

OBSERVATIONS ON THE BREEDING AND VOCALIZATIONS OF THE FULVOUS-BREASTED FLATBILL (*RHYNCHOCYCLUS FULVIPECTUS*) IN EASTERN ECUADOR

Harold F. Greeney¹, Niels Krabbe², Mitch Lysinger³, & W. Chris Funk⁴

¹Yanayacu Biological Station and Center for Creative Studies, c/o Foch 721 y Amazonas, Quito, Ecuador. *E-mail*: revmmoss@yahoo.com

²Zoological Museum, University of Copenhagen, Universitetsparken 15, DK-2100 Copenhagen, Denmark.

³Hacienda San Isidro, c/o Carrion 21-01 y Juan Leon Mera, Quito, Ecuador.

⁴Division of Biological Sciences, University of Montana, Missoula, MT 59812, USA.

Resumen. – **Observaciones sobre la nidificación y las vocalizaciones del Picoplano pechifulvo (*Rhynchocyclus fulvipectus*) en el este del Ecuador.** – Dos nidos del Picoplano pechifulvo (*Rhynchocyclus fulvipectus*) fueron encontrados en el nordeste del Ecuador. Para un nido reportamos una duración de incubación de, por lo menos, 18 días y el pichón se voló después de 27 días. Un adulto inició el vuelo del pichón al entrar y salir del nido con un insecto en el pico, mientras que el otro adulto estaba cantando al lado del nido. Fotos del pichón y del nido, mas una descripción primera vez de las vocalizaciones están incluidos.

Abstract. – Two nests of the Fulvous-breasted Flatbill (*Rhynchocyclus fulvipectus*) were encountered in eastern Ecuador. For one nest we report an incubation period greater than or equal to 18 days and a nestling period of 27 days. An adult initiated the fledging event by repeatedly entering and leaving the nest with food while the other adult sang from a nearby perch. Photos of the nestling and nest are provided, as well as a description of the first known song of this species. *Accepted 13 February 2004.*

Key words: Natural history, *Rhynchocyclus fulvipectus*, Fulvous-breasted Flatbill, song, fledging, egg, incubation, nestling, nest.

INTRODUCTION

The genus *Rhynchocyclus* (Tyrannidae) contains four species ranging from Mexico to Bolivia (Ridgely & Tudor 1994), with three species occurring in Ecuador (Ridgely & Greenfield 2001). Their nests are reported to be “pear” or “retort” shaped structures suspended from a drooping branch, usually in an open area over a stream or path. They have a round chamber with a downward facing tubular entrance (Skutch 1960, Hilty & Brown 1986, Stiles & Skutch 1989, Howell & Webb 1995). Eggs are pale red-brown or white with sparse,

to fairly heavy, brown speckling or mottling (Sclater & Salvin 1879, Skutch 1960, Rowley 1984). Reported clutch sizes for Central American nests range from two to three (Stiles & Skutch 1989, Howell & Webb 1995).

The Fulvous-breasted Flatbill (*Rhynchocyclus fulvipectus*) occurs in the Andes from Venezuela to northern Bolivia at elevations ranging from 750 m to 2100 m (Hilty & Brown 1986, Ridgely & Tudor 1994). Of the three *Rhynchocyclus* species occurring in Ecuador, the Fulvous-breasted Flatbill is the only one found on both Andean slopes. In eastern Ecuador, it ranges from about 1000 m to 2100 m in ele-



FIG. 1. Nest of the Fulvous-breasted Flatbill with downward opening entrance indicated by the white triangle.

vation, and is an often overlooked, quiet member of mixed species flocks. Almost nothing is known of the breeding of this species. Parker & Parker (1982) give a brief description of the nest and eggs indicating similarities with other species in the genus. Sclater & Salvin (1879) describe the eggs as white with a few reddish spots near the large end, and one male in breeding condition was reported in May, in northwestern Colombia (Hilty & Brown 1986).

