THE NEST, EGGS, AND NESTLINGS OF THE RUFOUS-NAPED BRUSH-FINCH (*ATLAPETES LATINUCHUS LATINUCHUS*) IN SOUTHEASTERN ECUADOR

El nido, huevos, y pichones del Matorralero Nuquirrufo (*Atlapetes latinuchus latinuchus*) en el sureste de Ecuador

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ABSTRACT

I describe observations at two nests of the Rufous-naped Brush-Finch (*Atlapetes latinuchus*) from the eastern Andes of southern Ecuador. Due largely to confusion in taxonomy and recent shifts in taxonomic affinities within the group, there has been some confusion as to nest descriptions for this widely distributed Andean genus. Although the eggs of this species have been previously described, this is the first time that the nest of the nominate subspecies has been described. Two nests of *A. l. latinuchus* were open cups similar to those of other species of *Atlapetes*; both were built near the ground in areas of disturbance. One nest took around 9 days to build, and at one nest the incubation period was 16 days and nestlings fledged after 15 days.

Key words: *Atlapetes l. latinuchus*, building, eggs, incubation, nest, nestlings, Rufous-naped Brush-Finch.

RESUMEN

Presento observaciones sobre dos nidos del Matorralero Nuquirufo (*Atlapetes latinuchus*) del este de los Andes en el sur de Ecuador. Por cambios y confusión en la taxonomía de este género con distribución amplia, ha existido confusión sobre las descripciones de sus nidos. Los huevos de *A. latinuchus* fueron descritos antes, pero aún no hay descripción del nido de la subespecie nominal. Los dos nidos de *A. l. latinuchus* encontrados eran una tazas parecidas a otros nidos del genero *Atlapetes*. Ambos fueron construidos cerca del suelo en áreas de vegetación secundaria. Para un nido, el período de construcción duró 9 días y en un nido la incubación duró 16 días y los pichones volaron después de 15 días.

Palabras clave: *Atlapetes l. latinuchus*, construcción, huevos, incubación, nido, pichones, Matorralero Nuquirrufo.

The Rufous-naped Brush-Finch (*Atlapetes latinuchus*; Figure 1) was formerly considered a subspecies of *A. rufinucha* (previously Rufous-naped Brush-Finch, now Bolivian Brush-Finch), but has recently been elevated to species status and, as it is currently defined, includes nine subspecies distributed from northern Colombia and Venezuela to northern Peru (García-Moreno & Fjeldså 1999). García-Moreno & Fjeldså (1999), however, admit that subspecies at the northern end of the range might deserve species status upon closer examination. Because of these recent taxonomic shifts in such a widely distributed species, as well as confusion over intra-generic relationships (Remsen & Graves 1995), there is some confusion in the literature over descriptions of the nest and eggs of this species group. Here I describe the nest, eggs, and nestlings of the Rufous-naped Brush-

Finch (*A. l. latinuchus*) from two nests found at the Tapichalaca Biological Reserve (04º30'S, 79º10'W), located north of Valladolid in the southeastern Zamora-Chinchipe Province of Ecuador. I also provide a summary of past nest and egg descriptions for this species, and novel information on nest building, incubation and nestling periods, mass-loss of the eggs, and growth of the nestlings.

FROM THE LITERATURE.- The first reliable information for this species comes from Sclater & Salvin (1879), who describe and illustrate the eggs of *A. latinuchus elaeoprorus* (as *Buarremon elaeoprorus*) based on material obtained in Antioquia, Colombia. This description has often been repeated for *A. rufinucha* (*sensu lato*) (*e.g.,* Armani 1985, Hilty & Brown 1986), although the wording is often modified, presumably based on the figure in Sclater & Salvin (1879). Schönwetter (1981) gives egg sizes of *A. latinuchus elaeoprorus* from Antioquia (23.4-24.1 by 16.8-17.8 mm, egg mass 3.80 g, n = 4) and size from a single egg of *A. l. latinuchus* from southeastern Ecuador or northeastern Peru (23.0 by 17.0 mm, 3.50 g). Armani (1985) provides a description of the nest and eggs of *A. rufinucha* (*sensu lato*), but no geographic information or citation is included and it is impossible to determine to which race this description pertains. Additionally, information provided by Armani (1985) is often unreliable (K. Zyskowski pers. comm.). In short, the eggs of *A. latinuchus* have been reliably described (ssp. *elaeoprorus*), but there is no reliable description of the nest for this taxon as currently defined.

