Description of the nest, eggs and nestling period of the Chestnut-crowned Antpitta *Grallaria ruficapilla* from the eastern Ecuadorian Andes

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Received 15 February 2005; final revision accepted 10 May 2005
Cotinga 25 (2006): 47–49

Describimos un nido, los huevos y el ciclo de los pichones de Grallaria ruficapilla ruficapilla hallado a unos 2.250 m en la ladera este de los Andes en la provincia de Napo, Ecuador. El nido estaba mayormente construido con palitos y ramas, con hojas de bambú, algo de musgo, pecíolos de hojas y hojas de dicotiledóneas, recubierto levemente de raicillas oscuras. Se encontraba a 197 cm de altura, en una mata de ramas vivas del bambú Chusquea. La postura consistía de dos huevos turquesa uniformes, o azul verdoso claros, sin marcas o manchas. Los huevos eclosionaron el 29 de septiembre de 2004, y ambos pichones abandonaron el nido 18 días después. Dos adultos (presumiblemente ambos miembros de una pareja) acercaban material al nido durante la incubación, acomodaban el revestimiento del nido con sus picos, incubaban y atendían a los pichones en el mismo.

Chestnut-crowned Antpitta *Grallaria ruficapilla* occurs in Andean forests of Venezuela, Colombia, Ecuador and northern Peru, at 1,200–3,600 m[14]. In the eastern Ecuadorian Andes *G. ruficapilla* is one of the most numerous species by voice, yet little is known of its breeding biology. Here we present a description of the nest, nest location, eggs and nestling period of *G. r. ruficapilla* from 2,250 m elevation in the eastern Ecuadorian Andes.

Nest description

On 20 September 2004, we located a nest of *G. ruficapilla* in montane Andean forest at SierrAzul Research Station (00º40'S 77º55'W), part of the Andean Biodiversity Research Center west of Cosanga, Napo province, Ecuador. Habitat around the nest consisted of a canopy composed almost entirely of *Alnus acuminata* (Betulaceae), c.20 m in height, with a variable understorey of occasionally dense *Chusquea* bamboo (Poaceae) interspersed with herbaceous Solanaceae, Urticaceae and Piperaceae. The nest site was on the edge of a patch of *Chusquea* and surrounded by more open herbaceous understorey.

The nest was located 197 cm above ground on a mat of 8–10 supporting *Chusquea* branches that ran horizontally beneath the nest (Fig. 1). Other detritus (fallen and decomposing leaves) was between the *Chusquea* branches and the nest, and may have been an old *Grallaria* nest itself. Immediately above the nest (c.10 cm) was a sparse overhang of live *Chusquea* leaves, providing cover for the nest.

The nest was composed primarily of sticks and twigs, with additional bamboo leaves, sparse moss, leaf petioles and some dicot leaves, and a sparse lining of dark rootlets. The outer diameter was 27.0 x 27.0 cm (measured at perpendicular angles). The

Figure 1. Adult Chestnut-crowned Antpitta *Grallaria ruficapilla* on its nest, SierrAzul Research Station, Napo province, Ecuador, 2,250 m elevation (Harold F. Greeney)

Figure 2. Nest cup of Chestnut-crowned Antpitta *Grallaria ruficapilla* containing two eggs, SierrAzul Research Station, Napo Province, Ecuador, 20 September 2004 (Harold F. Greeney)

inner diameter (i.e. the egg cup) measured 11.5 x 11.5 cm. The cup depth was 7 cm and the external nest height (i.e. bottom of the nest proper to the rim of the cup) was 18.5 cm, with no hanging nest material below the nest.

