

First description of a nest of the Rufous-tailed Antthrush *Chamaeza ruficauda*

Kristof Zyskowski

Peabody Museum of Natural History, Yale University, 170 Whitney Avenue, New Haven, Connecticut 06520, USA.
Corresponding author: kristof.zyskowski@yale.edu

Received on 5 November 2014. Accepted on 12 January 2015.

ABSTRACT: I report a nest of Rufous-tailed Antthrush discovered on 9 December 1998 in the Serra dos Órgãos National Park, Rio de Janeiro, Brazil at the altitude of 1950 m. The nest was located in a natural tree cavity with vertically-elliptical entrance hole ca. 5 m above the ground. It was a thick pad of piled bamboo leaves, leathery tree leaves, fungal rhizomorphs, grass, and a piece of cellophane. The nest contained two nearly fully-grown nestlings, which were fed by both parents. The architecture of the nest and parental behavior are compared to those of other antthrushes.

KEY-WORDS: Formicariidae, Atlantic Forest, *Chusquea*, bamboo, snake skin.

The Neotropical family Formicariidae was thought to include both the antthrushes, characterized by cavity nests and unmarked white eggs, and the antpittas, with open cup nests and often marked eggs (Ridgely & Tudor 1994, Krabbe & Schulenberg 2003). However, recent studies based on genetic markers have recovered these two groups as non-sister clades and, as a result, the formicariid family was restricted to the antthrush genera *Chamaeza* and *Formicarius* (Rice 2005, Ohlson *et al.* 2013, Remsen *et al.* 2014). The antpitta genera *Grallaria*, *Hyllopezus*, and *Myrmothera* were reclassified as Grallariidae, and *Pittasoma* antpittas were transferred to Conopophagidae.

Nesting biology of the antthrushes remains poorly known and nests have been described for only two of the six currently recognized species of *Chamaeza* and four of the six *Formicarius* (Krabbe & Schulenberg 2003). In *Chamaeza*, nest descriptions are based on a few (*C. campanisona*) or merely a single nest (*C. nobilis*). Among the species lacking any information on nest architecture is the Rufous-tailed Antthrush (*Chamaeza ruficauda*) and its two purportedly sister taxa with which this species has been confused in the past, the Cryptic (*C. meruloides*) and Schwartz's (*C. turdina*) antthrushes (see Raposo & Teixeira 1992, Willis 1992).

The Rufous-tailed Antthrush is a restricted-range species endemic to the Atlantic Forest region of South America. It inhabits humid forests and secondary woodlands with dense understory of bamboo. It prefers mountainous terrain as high as 2200 m a.s.l. in the Serra

do Mar of south-eastern Brazil, but as low as 500 m in Rio Grande do Sul and 320 m in Misiones, Argentina (Ridgely & Tudor 1994, Bencke & Kindel 1999, Krabbe & Schulenberg 2003, Bodrati & Cockle 2006). In areas of sympatry with *C. meruloides* and *C. campanisona*, *C. ruficauda* tends to inhabit higher elevations (Willis 1992, Krabbe & Schulenberg 2003). All three species co-occur in the Organ Hills (Serra dos Órgãos) subrange of Serra do Mar where *C. ruficauda* is uncommon above 800 m (Mallet-Rodrigues *et al.* 2007; see also sound archives data of the Cornell University Macaulay Library and www.xeno-canto.org). Here I describe a nest of *C. ruficauda* found in this area.

The nest was discovered along the Bell Rock Trail (Trilha da Pedra do Sino) at 1950 m a.s.l. in the Serra dos Órgãos National Park, Rio de Janeiro (approximate coordinates 22°27'25" S, 43°01'10" W). The habitat was upper montane rain forest with 10-15 m tall canopy, and a dense understory of *Chusquea* and *Merostachys* bamboo. On 10 December 1998 I was able to locate a nest by following the adults carrying food to the nestlings. The birds were not particularly shy and could be easily observed from a distance of ca. 30 m through a 10 x 42 Zeiss binoculars.

The nest was located in a natural cavity in a tree growing at the bottom of a narrow, steep-sided ravine with a small creek running through it (Figure 1A). The lip of the nest hole was ca. 5 m up from the base of the tree but only 2 m above the level of a nearby trail. The nest tree was a broken-top stump with a smooth, light-colored

bark and was 42 cm in diameter at the level of cavity entrance. The entrance hole was facing down slope (SSW, 220°), opened upwards, and was constricted to 10 cm in diameter at the level of the lip (Figure 1B). The cavity was not visible from the ground because of a thick layer of *Chusquea* bamboo just below it, but was not concealed by vegetation from above.