CHRONOLOGY OF OBSERVATIONS.- At 06:45 (EST) on 15 October 2004, I observed an adult Rufous-naped Brush-Finch carrying strips of dried grass into a dense clump of vegetation. I found the nest to be just beginning construction upon inspection, at that time consisting of only six 10-20 cm strips of dried grass and bromeliad leaves. These materials were laid down in a roughly criss-cross pattern, already bent upwards at the edges to begin forming a cup. Two other adults were present while one adult built, but I only observed one adult participate in building or approaching the nest site. The building adult brought material from 2-30 m away. By 19 October the nest appeared finished, and I saw no further activity at the nest until 24 October at 10:00, when I found a single egg. The nest was empty at 18:00 the previous day, and I suspect the egg was likely laid that morning. The second and final egg was laid in the morning of 25 October. Both eggs hatched in the early morning (05:00-06:00) of 10 November, giving an incubation period of 16 days. Both nestlings left the nest on the morning of 25 November, resulting in a nestling period of 15 days. The second nest was found at 07:45 on 9 August 2005, at which time an adult was flushed and I discovered two eggs. I could detect no embryonic development in either when I held them up to a strong light source.

NESTS.- The first nest was located in an open grassy area of heavy human disturbance and high traffic, only 20 m from the Tapichalaca lodging facilities. It was placed 35 cm above the ground, supported by upright stems of *Cyperus* sp. (Cyperaceae), *Equisetum* sp. (Equisetaceae), and several fern species. The structure was not woven or attached in any way to supporting structures, but rested loosely upon them. The nest itself was an untidy, open cup (low cup/base following Simon & Pacheco 2005) composed of dead and dry leaves and leaf strips from various grasses, *Cyperus* sp., bromeliads, and *Chusquea* bamboo (Fig. 1). It had a neat inner lining of finer pale fibers, mostly thin grass stems (Fig. 2). It was well hidden amongst the foliage of the supporting plants, but only

Figure 1. Adult Rufous-naped Brush-Finch brooding two 4-day-old nestlings at the Tapichalaca Biological Reserve, 14 November 2004.

Figure 2. Nest of Rufous-naped Brush-Finch with completed clutch at the Tapichalaca Biological Reserve, 9 August 2005.

slightly covered from above. Measurements were: outside diameter 15-18 cm, outside height 12 cm, inner cup diameter 6 cm, inner cup depth 6 cm. The second nest was also in an area of heavy disturbance, 3 m from a well-traveled trail through 7-10 year old second growth that is still occasionally grazed by horses. It was situated 20 cm above the ground, supported by multiple stems and blades of various grasses and sedges. It measured 14 cm wide by 9 cm tall outside, with an inner cup 6 cm in diameter and 5.5 cm deep. It was constructed in a nearly identical manner to the first nest.

EGGS.- Eggs were subelliptical, white with red-brown (and to a lesser extent pale lavender) flecking and spotting (Fig. 2). In both eggs at the first nest, and one at the second, markings were heaviest at the larger end and formed an indistinct wreath. The fourth egg (second nest) showed no distinct wreath, but showed stronger markings at the larger end. Egg characteristics are given in Table 1. I measured eggs at both nests, to the nearest 0.001 g several times during incubation, and calculated the daily percent mass-loss based on their original weights.

