

## THE NEST AND EGGS OF THE PLAIN-BACKED ANTPITTA (*GRALLARIA HAPLONOTA*) FROM EASTERN ECUADOR

Harold F. Greeney<sup>1,2</sup>, Rudolphe A. Gelis<sup>1</sup>, Caroline Dingle<sup>1,3</sup>, F. Jarol Vaca B.<sup>1,4</sup>, Niels Krabbe<sup>5</sup>, & Mike Tidwell<sup>1</sup>

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

<sup>2</sup>Museo Ecuatoriano de Ciencias Naturales, Rumipamba 341 y Av. Los Shyris, Quito, Ecuador.

<sup>3</sup>University of Cambridge, Zoology Department, Downing St., Cambridge CB2 3EJ, UK.

<sup>4</sup>Shiripuno Research Center, Pastaza Province, Ecuador.

<sup>5</sup>Zoological Museum, University of Copenhagen, Universitetsparken 15, DK-2100, Copenhagen, Denmark.

**El nido y los huevos de *Gralaria Dorsillana* (*Grallaria haplonota*) en el este del Ecuador.**

**Key words:** Nest, egg, laying time, singing rate, Ecuador, Andean foothills, Plain-backed Antpitta, *Grallaria haplonota*.

The nests of *Grallaria* antpittas have long escaped the attention of ornithologists, and, before 2003, nests of only five of the roughly 31 species of *Grallaria* had been described in nature (Sclater & Salvin 1879, Edwards & Lea 1955, Énard 1982, Wiedenfeld 1982, Whitney 1992). Recently, however, descriptions have been published for five additional species, four of them from Ecuador (Freile & Renjifo 2003, Price 2003, Kofoed & Auer 2004, Martín & Dobbs 2004, Greeney & Martín 2005). We continue this trend by describing the nest and eggs of the Plain-backed Antpitta (*Grallaria haplonota*) from the foothills of the north-eastern Ecuadorian Andes. While Schäfer (2002) describes an apparent nest of Plain-backed Antpitta from Venezuela, his

description of a domed nest with a side entrance on the ground is almost certainly in error, as it is inconsistent with all previous nests for the genus, as well as with our observations of a nest from Ecuador. Here we describe a single nest of Plain-backed Antpitta for which we obtained videotaped confirmation of the species to which it belonged.

Observations were made at 1175 m a.s.l. at a campsite (00°22.4'S, 78°08.3'W) within the community-owned reserve, Mushullacta, Napo Province, Ecuador, adjacent to the Napo-Galeras sector of the Gran Sumaco National Park. On 11 April 2005, we discovered an empty, but seemingly completed nest. The nest was still empty at 16:30 h on 12 April but contained a single icy-cold and dew-

covered egg at 05:30 h on 13 April. Based on the temperature and wetness of the egg this early in the morning, it is most likely that the egg was laid the previous day after 16:30 h. On 14 April, at 15:30 h the nest still contained a single egg. An adult was heard within 15 m of the nest giving a repeated (every 10–20 s) one-note call. Two hours and 15 min later, the nest contained two eggs. These observations closely match the only reported laying time for *Grallaria*, where a Scaled Antpitta (*Grallaria guatemalensis*) laid both eggs after 17:00 h, roughly 48 h apart (Dobbs *et al.* 2003).

*Nest and eggs.* The nest was a bulky open cup of dead, partially decaying vegetative matter including sticks, leaves, brown moss, and rootlets. At the time of laying it was sparsely lined with dark rootlets. Inside measurements of the egg cup were 10.5 cm diameter and 8.5 cm deep. Outside dimensions were roughly 15 to 17 cm tall and 23 to 25 cm wide. The nest was located at the edge of an area of dense, tangled vegetation in a small drainage, bordered on the uphill side by tall (30–40 m canopy) primary forest, with an open understory. It was situated 1.6 m above the ground and supported by 6–8 thin vines (1–1.5 cm diam.) in the middle of a dense vine tangle. The tangle was created by fallen branches and vines, and formed a dense area of vegetation roughly 2.3 m high, 3 m long and 2 m wide. The nest was roughly in the center, near the top of the tangle, and was well hidden from all angles. It was sheltered directly (60 cm) above by several large broad leaves of an herbaceous vine.