The actual nest was 45 cm below the lip of the entrance and was a shallow cup ca. 12 cm in diameter. It was a thick accumulation of piled and only loosely

compacted plant material (Figure 2). I was able to examine only the top 5 cm layer of the nest. The bulk of it consisted of dry leaves and fragmented nodal sheaths of bamboo (mainly *Chusquea leptophylla*, with a few broader leaves of *Chusquea aff. anelytroides*). Mixed with the bamboo leaves were some black rhizomorphs of marasmoid fungus and a few grass blades, and the top layer also included a few leathery evergreen tree leaves and a 4 x 3 cm piece of cellophane. The nest cup and the lip of the cavity were not soiled with fecal material.



FIGURE 1. The Rufous-tailed Antthrush nest site, with nest entrance hole indicated with an arrow (A), and nest cavity seen from above (B).



FIGURE 2. A sample of plant material from the top layer of the nest of Rufous-tailed Antthrush.

The nest contained two completely feathered nestlings one of which was removed briefly for examination. It had fully open eyes and bill (exposed culmen) ca. 13 mm long. In coloration it was similar to the attending adults but more ochraceous ventrally. The rectrices were about half-grown and without distal darkening or pale terminal fringe characteristic of the lower-elevation congeners, *C. meruloides* and *C. campanisona*. The attending adults also had uniform rufous-brown tails, concolor with the back, and were more uniformly rufescent dorsally than the parapatric *C. meruloides*, which tend to be more olivaceous brown with a contrasting rufous brown forecrown. During ca. 1.5 h of observation in mid-morning, the nestlings were fed only four times. The food items brought for them were too mangled to be identifiable through binoculars. Both adults were involved in nestling provisioning. At one instance, both of them arrived at the nest with food at the same time. Instead of flying to it directly, the parents accessed the nest by climbing a system of interconnected, diagonally oriented bamboo stems, lianas, and fallen branches suspended in a dense matrix of *Chusquea* bamboo just below the nest. In contrast, they left the nest by flying out directly. On one occasion, the exiting bird appeared to have been carrying a white fecal sac. Occasionally the adults uttered short, guttural “krrr”, either contact or alarm call.

This first nest of *C. ruficauda* is similar in its placement to the few known nests of other *Chamaeza* species. The selection by *C. ruficauda* of a natural tree cavity with vertically-elliptical entrance hole is shared with *C. nobilis* in Colombia (Cadena *et al.* 2000) and *C. campanisona* in Argentina and Brazil (Maders & Matuchaka 2011, Franz 2013; see also A. Studer photographs in Krabbe & Schulenberg 2003 and a presumed nest in Bencke 1998). *C. campanisona* are also said to nest in crevices in earthen banks (Canevari *et al.* 1991, Krabbe & Schulenberg 2003). The height above the ground of the *C. ruficauda* nest (ca. 5 m) falls at the upper limit of the range reported for *Chamaeza* in the literature (1-5.13 m), and the cavity depth (45 cm) on the lower end of the reported range (21-100 cm).

The composition of the nest described herein agrees well with that of previously reported nests of *C. campanisona*, but not *C. nobilis*. Nests of the former tend to be simple cups or platforms of plant material, typically leathery evergreen tree leaves (Bertoni 1901, Maders & Matuchaka 2011, Franz 2013). In contrast, the only known nest of *C. nobilis* consisted merely of a few feathers at the bottom of the cavity (Cadena *et al.* 2000). My nest was rather bulky and composed of a wider range of plant materials.

The presence of a piece of cellophane in the nest of *C. ruficauda* may indicate a preference for reptilian shed skin in this species. The use of squamate exuviae

in nest construction is known in several families of passerine birds and the cellophane appears to be a look-alike substitute for this shiny, semi-transparent material (Zyskowski & Prum 1999, Hansell 2000). Although the use of such material has not been documented previously in *Chamaeza*, ventral scutes of a large snake have been reported in a nest of one of the *Formicarius* anthruses (Skutch 1945, 1969).

The presence of nearly fully-grown nestlings in early December indicates a nesting season during austral spring in *C. ruficauda*. This timing is typical of other passerine birds in southeastern Brazil and agrees with the previous report of potential breeding activity (enlarged gonads) in this species (Belton 1985). Biparental provisioning of nestlings I observed is the norm in the formicariid clade. On the other hand, my observation of a parent bird which may have been carrying a fecal sac is noteworthy as nest sanitation remains undescribed in *Chamaeza* and because *Formicarius* anthruses are thought to consume fecal material produced by the nestlings (Skutch 1969, Krabbe & Schulenberg 2003).

Our understanding of nest architecture and nesting behavior of the anthruses remains far from complete and detailed descriptions of additional nests are needed to test the validity of preliminary generalizations presented here.

