

## First description of the nest and vocalisations of the Peruvian Antpitta *Grallaricula peruviana* with a northward range extension

Harold F. Greeney, Erin C. Hannelly and Mitch Lysinger

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*Grallaricula peruviana* es un pájaro muy raro, sólo conocido por pocos especímenes y por ninguna observación en su hábitat natural. Encontramos el primer nido de este pájaro raro en el nordeste del Ecuador, casi 200 km al norte de su distribución conocida. El nido es parecido a otros del mismo género. Los dos sexos comparten la atención del pichón. La alimentación del pichón incluye insectos acuáticos. La vocalización de los adultos es parecido a la de *G. flavirostris* en el este del Ecuador.



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The genus *Grallaricula* comprises eight species of small, elusive antpittas distributed from Central America and montane Venezuela, on both Andean slopes, south to Bolivia. All are poorly known and a few have extremely restricted and patchy distributions. One such, Peruvian Antpitta *G. peruviana*, was previously known only from several localities in north-east Peru and south-east Ecuador. Ridgely & Tudor<sup>10</sup> reported it as 'seemingly unknown in life', while BirdLife International<sup>1</sup> afforded it Near-Threatened status, and it was unknown from Ecuador until 1984 when a specimen was collected in the Cordillera Cutucú<sup>3</sup>. The only other reports are: one observed briefly by Bret Whitney (pers. comm.) on the Gualacio–Limón road, Morona-Santiago province, in 1990 and two mist-netted in Podocarpus National Park in 1992<sup>7,8</sup>. In November 2000, Lelis Navarrete first reported a bird thought to be this species at Cabañas San Isidro. *G. peruviana* was subsequently confirmed to occur at this locality when a nest was found there in September 2002. Here we describe the nest, habitat, adult plumage of both sexes, and first known vocalisations of the Peruvian Antpitta, and confirm its presence in north-east Ecuador, nearly 240 km north of its previously known range.

### Study site

On 29 September 2002 a nest containing a single nestling was found on the private reserve of Cabañas San Isidro, 3 km west of the town of Cosanga, Napo province, eastern Ecuador, and located near the Yanayacu Biological Station (00°35'S 77°53'W). The reserve land has several owners and adjoins the protected forests of the Antisana and Sumaco National Parks.

### Nest description

We discovered the nest at 15h00. The nestling was bare with its eyes slitted but closed, and was estimated to be 1–2 days old (Fig. 1). The nest was a broad, shallow cup constructed of moss, lined with

dark rootlets and built atop a loose platform of 1–5 mm-diameter, 10–20 cm-long, sticks. The nest was circular with an internal diameter of 60 mm and external diameter of 135 mm, an inside egg cup diameter of 85 mm, and a cup depth of 45 mm (Fig. 2). The structure was precariously saddled across a 15 mm-diameter, horizontal branch of a small *Palichorea* sp. (Rubiaceae) sapling. No other branches or material supported the nest other than several 2 mm-diameter climbing fern petioles running along the branch. The nest was 1.6 m above ground and located in a depression caused by drainage into a stream 2.5 m away. The depression was 2–3 m deep, 3 m wide at its opening to the stream, and narrowed to an abrupt ending 4.5 m from the stream. The nest was situated at a point where the depression was c.2.5 m wide. The depression was oriented almost due north at 15–20°, well shaded, and throughout the day received sun only briefly through small gaps in the forest canopy. The nest itself was covered directly from above by a single narrow-bladed fern leaf crossing the centre of the nest, c.10 cm above the rim. Above that, within 1.5 m, leaves of the same *Palichorea* sp., as well as a single leaf from a nearby *Geonoma* sp. (Aracaceae) palm, shaded the nest. The nest was observed and videotaped. Adult and nestling activity was videotaped from dusk until dawn for over 100 hours until 13 October. A full analysis of these data is currently in preparation.

Topographically, the nest was at c.2,050 m elevation in a relatively level area, by Andean standards, spreading roughly 2.5 km west of the río Cosanga. The area immediately around the nest was quite flat, but frequently cut by small stream drainages 3–40 m deep. The section of stream along which the nest was situated sloped gently on either side. Understorey vegetation in the vicinity was dominated by *Piper* spp. (Piperaceae), ferns (Pteridophyta), various Rubiaceae, *Acalepha* sp. (Euphorbiaceae), *Asplundia* sp. (Cyclanthaceae), *Geonoma* sp. (Aracaceae), *Cestrum* spp.

