaria guatemalensis*. *Cotinga* 19: 65–70.
- Dobbs, R. C., P. R. Martin, & M. J. Kuehn. 2001. On the nest, eggs, nestlings and parental care in the Scaled Antpitta (*Grallaria guatemalensis*). *Ornitol. Neotrop.* 12: 225–233.
- Freile, J. F., & L. M. Renjifo. 2003. First nesting records of the Moustached Antpitta (*Grallaria alleni*). *Wilson Bull.* 115: 11–15.
- Greeney, H. F. 2004. Breeding behavior of the Bicolored Antvireo (*Dysithamnus occidentalis*). *Ornitol. Neotrop.* 15: 349–356.
- Greeney, H. F., & R. A. Gelis. 2005. A nest of the Rufous Antpitta *Grallaria rufula* depredated by a Turquoise Jay *Cyanolyca turcosa*. *Cotinga* 24: in press.
- Greeney, H. F., & F. Sornoza. 2005. The nest and egg of the Slate-crowned Antpitta (*Grallaricula nana*), with observations on incubation behavior in southern Ecuador. *Ornitol. Neotrop.* 16: 137–140.
- Haftorn, S. 1994. The act of tremble-thrusting in tit nests, performance and possible functions. *Fauna Norv. Ser. C Cinclus* 17: 55–74.
- Krabbe, N., & T. S. Schulenberg. 2003. Family Formicariidae (Ground antbirds). Pages 682–731 in del Hoyo, J., A. Elliot, & Christie D. A. (eds.). *Handbook of the birds of the world, Volume 8*. Lynx Edicions, Barcelona Spain.

- Kofoed, E. M., & S. K. Auer. 2004. First description of the nest, eggs, young, and breeding behavior of the Great Antpitta (*Grallaria excelsa*). *Wilson Bull.* 116: 105–108.
- Martin, P. R., & R. C. Dobbs. 2004. Description of the nest, egg, and nestling of Watkins's Antpitta *Grallaria watkinsi*. *Cotinga* 21: 35–37.
- Price, E. R. 2003. First description of the nest, eggs, hatchlings, and incubation behavior of the White-bellied Antpitta (*Grallaria hypoleuca*). *Ornitol. Neotrop.* 14: 1–5.
- Protomastro, J. J. 2000. Notes on nesting of Variegated Antpitta *Grallaria varia*. *Cotinga* 14: 39–41.
- Skutch, A. F. 1969. Life histories of Central American birds, 3. Pacific Coast Avifauna 35, Cooper Ornithological Society, Berkeley, California.
- Whitney, B. M. 1992. A nest and egg of the Rufous Antpitta in Ecuador. *Wilson Bull.* 104: 759–760.
- Wiedenfeld, D. A. 1982. A nest of the Pale-billed Antpitta (*Grallaria carikeri*) with comparative remarks on antpitta nests. *Wilson Bull.* 94: 580–582.

Accepted 2 July 2005.