ACKNOWLEDGEMENTS

I am grateful to Marcos Raposo for his hospitality and logistical support during my stay in Brazil and to Marcos and Bret M. Whitney for their participation in field observations of the nest. I also thank Lynn Clark (Iowa State University) for identifying the bamboo species. My research in Brazil was funded by the Tinker Field Research Grant of the University of Kansas and my brother Jerzy.

REFERENCES

- Belton, W. 1985. Birds of Rio Grande do Sul, Brazil. Part 2, Formicariidae through Corvidae. *Bulletin of the American Museum of Natural History*, 180: 1-241.
- Bencke, G. A. 1998. Notes on the breeding of Blue-bellied Parrot *Triclarina malachitacea*. *Cotinga*, 10: 71-78.
- Bencke, G. A. & Kindel, A. 1999. Bird counts along an altitudinal gradient of Atlantic forest in northeastern Rio Grande do Sul, Brazil. *Ararajuba* 7: 91-107.
- Bertoni, A. de W. 1901. *Aves nuevas del Paraguay: continuación á Azara*. Talleres Nacionales de H. Kraus, Asunción, Paraguay.
- Bodrati, A. & Cockle, K. 2006. Habitat, distribution, and conservation of Atlantic forest birds in Argentina: notes on nine rare or threatened species. *Ornitología Neotropical*, 17: 249-264.
- Cadena, C. D.; Londoño, G. A. & Parra, J. L. 2000. Nesting records of five antbird species from the Colombian Amazon. *Wilson Bulletin*, 112: 313-317.

- Canevari, M.; Canevari, P.; Carrizo, G. R.; Harris, G.; Mata, J. R. & Straneck, R. J. 1991.** *Nueva guía de las aves argentinas*. Fundación Acindar, Buenos Aires.
- Franz, I. 2013.** On the nest, eggs and nestlings of the Short-tailed Antthrush (*Chamaeza campanisona*). *Revista Brasileira de Ornitologia*, 21: 101-104.
- Hansell, M. H. 2000.** *Bird nests and construction behaviour*. Cambridge University Press, Cambridge, UK.
- Krabbe, N. K. & Schulenberg, T. S. 2003.** Family Formicariidae (ground-antbirds), p. 682-731 In: *Handbook of the birds of the world*, vol. 8 (J. del Hoyo, A. Elliott and D. Christie, eds.). Lynx Edicions, Barcelona.
- Maders, C. J. & Matuchaka, V. 2011.** Descripción de nido, huevos y pichones de la Tovaca Común (*Chamaeza campanisona tshororo*). *Nuestras Aves*, 56: 10-11.
- Mallet-Rodrigues, F.; Parrini, R. & Pacheco, J. F. 2007.** Birds of the Serra dos Órgãos, state of Rio de Janeiro, southeastern Brazil: a review. *Revista Brasileira de Ornitologia*, 15: 5-35.
- Ohlson, J. I.; Irestedt, M.; Ericson, P. G. P. & Fjeldså, J. 2013.** Phylogeny and classification of the New World suboscines (Aves, Passeriformes). *Zootaxa*, 3613: 1-35.
- Raposo, M. A. & Teixeira, D. M. 1992.** Revalidação de *Chamaeza meruloides* Vigors, 1825. *Boletim do Museu Nacional (Rio de Janeiro), Nova Serie, Zoologia*, 350: 1-8.
- Remsen, J. V., Jr.; Cadena, C. D.; Jaramillo, A.; Nores, M.; Pacheco, J. F.; Pérez-Emán, J.; Robbins, M. B.; Stiles, F. G.; Stotz, D. F. & Zimmer, K. J. 2014.** *A classification of the bird species of South America*. American Ornithologists' Union. Available at <http://www.museum.lsu.edu/~Remsen/SACCBaseline.htm> Accessed 5 November 2014.
- Rice, N. H. 2005.** Further evidence for paraphyly of the Formicariidae (Passeriformes). *Condor* 107: 910-915.
- Ridgely, R. S. & Tudor, G. 1994.** *The birds of South America*, vol. 2. University of Texas Press, Austin, Texas.
- Skutch, A. F. 1945.** On the habits and nest of the ant-thrush, *Formicarius analis*. *Wilson Bulletin*, 57: 122-128.
- Skutch, A. F. 1969.** *Life histories of Central American birds*, vol. 3. Pacific Coast Avifauna 35. Cooper Ornithological Society, Berkeley, California.
- Willis, E. 1992.** Three *Chamaeza* antthrushes in eastern Brazil (Formicariidae). *Condor*, 94: 110-116.
- Zyskowski, K. & Prum, R. O. 1999.** Phylogenetic analysis of the nest architecture of Neotropical ovenbirds (Furnariidae). *Auk*, 116: 891-911.

Associate Editor: Luis Fábio Silveira