

## PARENTAL CARE OF THE BLACKISH TAPACULO (*SCYTALOPUS LATRANS*) IN NORTHEASTERN ECUADOR

Harold F. Greeney<sup>1,2</sup>, Amelie D. L. Bücken<sup>1</sup>, & Nadine Harbers<sup>1</sup>

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

<sup>2</sup>Research Associate, Museo Ecuatoriano de Ciencias Naturales, Rumipamba 341 y Av. Shyris, Quito, Ecuador.

### Cuidado parental del Churrín Negruzco (*Scytalopus latrans*) en el noreste del Ecuador.

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The genus *Scytalopus* contains around 40 species distributed throughout most of Latin America from Costa Rica southwards (Krabbe & Schulenberg 2003). Apart from basic nest descriptions for a dozen species (Sclater & Salvin 1879, Johnson 1967, Skutch 1972, Stiles 1979, Hilty & Brown 1986, Sick 1993, Krabbe & Schulenberg 1997, Christian 2001, Young & Zuchowski 2003, Greeney & Gelis 2005, Greeney & Rombough in review), almost nothing is known of their basic breeding biology. The Blackish Tapaculo (*Scytalopus latrans*), formerly a race of the Unicolored Tapaculo (*S. unicolor*), is now considered distinct (Krabbe & Schulenberg 1997, 2003). The only described nest of Blackish Tapaculo is from eastern Ecuador (Skutch 1972, as *S. unicolor*), and here we present observations at a nest found in November 2003 at the Yanayacu Biological Station and Center for Creative Studies (00°35.95 S, 77°53.40 W, elev. 2100 m) located on the private reserve of Cabañas San Isidro, Napo Province, northeastern Ecuador.

We discovered the nest at 13:00 h (EST)

on 2 November, at which time it contained two nestlings whose tarsal measurements were both 18.6 mm. The nest was a subterranean ball of dark rootlets and fungal rhizomorphs, with little or no lining. It was located about half way up a gentle, 2-m high bank beside a road. Surrounding vegetation was dense, dominated by small herbs, *Chusquea* bamboo, and 15–20 m tall trees. The nest was wedged into a natural cavity below a low (30 cm) outcropping of roots and dirt, with the entrance approximately 6 cm above the ground and 14 cm from the exposed edge of the covering outcrop. Contrary to the supposition of Skutch (1972), we saw no signs that the nest cavity had been excavated by the adults.

In order to record behaviors at the nest, we placed a video camera on a tripod 2 m from the nest. Tapes were changed every 4 h but we saw no evidence that adult behavior was adversely effected, as adults often perched on the camera or tripod on their way to or from the nest. The nest was

filmed during the period from 05:15 to 18:30 h daily, but not always for the entire period, for a total of 66.25 h from 3 November until the nestlings fledged on 11 November. Daily observation totals ranged from 7.25 to 12.75 h.

*General observations.* Both sexes fed the nestlings and an adult spent the night on the nest every day it was filmed, including the night before fledging. The adult spending the night on the nest left the nest at 05:30 h every morning, just before first light and approximately 0.5 h before sunrise in our area. Except on 3 and 4 November (8 and 7 days pre-fledging), an adult returned to the nest for the last time after 18:15 h, usually closer to 18:30 h. There was usually a period preceding this (10–20 min) with no feeding visits, and the returning adult never brought food. Adults approached the nest low in the vegetation, usually from one of only several directions, repeatedly using the same perches as they neared the nest. Adults left the nest, either by returning along the same series of perches they approached by, or by making a single directed flight (always low), landing 3–6 m from the nest. Adults often appeared to forage in tandem, and would usually bring food to the nest in close succession to each other. As noted for other *Scytalopus* (Greeney & Rombough in review), nestlings did not produce fecal sacs in the presence of adults. Instead they dropped them outside the nest entrance while adults were away. It appears they continued to produce fecal sacs during the night, as often there were 3–5 fecal sacs outside the nest at 05:30 h. Adults immediately removed fecal sacs upon their next visit to the nest, but always one at a time.

Visits to the nest were extremely rapid and mean time spent at the nest entrance (within 10 cm) was  $3.3 \pm 1.9$  s ( $n = 923$ , range = 1–18 s). The infrequent longer visits were

usually caused by prey items having to be redelivered after being dropped by a nestling. We observed a gradual decrease in the amount of time spent at the nest during feeding from  $5.1 \pm 3.3$  s, 8 days before fledging ( $n = 65$ ), to  $2.9 \pm 1.2$  s the day before fledging ( $n = 186$ ). There was also an increase in their consistency (i.e., decrease in SD) as nestlings became better able to handle prey items.