The vocalizations of this species are also

poorly known. Hilty & Brown (1986) give no known vocalizations for Colombia, and Ridgely & Greenfield (2001) report the call to be a wheezy and upslurred “zhreeyp.” Here we present observations from eastern Ecuador on the nest, eggs, nestlings, adult behavior, and song of this poorly known species.

STUDY AREA

All observations were made from December 2001 to December 2002 on the private

reserve of Hacienda San Isidro, near the Yanayacu Biological Station and Center for Creative Studies (00°36'S, 77°53.4W) in the vicinity of the small town of Cosanga in the Napo Province. Cloud forest habitat in the area is interspersed with tracts of cattle pasture and naturally occurring *Chusquea* sp. bamboo, but large tracts of intact forest predominate. For a more detailed site description, see Greeney *et al.* (2004).

Two nests were studied. The first, found with a single egg on 7 December 2001, was accessible by stepladder and observations were made on the egg and nestling. The second, found on 25 December 2002, was too high to be easily accessible, and observations were made on the fledging event with the observer standing approximately 10 m from the nest.

RESULTS

Nest location and construction. Both nests were located within undisturbed, epiphyte-laden cloud forest typical of the area. Both were directly over streams that ranged in width from 1.5 to 4 m in width. While one was constructed 7 m up on the tip of a 1-cm diameter (at the point of attachment) branch of a 15-m tall tree, the other was only 3 m up and built onto a similarly thin branch of an epiphytic *Psamisia* sp. (Ericaceae). The nests were pyriform in overall shape with a tightly woven inner retort-shaped chamber, with a side entrance through a long downward sloped tube (Fig 1). Overall outside length measurements of the nests were 70 and 52 cm, respectively, with a maximum width of 28 and 22 cm, and a front to back depth of 33 and 25 cm. From the outside, they appeared loosely made of large dead leaves, sticks, moss, and rootlets, including living leaves of the substrate plant. Closer inspection, however, revealed an inner ball and tubular entrance of tightly woven moss and rootlets, with the

chamber lined with dead bamboo leaves (*Chusquea* sp.: Poaceae) and strips of palm leaves (Aracaceae) in one nest, and bamboo leaves in the other. These chambers were roughly spherical, with outside measurements of 14 and 15 cm tall, respectively, by 14 and 12.5 cm wide. The tubular entrances were 12 and 10 cm long, respectively, and measured 5 and 4.5 cm wide by 4 and 3.5 cm high, at their exit points. In the first nest, this tube extended 4 cm below the bottom of the ball, and in the other only 2 cm. The insides of these chambers measured 9.5 and 9.5 cm high, respectively, and were 8.5 and 6.5 cm wide with an egg cup depth of 4.0 and 2.5 cm. In the first case, the chamber was roughly round and, in the second, more teardrop-shaped, with the ceiling reaching a distinct point.

Egg and nestling description. The nest for which clutch size was determined contained only one egg. Similar to that described by Sclater & Salvin (1879), the egg was buffy-white with sparse dark red-brown flecks. It measured 27.3 by 16.7 mm. This single egg was incubated for 18 days before hatching, which is likely close to the normal incubation period. The day after hatching, the nestling's skin was orange-pink with a few tufts of sparse gray down in the scapular region. The gape was a pale creamy yellow with a bright yellow-orange mouth lining. The left tarsus measured 6.4 mm and the bill, from the front of the nares to the tip, measured 2.1 mm. At the age of 6 days, the nestling's overall appearance had changed little. Contour feather development had just begun and the eyes were still closed. Description of nestling pterylosis follows Proctor & Lynch's (1993) synthesis of methods developed by Miller (1928) and Stewart (1953). Capital tract feather development was visible below the skin on the hind crown and extending as a narrow stripe on the middle of the head. There was very little development of



FIG. 2. The 6-day old nestling of the Fulvous-breasted Flatbill.