(Solanaceae), and various herbaceous Gesneriaceae and Urticaceae. The canopy was dominated by *Miconia* sp., *Meriania* sp. (Melastomataceae), *Nectandra* sp. (Lauraceae), *Solanum* sp. (Solanaceae) and *Vismia* sp. (Clusiaceae). The overall environment and physical situation was very similar to that recently described from a nest of Bicoloured Antvireo *Dysithamnus occidentalis* from the same area<sup>4</sup> and for nests of Ochre-breasted Antpitta *G. flavirostris* seen around Volcán Sumaco (HFG unpubl.).

On 30 September a dead branch, laden with epiphytes and connected to the base of the branch supporting the nest, broke and hung below the nest. Subsequently, on 3 October, a brief but heavy rain shower saturated the dead branch and tipped the nest to a 45° angle. On 11 October the nestling, now well-grown and covered in thick red-brown down (Fig. 2), fell from the nest while begging in the presence of an adult. It was discovered the following morning, apparently healthy, on the ground 2 m from the nest. After being replaced into the nest, it remained and was fed by the adults for one hour. Then, while apparently attempting to move to a less precarious position along the branch, the nestling again fell to the ground. It survived at least six hours until dark while continuing to be fed by the adults. The following morning it was found dead 1 m from the nest. From these observations we estimate the nestling period to be 16–17 days.

### Vocalisations and adult behaviour

Both adults fed and brooded the nestling. Initially, the adults flushed before the observer was in sight of the nest. Eventually, however, they became more tolerant and would permit several observers to stand quietly, less than 10 m away and in clear view. Their approaches and exits to and from the nest were very inconspicuous and almost invariably from below, using the shelter of a nearby embankment. Even under careful observation, adults were rarely glimpsed more than 2 m from the nest. When alarmed, both sexes would slightly flair the crown feathers. When brooding, both sexes were constantly vigilant and appeared to hunt and retrieve prey from this position. Prey items appeared to include a prevalence of aquatic insects.

Adults in the vicinity of the nest uttered a soft, muted *seeep* call. This was similar to the call made by *G. flavirostris* around its nest at a nearby site, but perhaps a bit sharper (HFG unpubl.). Additionally, when on the ground, the nestling gave repeated, loud scratchy distress calls. On one occasion, when observers were near the nestling, the male approached, moving 2–3 m above ground, giving a repeated, piercing *seeeeup!* alarm note. The call was startlingly loud and resembled in tone the calls given by many soaring raptors.

### Adult plumage descriptions

Few recent field guides that include *G. peruviana* provide sufficient detail on the plumage characteristics for swift, reliable separation of the sexes. Here, we review these and point to the most important characteristics that should enable future observers to readily distinguish the sexes under typical field conditions. The observed pair was not sexed, but following Ridgely & Tudor<sup>10</sup>, we assume the individual having bolder breast patterning and a more extensive and richer rufous crown to have been the male. Many hours of observation and video were used to create the following descriptions, but it should be borne in mind that only one pair was observed and some characters may vary.

**Male. Head:** crown rich orange-rufous, extending just onto upper nape, in some lights appearing to be separated from the brown cheeks by a narrow buffy stripe; front and back of eye rimmed with broad, incomplete whitish eye-ring, giving separated effect above and below eye; cheeks brown, similar to mantle; faint rufous-cream highlights on pre-loral area extend from either side of bill base to forecrown, giving indistinct tufted effect. **Throat:** white malar stripe extends to upper chest with blackish-brown submalar stripes starting at bill base, gradually broadening and terminating on throat-sides well above upper chest; central throat white, broadly bordered by submalar stripes. **Breast and belly:** white, upward-curving crescent on upper chest extends to below ear-coverts and cleanly divides throat and malar marks from chest scalloping; almost entire breast down to mid/lower belly blackish, narrowly scalloped white, the only exception being the central breast where there is a roughly 1.5 cm diameter patch which is whiter with narrow black scalloping; white on black scalloping becomes finer on the belly and abruptly gives way to cleaner white with very little black underneath. **Back:** entire back and wings an even, rich medium brown with no fringes to coverts or remiges.