Fledging was quick and unceremonious. Both nestlings left the nest at 05:50 h, within 20 s of each other. No adult vocalizations were heard. No adult had been to the nest for 20 min and the nestlings had not yet been fed that morning. Both nestlings ran rapidly away from the nest and were not seen again. During the following 15 min, adults returned to the nest 4 times with prey items, entered and inspected the nest, then left after consuming the prey item.

*Brooding.* After 4 November, adults spent no time inside the nest except during the night (18:15–05:30). On 3 November between 06:00 and 06:15 h, an adult spent only two brief periods (47 and 156 s) inside the nest. The nest was not filmed after 17:15 on this day, and we do not know what time it entered the nest that night. On 4 November, an adult entered the nest at 17:45 and remained there for the night. This represents a brooding rate of 4% for active feeding hours (05:30–18:15 h).

*Nestling provisioning.* During 62.25 h of videotaped nestling provisioning (05:30–18:15 h), we observed 1080 feeds for an overall rate of 8.7 feeds per nestling-hour. Daily feeding rates varied little throughout the observation period ranging from 8.1 to 9.3 feeds per nestling-hour. Throughout the day, however, there were periods of higher activity, particularly in the morning, with the lowest food delivery rates around mid-day and the late afternoon.

Occasionally, after a longer period of absence (15–25 min), adults would feed at much higher rates. Twelve times we observed 15 min periods where nestlings were fed at rates of 20–24 feeds per nestling-hour. During these 1080 feeds, nestlings produced 145 fecal sacs at a rate of 1.2 fecal sacs per nestling-hour. We observed a gradual daily increase in fecal sac production rate, beginning at 0.7 on 3 November (8 days pre-fledge), and increasing to 1.4 and 1.3 on 9 and 10 November respectively.

As visits to the nest were very rapid, we were able to identify only 9 out of over 1000 prey items. These were: two adult Lepidoptera, five Orthoptera, one Phasmida, and one crane fly (Diptera, Tipulidae). Most prey items appeared very small (1–3 mm), which concurs with the diet of small arthropods reported by Krabbe & Schulenberg (2003). While not quantified, there appeared to be a tendency for adults to bring larger prey items during periods of lower feeding rates and smaller items during intense feeding bouts.

*Nestlings' begging calls.* The begging calls of the nestlings, throughout the study, were loud, buzzing, and insect-like, overall reminiscent of the calls of cicadas (Cicadidae). Nestling begging usually began as adults approached to within 15 cm of the nest, but during the first few days of observation nestlings could be induced to beg by passing a shadow over the nest entrance or making a sudden noise nearby. Continuous loud begging almost always continued after adults had left the area. Sustained begging degraded into periodic short metallic “*chur?*” sounds, which sometimes continued for up to 2 min after the adults had left and was occasionally heard in the complete absence of adults. We randomly subsampled 10 feeding events per day, 7 and 8 days pre-fledge and 1 and 2 days pre-fledge. We found that mean period of sustained begging after the departure of adults significantly

(Chi-square,  $P = >0.001$ ) decreased closer to fledging. Nestlings 7–8 days away from fledging begged for an average of  $12.2 \pm 3$  s, and when only 1 day or 2 from fledging begged for  $6.1 \pm 2.2$  s.

The globular nest of Blackish Tapaculo observed here was similar to that previously described for this species (Skutch 1972) and similar to others in the genus (e.g., Stiles 1979, Krabbe & Schulenberg 1997, Christian 2001, Young & Zuchowski 2003, Greeney & Gelis 2005). Our observations of the loud insect-like begging calls of the nestlings concurs with Skutch's (1972) observations for Blackish Tapaculo, as well as those for other *Scytalopus* species (Young & Zuchowski 2003, Greeney & Gelis 2005, Greeney & Rombough in review). Also, as noted for Silvery-fronted Tapaculo (*S. argentifrons*) (Young & Zuchowski 2003), nestlings of Blackish Tapaculo are quite vocal in the absence of adults. In fact, many tapaculo nests that are described have been found due to the loud cries of the nestlings (e.g., Rosenberg 1986, Young & Zuchowski 2003, Greeney & Rombough in review). The reasons for sustained begging in the absence of adults deserves further attention, as it is likely a strong signal for drawing predators.

Feeding rates of Blackish Tapaculo are fairly high compared with many members of the allied antbirds (Thamnophilidae) (Skutch 1996), and during certain times of the day can reach more than double what Skutch (1996) considered as abnormally high. Adults make very brief visits to the nest, and almost certainly do not regularly bring more than one food item at a time. This is a contradiction to Skutch's (1972) implied prey-loading by this species when he observed adults approaching the nest with their bills “full of insects.” It is our hope that this brief note on such a poorly studied genus encourages others to look more carefully at *Scytalopus* nests discovered in the future.

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