the intertalar, malar, and submalar tracts while the ventral cervical, sternal, and abdominal tracts were just beginning to develop below the skin. Dorsally, contour feather development had begun in the humeral and femoral tracts but was most advanced along the spinal tracts. The cervical and pelvic regions were just visible below the skin while the dorsal spinal tract was just beginning to break the skin and formed a distinct “V,” opening posteriorly. Each arm of the “V” was covered with sparse gray down and a few down feathers adorned the humeral region as well. Primary and secondary pins had broken the skin approximately 1 mm while the rectrices had not yet broken through the skin. Skin color had lightened to a paler yellow-pink (Fig 2). The tarsus measured 8.3 mm and bill at nares measured 2.9 mm. At the age of 20 days, no description of the nestling was made, but its tarsus measured 17.9 mm and bill at nares measured 5.7 mm. The nest was first found empty on the afternoon of 21 January, indicating a nestling period of 27 days.

Adult behavior, vocalizations and fledging event.

While observers were around the nest during incubation, adults approached silently, then disappeared and we were unable to determine if they remained in the vicinity. During nestling period, however, the adults responded to observer presence with a loud repeated

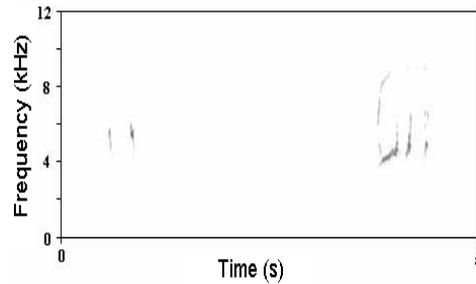


FIG. 3. Sonogram of vocalizations of the Fulvous-breasted Flatbill recorded just prior to fledging.

“*zbreep!*” alarm note. They moved from perch to perch around and above the observer, 5–15 m away, and often in the canopy, while remaining just out of our sight. Usually, this behavior was exhibited by a single adult but, on one occasion, both adult participated in scolding us. On 25 December at 12:00 h (EST), the higher of the two nests was visited and one of the adults was noted to be singing repeatedly from a perch, approximately 3 m above and 4 m behind the nest. It was well hidden in the vegetation and, due to the steep incline of the ground at that point, was approximately 2 m above the ground. The second adult was seen bringing food repeatedly to the nest, and the young bird could be heard begging loudly from within. We left immediately and returned at 13:00 h for recording the song. The singing adult continued its vocalizations. Generally, the complete song appeared to last 6–10 s, and range from 4 to 6 kHz, which is generally higher than the values recorded for congeners (N. Krabbe pers. observ.). It consisted of two to four chips (usually three) then a 3–7 s pause followed by a sharp rising note and two rapid chip notes (Fig 3). This final portion lasted 0.5 to 0.7 s and is best described as a “*weedid!*”. At 13:30 h, the second adult approached the nest and flew into the entrance tunnel holding a large (wingspan c. 10 cm) dragonfly (Odonata: Anisoptera). The adult entered the nest

tube but its tail remained protruding from the entrance at which point it paused for approximately a second, then dropped from the entrance still holding the dragonfly. It flew to perch 2 m from the nest making a repeated sharp chip calls. Thirty seconds to a minute later, it repeated this maneuver, and then a third and fourth time. Upon leaving the nest for the last time, still holding the dragonfly in its bill, the adult was followed out of the nest by a single young bird. The fledgling made a short upward curving flight then dropped to land on the side of the steep embankment, 5 m below the nest. From this position, it gave a repeated call which closely approximated the song of the adult above the nest, but which lacked the repetitive nature and was distinctly more garbled or slurred. The second adult quickly ate the dragonfly, then flew down to scold us, landing from 3–4 m away, and giving the repeated “*zhrreep!*” call described earlier. In order to allow the fledgling to be cared for, we left the area immediately. Before leaving it was noted that no further movement or noise emanated from the nest, and we believe it was empty.