Egg description

When located, the nest contained two eggs warm to the touch. Video and field observations from 20 September 2004 showed *G. ruficapilla* incubating the two eggs. Eggs were uniform turquoise or pale greenish-blue, with no flecking or spotting (Fig. 2). Both eggs had a short subelliptical shape, with one egg notably stubbier than the other. The first egg measured 28.5 x 24.3 mm and weighed 8.765 g. The second egg measured 29.9 x 24.2 mm and weighed 9.095 g. Both eggs were checked six days later and weighed 8.442 g and 8.700 g, respectively. This represents a water loss rate for the first egg of 0.053 g/day and 0.065 g/day for the second. Using an estimated incubation period of 19 days[1,3] we calculate an 11% and 13% loss of mass for each egg, respectively. This is somewhat less than that reported for *G. guatimalensis*[1].

Other observations

The eggs hatched on 29 September and both young left the nest on 17 October, i.e. an incubation period of at least nine days and a nestling period of 18 days. We observed two adults (presumably both members of a pair) incubating and subsequently attending nestlings. Both adults also engaged in nest maintenance by occasionally bringing single rootlets when arriving to incubate, and adding them to the lining of the cup. Both adults were observed to rapidly thrust their bill in and out of the nest lining as described for other Formicariidae[1,8,10], presumably as a method of parasite removal[1,6,11]. Details of incubation behaviour and nestling care will be presented elsewhere.

Discussion

Previous descriptions of the eggs of *G. ruficapilla* are consistent with the observations presented here (summarised in Krabbe & Schulenberg[14]), with the exception of a clutch of three eggs collected by S. B. Gabaldon (American Museum of Natural History, New York, 13865), which was described as 'buffy eggs with rufous blotches'[22]. Clutch size, colour and markings of Gabaldon's eggs are inconsistent with *G. ruficapilla* and the genus *Grallaria* in general, and the identity of these eggs is suspect[14]. All other described clutches of *G. ruficapilla* were of subelliptical, bluish-turquoise eggs without markings[14,20]. Clutch size of described nests has been invariably two eggs[14,20].

Despite the collection of several clutches of *G. ruficapilla*[14], we are aware of only one previous description of the nest. T. K. Salmon described the nest from Antioquia, Colombia as '... a mass of roots, dead leaves, and moss, lined with roots and fibers ... placed at some height from the ground'[20]. The nest in eastern Ecuador differs somewhat from Salmon's observations in that it was composed primarily of sticks and twigs. Otherwise the nest composition is qualitatively similar, with moss and dead leaves in the bulk of the cup, and rootlets lining the nest. The structure and composition of the Ecuadorian nest is most similar to a nest described for the closely related *G. watkinsi*[15] (see also *G. hypoleuca*[17]). Both the Ecuadorian *G. ruficapilla* and *G. watkinsi* have nests composed primarily of sticks and twigs, forming a messy broad cup. Most other *Grallaria* build bulky cups of decaying leaves, moss and other herbaceous material with few sticks[2,3,5,8,9,13,14,21,22].

Nest placement amidst dense branches has been observed for some *G. guatimalensis* nests[2,16], *G. watkinsi*[15] and *G. quitensis*[9]. Most other *Grallaria* have been reported to nest against upright or fallen trunks or in the main forks of trees[3,5,8,9,13,14,17–19,21,22].

September breeding for *G. ruficapilla* coincides with the early dry season (September–December) in the Napo region of the eastern Andes. Other records of breeding, breeding-condition adults and fledglings are available from virtually all months[4,12,14]. We require more data to know whether *G. ruficapilla* breeds seasonally as do some other *Chusquea* specialists in our study area (e.g. *Poecilotriccus ruficeps*[7]).

Acknowledgements

We thank Bill Phillips for generously permitting access to his private reserve, and Carmen Bustamante and Mitch Lysinger for logistical help. The study was funded in part by donations from John V. & the late Ruth Ann Moore through the Population Biology Foundation, and by a Rufford Award through the Whitley Lang Foundation. HFG thanks the Hertzberg Family Foundation for their support of his research. PRM thanks Gail Adams, M. Vargas and C. del Agua, and acknowledges an Ed N. Harrison Memorial Scholarship through the Western Foundation of Vertebrate Zoology. The PBNHS aided our studies with logistical support and companionship. This is publication no. 60 of the Yanayacu Natural History Research Group.

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