NESTLINGS.- At hatching, nestling skin was dark orange, and they were sparsely covered with patches of grey down on the head, back, and wings. Their gapes were bright yellow, with a dark red mouth lining. By day four, the nestlings' eyes were slitted but not open and there was significant development of contour feather tracts in the ventral, spinal, and femoral regions. Contour feathers did not break their sheaths until day five. By day six (Fig. 3), the nestlings' eyes were mostly open and wing pin feathers were just beginning to break their sheaths, not becoming obviously broken until day seven. By day 10 contour feather development was significant, with only sparse tufts of down visible. Nestlings' crowns were distinctly rufous, their backs olive-brown, bellies cinnamon, with upper breast and throat tinged olive. Flight feathers were approximately one-third broken from their sheaths. I weighed the nestlings at the first nest four days after hatching and every two days subsequently until day 10. Nestling masses are given in Table 2.

Table 2. Nestling masses (g) at different ages, from 4-days -old to 10-days-old, at a single nest of Rufous-naped Brush-Finch in southeastern Ecuador.

Nestling	Day 4	Day 6	Day 8	Day 10
1	13.7	18.7	20.6	23.3
2	13.2	17.0	19.8	22.1

ADULT BEHAVIOR.- During incubation, I observed what I believe to have been only a single adult attending the nest. This observation was supported upon hatching of the eggs, when I observed two adults feeding nestlings. One adult had well worn tail feathers, which were presumably damaged

Table 1. Characteristics of four eggs from two nests of Rufous-naped Brush-Finch in southeastern Ecuador. For the two eggs marked with an asterisk, the order of laying is not known, both showed no signs of development when first weighed but appeared to have begun development by the second weighing.

Nest #	Egg #	Size (mm)	Fresh mass (g)	% daily mass-loss
1	1	23.7 x 16.8	3.65	0.62
1	2	23.3 x 16.7	3.62	0.72
2	1*	22.9 x 17.5	3.72	1.04
2	2*	24.5 x 17.2	3.91	1.00

Figure 3. Six-day-old nestlings at a nest of Rufous-naped Brush-Finch at the Tapichalaca Biological Reserve, 16 November 2004.

during incubation, whereas the other had an intact tail. Only the adult that incubated was observed to brood the nestlings. The incubating adult, presumably the female, often stood while sitting on the eggs and peered into the nest. While standing it would lean into the nest and rapidly thrust its bill in and out of the nest lining, making the entire nest vibrate. In other species, this is thought to be a form of parasite removal and may also serve to clean the nest or to roll or reposition the eggs (Haftorn 1994). During the nestling period, I observed only the adult that had incubated perform both feeding and brooding behaviors. Both adults removed or ate fecal sacs. Often while incubating and brooding, the adult would close its eyes for brief periods (5 s to 1.5 min), presumably dozing. The distance at which the adult flushed from the nest at my approach (measured during early incubation 3 times at each nest) was similar in both nests and ranged from 1 to 2 m (mean ± SD = 1.5 ± 0.4 m).

CONCLUSIONS.- Although it is impossible to determine the current taxonomic placement of the taxon for which Armani (1985) described a nest, his description includes moss as part of the external structure of the nest (p. 317). Neither nest described here included moss in any portion of the nest, nor any components that might be expected to be incidentally covered with moss when brought to the nest. Both nests were built entirely of dried material, making the nest ideally camouflaged for the disturbed habitat surrounding both nest sites. I feel, therefore, that Armani's (1985) description likely pertains to another subspecies of *A. latinuchus* or possibly to *A. rufinucha* (*sensu stricto*). The egg descriptions from this study closely match those reported earlier for this species (Sclater & Salvin 1879, Schönwetter 1981). Similarly, the nest and eggs described here are similar in general form to the nests of other *Atlapetes* (Rowley 1962, Skutch 1967, Wetmore et al. 1984, Salaman et al. 1998, Oppel et al. 2003).

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