DISCUSSION

As described by Parker & Parker (1982), nests were pyriform and closely resemble descriptions for other species of the genus (Skutch 1960, Hilty & Brown 1986, Stiles & Skutch 1989, Howell & Webb 1995). The only other reported nestling period for the genus was about 23 days for the Eye-ringed Flatbill (*R. brevirostris*) in Costa Rica (Skutch 1945). This is longer than nestling periods reported for any other Central American tyrannid by Skutch (1945). Similarly, the 27 day period for the Fulvous-breasted Flatbill seen here is longer than that known for any other genera of flycatchers occurring in the study area including *Mecocerculus*, *Mionectes*, *Leptopogon*, *Poicilotriccus*, and *Ochthoeca* (Greeney unpubl.

data). Further investigation on feeding rates, nestling diet, and other aspects of the natural history of this species are needed to answer questions raised by this long nestling period.

The upsurred “*zhrreep!*” described for the species elsewhere (Ridgely & Greenfield 2001) was, in our study, considered as an alarm call when we were near the nest. Additionally, it was used by the adult coaxing the nestling to leave the nest. The fledgling’s vocalizations produced immediately after leaving the nest, a close imitation of the adult song, suggest that the presence of the singing adult near the nest around the time of fledging may be important for imprinting the young bird, but this deserves further study. We hope these observations encourage others to more closely examine the natural history of this and other poorly known species.

ACKNOWLEDGMENTS

As always, we thank the Bustamante family, and especially Carmen, for access to their private reserve and for logistical support. We thank B. Counihan, G. Diaz, J. Heyhurst, and S. Kerr, for help in the field. For financial assistance, we acknowledge the Population Biology Foundation and Ruth Ann and John V. Moore. The PBNHS continues to provide much needed support for our fieldwork. This is publication number 21 of the Yanayacu Natural History Research Group.

REFERENCES

- Greeney, H. F., E. C. Hannelly, & M. Lysinger. 2004. First description of the nest and vocalizations of the Peruvian Antpitta (*Grallaricula peruviana*) with a northward range extension. *Cotinga* 21: in press.
- Hilty, S. L., & W. L. Brown 1986. A guide to the birds of Colombia. Princeton Univ. Press, Princeton, New Jersey.
- Howell, S. N. G., & S. Webb 1995. A guide to the birds of Mexico and northern Central America.

- Oxford Univ. Press, Oxford, UK.
- Miller, A. H. 1928. The molts of the Logger-headed Shrike, *Lanius ludovicianus*. Univ. Calif. Publ. Zool. 30: 393–417.
- Parker, T. A., & S. A. Parker. 1982. Behavioral and distributional notes on some unusual birds of a lower montane cloud forest in Peru. Bull. Br. Ornithol. Club 102: 63–70.
- Proctor, N. S., & P. J. Lynch 1993. Manual of ornithology. Avian structure and function. Yale Univ. Press, New Haven, Connecticut.
- Ridgely, R. S., & P. J. Greenfield 2001. The birds of Ecuador. Volume I: Status, distribution, and taxonomy. Cornell Univ. Press, Ithaca, New York.
- Ridgely, R. S., & G. Tudor 1994. The birds of South America. Volume II: The suboscine passerines. Univ. of Texas Press, Austin, Texas.
- Rowley, J. S. 1984. Breeding records of land birds in Oaxaca, Mexico. *Ebenda* 2: 76–221.
- Sclater, P. L., & O. Salvin 1879. On the birds collected by T.K. Salmon in the state of Antiquia, United States of Colombia. Proc. Zool. Soc. London 1879: 486–550.
- Skutch, A.F. 1945. Incubation and nestling periods of Central American birds. *Auk* 62: 8–37.
- Skutch, A. F. 1960. Life histories of Central American birds II. Pacific Coast Avifauna no. 34, Berkley, California.
- Stewart, R. E. 1953. A life history study of the Yellow-throat. *Wilson Bull.* 65: 99–115.
- Stiles, F. G., & A. F. Skutch 1989. A guide to the birds of Costa Rica. Cornell Univ. Press, Ithaca, New York.