Notes on the nesting of Variegated Antpitta *Grallaria varia*

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Se presentan observaciones sobre dos nidos hallados en el Parque Nacional Iguazú, Argentina. Ambos nidos estabas ubicados en pequeñas cavidades abiertas en la parte superior de dos troncos quebrados en pié, a 2,40 y 2,55 m de altura , en el interior del bosque. Ambos troncos tenían en la parte superior una corona de ramas verticales que habian crecido después del quiebre. Uno de los nidos estaba ocupado y tenia forma de copa, el otro había desaparecido en el momento de efectuar las observaciones. El nido ocupado estaba formado por hojas secas, ramitas y peciolos de helechos, con una capa de raicillas finas negras en la parte interna. El ave que estaba anidando podía observarme mientras me aproximaba, en ese momento estiró el cuello adoptando el pico la posición vertical. El nido tenia dos huevos color turqueza. Los pichones tuvieron piel y plumón negro denso en la cabeza y la espalda, piel rosada en el cuello, pecho y partes laterales, negro con castaño esparcido en el plumón en los muslos, pero negro en las piernas, tarsos y dedos. El pico era negro con rojo anaranjado en el tegumento, comisura y partes interiores. Durante la visita al nido con pichones uno de los padres auyentado emitió una serie de sonidos *UOGH* fuertes. La ubicación particular del nido, en un hueco poco profundo, con una corona de ramas en la parte superior, parece ser una características seleccionada para evitar los depredadores.

Introduction

The breeding biology of antpittas is poorly known due to their secretive habits. Nests have been reported for 11 of 41 species[2,6,8]. For *Grallaria varia* of east South America two nests and young have been described within its Amazonian range[1,2,6], but no comparable data exist for the disjunct Atlantic population, except Olrog's dubious report[4]. Egg descriptions are available from both areas[1,4,7]. Here, I report on two nests discovered during fieldwork on the effects of forest disturbance on bird communities in Iguazu National Park, Argentina (25°36'S 54°22'W).

Results

Both nests were in small open cavities atop broken trunks in large forest tracts with relatively closed canopies averaging c.20 m in height. The trunks had

Table 1. Nest and nesting tree characteristics for Variegated Antpitta *Grallaria varia*

Source	Eggs number	Egg colour	Egg diameter	Nest shape	Nest inner	Nest inner diameter	Nest height depth	Tree type	Tree diameter
	cm				mm (n)		cm	cm	m
Nehrkorn (in Ihering[5])	-	light blue-green	36 x 30	-	-	-	-	-	-
Euler[3]	-	blue-green	-	-	-	-	-	-	-
Schönwetter[7]	-	blue-green	32.3–36.4 x 26.7–29.7 (6)	-	-	-	-	-	-
Ihering[5]	-	light blue-green	35 x 28	-	-	-	-	-	-
Olrog[4]	1	light blue	-	-	-	-	roots of fallen tree near ground	dead	-
Erard[2]	1	blue-turquoise	40 x 28 (1)	flat	9	3.5	1.40	dead rotten	-
Donahue[1]	2	turquoise-blue	33.5 x 26.5	shallow cup	-	-	1.1	dead	
Quintela[6]	2 young	-	-	shallow cup	20	-	1.50	dead	40–50
Timbó trail (this study)	2	blue-turquoise	34.6–35.8 x 28.8–29.4 (2)	cup	14	5	2.55	alive	35
Macuco trail (this study)	-	-	-	-	-	-	2.40	dead	17

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2

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Figure 1. Broken trunk with crown of stems used by nesting Variegated Antpitta *Grallaria varia* along Timbó trail, Iguazu National Park, Argentina (Jorge J. Protomastro)

Figure 2. Eggs and nest of Variegated Antpitta *Grallaria varia* (Jorge J. Protomastro)

Figure 3. Young of Variegated Antpitta *Grallaria varia* (Jorge J. Protomastro)

crowns of regrowing vertical branches. The first was located near a trail, 3 km south of the Timbó park ranger's house, on 21 November 1998. The trunk was a live, 2.5 m-high *Allophylus edulis* (Sapindaceae), with a crown of eight vertical branches 6–11 cm in diameter and several branches below (Fig.1). It was inclined 30°. The crown had a hole 45 x 16 cm and 10 cm deep, and one side was elevated by 30 cm. The nest was cup-shaped, with an internal diameter of 14 cm and was 5 cm deep, constructed of dead leaves, twigs and fern petioles, and thin rootlets. It contained two turquoise eggs (Fig. 2). Nestlings were observed a few days after hatching on 6 December, and were photographed one week later when their wing feathers were growing. They had black skin and dense black downy plumage from head to back, pink skin on throat, breast and sides, black with sparse brown down on upper legs but black lower legs, and black tarsus and toes (Fig. 3). The bills were black with red-orange gapes, mouth-linings and lower mandible bases.

When I approached the nest, the adult stretched its neck and bill vertically upward, presumably to avoid recognition by a predator. When the nest was examined during incubation, the parents remained silent in the undergrowth, but after hatching they

emitted an *OOAH* note once every 7–12 seconds. This loud vocalisation was first described by Erard[2].

The second nest was discovered by M. Castelino (pers. comm.) in early November 1998 on the Macuco trail. It contained a nestling when discovered, but when I measured the trunk three weeks later it had been abandoned. It was placed on a 2.45 m-high partially fallen trunk of *Diatenopteryx sorbifolia* (Leguminosae) with a crown of six branches 2 cm in diameter. The crown possessed a 10 cm-deep unvegetated hole in its centre.

Discussion

These nests accord with others of the Formicariidae[8]: atop partially fallen trunks no more than 3 m above ground. A few nests have been in the low understorey or vines, but a nest of *Grallaria varia* reported by Olrog, placed near ground level and containing a different-coloured egg (Table 1) suggests an error in species identification.

The nest described by Erard[2] was loosely constructed of a thick mass of dead leaves, whereas the nest on the Timbó trail was significantly larger and cup-shaped (Table 1). Erard's photograph suggests that the stump was probably too small to accommodate a nest as large as that on the Timbó trail. The nest reported by Quintela[6] did not possess a well-defined cup shape because it was discovered many days after hatching, when its shape and diameter had changed due to the adults feeding visits. Quintela observed that the young had yellowish gapes, rather than the red-orange described by Erard and myself, but my observations do suggest that this coloration becomes paler with age.

Nest placement, atop broken trunks with a regrowth of stems, or on the outer part of a trunk, which forms a 'wall' around the nest[2], appear to be characteristics selected in order to avoid predation.

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