Both eggs were immaculate turquoise blue. The first measured 31.5 by 25.0 mm and weighed 10.844 g the morning after being laid. The second measured 31.5 by 25.2 mm and weighed 11.021 g the day after it was laid.

*Adult behavior and nest fate.* On 13 April, the day between laying of the eggs, the nest was vid-

eotaped for 7.25 h from 10:15 h to 17:30 h. During this time, adults visited the nest only twice, sitting on the egg for a total of 23 min or 5.2% of the observation period. Both times they brought single rootlets which they added to the interior of the cup. While sitting on the egg the adult(s) seemed restless and never settled completely onto the egg as seen later in incubation. The adults occasionally performed one or all of the behaviors described below, but were never heard to sing while on the nest. On one occasion, an adult lifted its wings backwards until the tips crossed slightly behind it, pressed its breast into the nest cup, and vibrated its body rapidly. We interpret this as a nest shaping behavior as seen in many species of passerines during building (Greeney unpubl.), including antpittas (Greeney & Sornoza 2005).

On 24 April, 10 days after the second egg was laid, the nest was videotaped from 06:00 h to 14:00 h. Both adults incubated for 83.6% of the observation period in three on bouts averaging ( $\pm$  SD)  $131 \pm 96$  min. Each time they replaced each other one adult alighted on the rim after approaching from below the nest and, with little or no interaction, the incubating adult left. A rootlet was added to the nest cup each of the three times we observed an adult arrive at the nest. While incubating, adults frequently (9.5 times per hour) stood and peered into the cup. They then engaged in one of several behaviors. They spent 0.6% of their time on the nest preening their plumage with their bills or occasionally scratching with their leg. They spent 0.07% of their time arranging stray rootlets in the rim of the cup. On seven out of 53 standing bouts adults leaned into the cup and gently drew their bill towards their breast, presumably rolling the eggs. In addition, while standing, they performed “rapid” or “sharp” probing maneuvers (Greeney 2004) in between staring intently into the nest cup. Of these probing behaviors, 86% were rapid

probes, which were performed during 87% of movement bouts ( $n = 53$ , range = 0–38 times per bout). Sharp probes were observed on 36% of movement bouts (range = 0–4 times per bout). At least three times, rapid probing caused one of the eggs to be turned. Periods of movement lasted from 1–94 s, and in total adults spent 4.4% of their time moving about in the nest. In addition to these behaviors which likely reduced the vigilance of the incubating adult, the first adult to return to the nest in the morning sang from the nest 35 times during a 40 min on bout (52 times per hour). The song heard was the typical series of mournful notes given by this species (Ridgely & Greenfield 2001). The individual who replaced this one sang only three times, immediately after replacing the first adult and just before the return of the first adult at the end of its 232 min on bout.

On 25 April, at 06:00 h, the nest was found covered in contour feathers of an adult antpitta. Both eggs were intact but cold to the touch. The nest was videotaped from 06:15 to 10:15 h, during which time an adult visited the nest only once for 25 s, peered into the cup, shifted the eggs with its bill, and then left. We presume that the adult spending the night on the nest was killed or seriously injured. At least one adult was heard singing from the area during the following days but the nest remained abandoned.

