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THE EGG AND INCUBATION PERIOD OF THE PERUVIAN ANTPITTA (*GRALLARICULA PERUVIANA*)

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El huevo y el periodo de incubación de *Grallaricula peruviana*.

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Little is known about any species of ground antbird (Formicariidae) and, in fact, new species are still being discovered (Krabbe *et al.* 1999). In particular, published descriptions of breeding behavior are scarce. Despite recent advances in our knowledge for a number of species (Protomastro 2000, Holley *et al.* 2001, Dobbs *et al.* 2001, 2003; Barber & Robbins 2002, Price 2003, Greeney *et al.* 2004) there remain large gaps in our knowledge of the breeding biology for all five genera of antpittas (*Grallaria, Grallaricula, Hylopezus, Myrmothera*, and *Pittasoma*).

The Peruvian Antpitta (*Grallaricula peruviana*) was, until recently, "seemingly unknown in life" (Ridgely & Tudor 1994) and has been listed as "near threatened" by BirdLife International (2000). A recent range extension (Greeney *et al.* 2004) expanded its known distribution from northeastern Peru to northeastern Ecuador (Ridgely & Greenfield 2001). Greeney *et al.* (2004) described the nest and vocalizations for the first time, but the egg remained undescribed. Here we provide brief observations at a second nest of the Peruvian Antpitta, including a description of the egg, and a further assesment of its abundance and habitat use at the private bird preserve of Cabañas San Isidro and the Yanayacu Biological Station (00°35.949S, 77°53.403W) in northeastern Ecuador.

On 20 April 2003, a nest of Peruvian Antpitta was discovered in the large flat area northwest of the Cosanga River, at an elevation of 2000 m, approximately 300 m from the location of another Peruvian Antpitta nest found previously (Greeney *et al.* 2004). The canopy height in this area ranges from 20 to 30 m, with a predominance of *Miconia* (Melastomataceae), *Vismia* (Clusiaceae), *Nectandra* (Lauraceae), and *Solanum* (Solanaceae) trees. The understory is mossy and relatively dense, with scarce patches of *Chusquea* sp. bamboo (see Greeney *et al.* 2004 for a more complete description of the area). The nest was empty at the time of discovery. Both adults were seen bringing and adding material to the mostly formed nest. The

FIG. Nest of Peruvian Antpitta with full clutch of one egg. Inset on left: larger end of egg; inset of right: lateral view of egg.

nest consisted of a loose, bulky platform of sticks supporting a mossy cup that was sparsely lined with only a few dark fungal rhyzomorphs (Fig. 1). The entire structure was precariously supported by the roots and petioles of epyphitic ferns, 1.6 m above the ground on the side of a 2.5 m tall sapling. The nest was 10 m from a small stream and roughly at the apex of a shallow, gradual depression.

On 25 April at 05:30 h (EST), the nest was unoccupied and empty, but well lined with dark fungal rhizomorphs. At 09:00 h, it contained a single egg, measuring 21.4 x 17.6 mm. The egg was pale caramel colored, evenly blotched and flecked with heavy marks of brown, black, and white (Fig. 1). Only one egg was laid in the nest. Both adults shared incubation duties and, on 15 May, at roughly 09:30 h, the egg hatched. Incubation period was 20 days.

For two weeks before discovery of the nest, both adults were seen and heard regularly along the small path approximately 25 m from the nest site. This path was traveled frequently throughout daylight hours, while studying other nests in the area. Adults were not shy, and would frequently hop to a perch 0.5 to 1.5 m above the ground and sit quietly, twitching their tail in typical *Grallaricula* fashion, while the observer moved along the trail. As an observer approached they would drop out of sight and were never seen moving about or foraging. While out of sight, they frequently gave a repeated, soft, *seeep!* call as described by Greeney *et al.* (2004). These calls were heard most commonly from 05:45 h to 09:00 h and rarely later in the day. There appeared to be a slight difference in the tonal quality of the two individuals as they called back and forth, often up to 20 m apart, but no sounds were recorded. The adults were

rarely observed at the same time, away from the nest, and it appeared that they were not always foraging in close tandem. From these sporadic observations, our impression was that calling was most frequent during the mornings just prior to and just after laying of the egg, and then again on the day of hatching.

The nest of the Peruvian Antpitta described here is similar, in its precarious position, to that described previously (Greeney *et al.* 2004). It differs from the branch-supported nests of the Ochre-breasted Antpitta (*G. flavirostris* (Holley *et al.* 2001, Greeney unpubl.). The egg is similar to that of the Slate-crowned *G. nana*), Hooded (*G. cucullata*), and Ochre-breasted antpittas (Schonwetter 1967, Holley *et al.* 2001), but differs from the pale green or gray background described for Rusty-breasted Antpitta (*G. ferrugineipectus*) (Schwartz 1957). The presence of a single nestling in September (Greeney *et al.* 2004) and a single egg laid in this nest suggest that, in northeastern Ecuador, the Peruvian Antpitta may lay a smaller clutch than other antpittas (Wiedenfeld 1982, Robinson *et al.* 2000). The reported incubation period for the Rusty-breasted Antpitta was 16–17 days (Schwartz 1957) and Holley *et al.* (2001) estimated a 17–21 day period for the Ochre-breasted Antpitta. The latter agrees with our reported 20-day incubation period for the Peruvian Antpitta.

To date, both nests of the Peruvian Antpitta were found in undisturbed mossy forest, along remote streams. Its unobtrusive vocalization may explain the paucity of sightings throughout its range. We hope this note encourages others to report findings on this and other increasingly threatened and poorly known Neotropical birds.

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