**Female. Head:** crown rufous-brown, only extending to hindcrown; eye-ring crescents distinctly buffy; cheeks and nape brown, similar to mantle; pre-loral 'tufts' as extensive as male, but buffy, similar in coloration to eye-ring crescents. **Throat:** clean white malar stripe connects with broad white crescent on upper chest; slightly broader blackish submalar terminates at white upper chest crescent. **Breast and belly:** broad, white, upward-curving crescent on upper chest extends below ear-coverts and cleanly divides throat and malar markings from chest scalloping; band across entire upper breast, c.1 cm wide, blackish, thickly scalloped white; more diffuse scalloping continues thickly well down flanks and sides of breast and belly, quickly giving way to clean

white; mid-breast and belly white. *Back*: entire back and wings even medium brown with no fringes to coverts or remiges.

**Soft-part colours.** Bill of both sexes blackish grey at base, becoming dull yellowish green at tip. The bill has been described as pure blackish in other works<sup>9,10</sup>. In both sexes, eyes were dark chestnut and legs pale, fleshy grey.

#### Key features in sex identification

*G. peruviana* does exhibit marked sexual dimorphism, but until the two sexes are carefully compared, these differences may not be obvious under field conditions. Our detailed observations of adults at the nest, most of which have been recorded on video tape, demonstrate that certain characteristics, in combination or alone, can be used to reliably distinguish between males and females. Starting with the potentially most useful for assigning a bird to a particular sex, we briefly review the four most prominent characters.

**Breast pattern.** The dark and more complete breast scalloping of the male is probably the best plumage feature. Compared to the female, the male's breast and belly are so overwhelmingly dark and scalloped that confusion is unlikely given a good view. Aside from the flanks, which are more extensively marked, the scalloping is restricted to the upper breast in the female, where it forms an indistinct band or bridge of scalloping.

**Submalar stripe.** The blackish submalar of the male is about twice as broad as in the female, and widened into an almost elongate triangle, whereas the female's was a more or less even, narrower strip, resulting in much more extensive white throat and adjacent chest crescent.

**Crown.** Under a variety of light conditions, we observed the differences between the amount and intensity of rufous on the crown. As might be expected, the male's crown was richer orange-rufous, rather than rufous-brown, and more extensive, reaching slightly further onto the hinderown than in the female. The female's crown was still richly coloured, but noticeably less so than in the male.

**Eye-ring and pre-loral 'tuft'.** Without direct comparison, these two characters can be hard to judge. Nevertheless, the crescentic eye-rings and pre-loral tufts are better demarcated and cleaner white in the male, and appear more diffuse and buffy in the female.

#### Discussion

Though little is known concerning the breeding of any *Grallaricula*, recent observations of Ochre-breasted Antpitta *G. flavirostris* in Costa Rica suggest a nestling period for this species of 14–16 days<sup>6</sup>, and Schwartz<sup>11</sup> estimated 16–17 days for Rusty-breasted Antpitta *G. ferrugineipectus*. These observations support our own estimation of 16–17 days for *G. peruviana*. The nest we observed was most similar to those recently described for *G. flavirostris*<sup>6</sup> in that it was a neat moss cup rather than the disorganised cup of twigs described for *G. ferrugineipectus*<sup>9</sup>. Additionally, its location in a small depression, as well as its neat mossy cup construction, were very similar those of *G. flavirostris* on the slopes of nearby Volcán Sumaco (HFG unpubl.). Unlike these *Grallaricula* and other antpitta genera (e.g. *Grallaria*, *Hylopezus*, *Pittasoma*), the nest of *G. peruviana* was not in a well-supported location such as a tree fork<sup>2,5,6,12</sup>. The precariously saddled position over a single branch, however, may not prove to be typical of the species, as it appears to have contributed to the nest failure. We hope this brief note will stimulate interest in supporting future studies of the basic natural history of this and other, increasingly threatened, Neotropical species.

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Figure 1. Nestling Peruvian Antpitta *Grallaricula peruviana*, 29 September 2002 (H. F. Greeney)



Figure 2. Nest of and nestling Peruvian Antpitta *Grallaricula peruviana*, 10 October 2002 (H. F. Greeney).

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**Harold F. Greeney and Erin C. Hannelly**

*Yanayacu Biological Station & Center for Creative Studies, Cosanga, Napo, Ecuador; c/o 721 Foch y Amazonas, Quito, Ecuador. E-mail: yanayacu1@hotmail.com.*

**Mitch Lysinger**

*Cabañas San Isidro, Cosanga, Ecuador; c/o N21-01 Carrion y Juan Leon Mera, Quito, Ecuador.*