*Conclusions.* The eggs described here for Plain-backed Antpitta are similar to those described for others in the genus (review in Krabbe & Schulenberg 2003). The nest is similar to some *Grallaria* species including Chestnut-crowned (*G. ruficapilla*), Watkins's (*G. watkinsi*), and Tawny (*G. quitensis*) antpittas (Dobbs & Martin 2004, Greeney & Martin 2005, Martin & Greeney 2006), in its placement out in the small branches of a shrub or vine tangle. Scaled Antpitta has been reported nesting in similar situations (Miller 1963,

Dobbs *et al.* 2001) as well as in more supported positions such as against fallen and upright tree trunks (Belcher & Smooker 1936, Edwards & Lea 1955), as is the case for most other described *Grallaria* nests (Érard 1982, Wiedenfeld 1982, Quintela 1987, Whitney 1992, Protomastro 2000, Freile & Renjifo 2003, Price 2003, Kofoed & Auer 2004, Greeney & Gelis 2005). Schäfer's (2002) report of a domed nest on the ground is almost certainly incorrect, given that no nest of the genus *Grallaria*, or any formicariid, is known to be domed.

While other antpittas have been reported to sing from the nest (e.g., Skutch 1969, Dobbs *et al.* 2003), the rate of vocalization observed here surpasses even vocal species (e.g., Tawny Antpitta, 35 times per hour, Greeney & Martin 2005). We hope this brief note encourages others to report any observations which further our knowledge of this poorly studied and fascinating group of Neotropical birds.

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#### REFERENCES

- Belcher, C., & G. D. Smooker. 1936. Birds of the colony of Trinidad and Tobago. Part IV. *Ibis* 6: 792–813.
- 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.
- Edwards, E. P., & R. B. Lea. 1955. Birds of the Monserrate area, Chiapas, Mexico. *Condor* 57: 31–54.
- Érard, C. 1982. Le nid et la pointe de *Lipaugus vociferans*, Cotingidé, et de *Grallaria varia*, Formicariidé. *Alauda* 50: 311–313.
- Freile, J. F., & L. M. Renjifo. 2003. First nesting records of the Moustached Antpitta (*Grallaria allenii*). *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: 110–111.
- Greeney, H. F., & P. R. Martin. 2005. High in the Ecuadorian Andes: the nest and eggs of the Tawny Antpitta (*Grallaria quitensis*). *Ornitol. Neotrop.* 16: 567–571.
- 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.
- 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.
- Krabbe, N., & T. S. Schulenberg. 2003. Family Formicariidae (Ground antbirds). Pp. 682–731 in del Hoyo, J., A. Elliot, & D. A. Christie (eds.). *Handbook of the birds of the world. Volume 8: Broadbills to tapaculos*. Lynx Edicions, Barcelona, Spain.
- Martin, P. R., & R. C. Dobbs. 2004. Description of the nest, egg, and nestling of Watkins's Antpitta *Grallaria watkinsi*. *Cotinga* 21: 35–37.
- Martin, P. R., & H. F. Greeney. 2006. Description of the nest, eggs and nestling period of the Chestnut-crowned Antpitta *Grallaria ruficapilla* from the eastern Ecuadorian Andes. *Cotinga* 25: 47–49.
- Miller, A. H. 1963. Seasonal activity and ecology of the avifauna of an American equatorial cloud forest. *Univ. Calif. Publ. Zool.* 66: 1–78.
- Price, E. R. 2003. First description of the nest, eggs, hatchlings, and incubation behavior of the White-bellied Antpitta (*Grallaria hypoleuca*). *Ornith. Neotrop.* 14: 1–5.
- Protomastro, J. J. 2000. Notes on nesting of Variegated Antpitta *Grallaria varia*. *Cotinga* 14: 39–41.
- Quintela, C. E. 1987. First report of the nest and young of the Variegated Antpitta (*Grallaria varia*). *Wilson Bull.* 99: 499–500.
- Schäfer, E. 2002. *Die Vogelwelt Venezuelas und ihre Ökologischen Bedingungen*. Volume. 3. Württemberg Verlag, Berglen, Germany.
- 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.
- Wiedenfled, D. A. 1982. A nest of the Pale-billed Antpitta (*Grallaria carikeri*) with comparative remarks on antpitta nests. *Wilson Bull.* 94: 580–582.

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