PARENTAL CARE AND NESTING IN THE RUFOUS-THROATED ANTBIRD, *GYMNOPITHYS RUFIGULA*, IN AMAPÁ, BRAZIL

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ON 26 April 1968, while studying ant-following birds at Serra do Navio (0° 55′ N, 52° 01′ W), Amapá, Brazil, I found a nest of a Rufous-throated Antbird (*Gymnopithys rufigula*) with two nestlings about 2 or 3 days old. I watched the care of the young from a blind built with palm leaves and set about 8 m from the nest for a total of 67 hours and 10 minutes until 8 May 1968, when the young left the nest. Afterward I occasionally watched the parents feeding the young near an ant swarm about 100 m from the nest. Willis (1967) suggested that the Bicolored Antbird (*Gymnopithys bicolor*) and the White-cheeked Antbird (*Gymnopithys leucaspis*) may be conspecific with the Rufous-throated Antbird because the three species have similar calls and behavior. This report gives data on brooding and growth of young Rufous-throated Antbirds for comparison with data from Van Tyne (1944), Willis (op. cit., 82 ff.), and Skutch (1969) for nesting Bicolored Antbirds.

The nest I found was in a site similar to that of a nest with eggs described by Beebe, Hartley, and Howes (1917) from Guyana. The Guyana nest was in a low cavity in a sapling. The Amapá nest was cup-shaped, 5 cm deep, at 48 cm up in the cavity of a rotten 102 cm stump. The stump had a wide opening on the west side from the top down to the upper edge of the nest. The internal diameter of the nest was 5.5 cm and the external diameter was about 8 cm. It was 150–200 m off the road, in a depressed area of the forest where water probably flows nearby during heavy rains. The large surrounding trees shaded it nearly all day. The nest was made of short pieces of dead palm leaves (*Astrocaryum* sp.) and the scanty lining was of finer and thinner material.

The nest sites and nests of Rufous-throated Antbirds seem very similar to sites and nests of Bicolored Antbirds (Willis, op. cit.: 82–83). Willis (pers. comm.) found one nest of White-cheeked Antbirds on 20 November 1965 at Yaapi (2° 52′ S, 77° 56′ W), eastern Ecuador. The nest cup, 0.3 m down in the hollow cavity of a 0.4 m stub and made of strips of palm leaves, was similar to those of Bicolored and Rufous-throated Antbirds. There was one egg, and on 23 November 2 eggs, very heavily streaked with purplish brown.

Feeding the Young.—The parent Rufous-throated Antbirds were similar in color, although the male seemed slightly larger than the female. Females have concealed buffy dorsal patches and males have concealed white dorsal patches,

TABLE 1

FEEDING RATES AT A NEST OF RUFOUS-THROATED ANTBIRDS

Date	Time	Approx. age	Feedings per hour
26 April	11:40–18:30	2–3 days	1.4
27	07:15–18:30	3–4	1.5
28	09:45–10:00	4–5	–
29	11:30–18:30	5–6	1.4
30	06:00–09:05, 12:00–18:30	6–7	3.3, 1.2
1 May	08:45–18:30	7–8	4.4
2	07:45–10:00, 14:00–18:30	8–9	3.5, 2.5
3	08:00–08:40, 16:35–18:30	9–10	1.0
6	08:00–18:30	12–13	1.8
7	06:00–08:40, 20:30	13–14	1.3

but the parents never displayed these patches at the nests. The only way I could tell that two birds were feeding the young was that one of the birds had two tail feathers growing (feather number 1 on the left center was three-fourths, of the full length and feather number 1 on the right center was one-half). This was the bird that brooded all night, so it probably was the female. Skutch (op. cit.: 294) reports that among antbirds only females incubate at night. The presumed male made 74 (63 per cent) of the 117 feedings for which I could identify the parent, the presumed female only 43 (37 per cent).

Willis (op. cit.: 84) reports that Bicolored Antbirds carry food obtained near swarms of army ants to young. Rufous-throated Antbirds brought food from ant swarms, but also captured food near the nest occasionally.

The parents attended the nest from the opening on the west of the stump, using two or three depressions as perches and seldom other possible perches. Food items were difficult to see, so that only large items were identified. Among large items fed the young were small lizards, cockroaches, and grasshoppers. After long but not loud calls (probably "faint-songs," according to Willis, op. cit.: 14–15), the parent came rapidly to the nest and, perching vertically or horizontally, fed the young. During feeding the tail was spread and flicked regularly. Often the parent probed repeatedly inside the nest, as reported by Haverschmidt (1953:249) for Black-crested Antshrikes, (*Sakesphorus canadensis*).

The number of feedings per hour averaged 1.4 to 1.5 until the young were 5–6 days old. The rate then increased in the morning to 3.3 to 4.4 per hour until the young were 8–9 days old, and decreased again to 1.0 to 1.8 until the birds were 13–14 days old. Young between 6 and 9 days old were fed

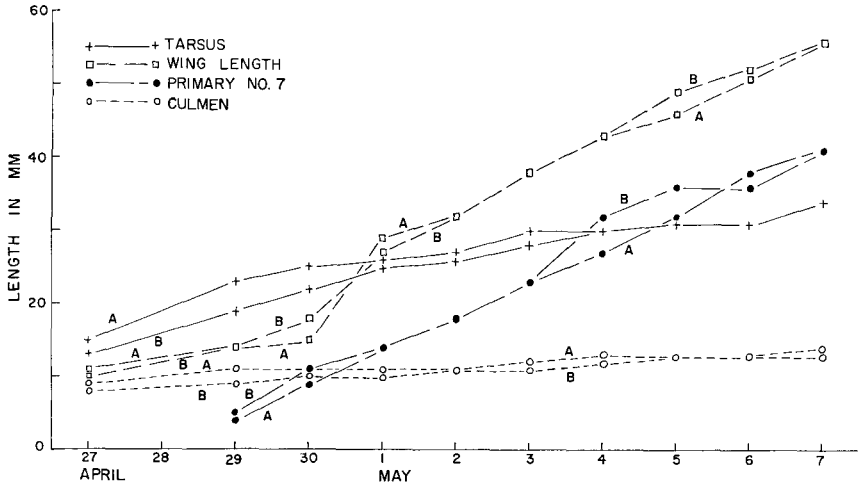

FIG. 1. Growth of two nestling Rufous-throated Antbirds at Serra do Navio, Amapá.

more in the morning than in the afternoon, when the number of feedings averaged 1.2–2.5 per hour (Table 1).

The parent ate fecal sacs before brooding when the young were small. Fecal sacs were carried away for the first time on 27 April; 3 May and thereafter fecal sacs were always carried away. Ratios of fecal sacs eaten/fecal sacs carried away were 5/0 on 26 April, 6/1 on 27 April, 4/3 on 29 April, 5/6 on 30 April, 4/5 on 1 May, 4/6 on 2 May, and 0/13 on 3–7 May.

Brooding.—Young were brooded after many feedings until 30 April, when they were 6–7 days old. Brooding was less common 1 May and rare on 2 May; no daytime brooding was noted on 3–7 May. However, the female slept on the nest at night until the night of 7–8 May.

The longest session on the nest was 104 minutes on the afternoon of 29 April and the shortest was one minute on 1 May. There were many short sessions of brooding.

Young.—When I found them, the young Rufous-throated Antbirds were naked and had dark pinkish bodies; eyes and viscera were visible through the transparent skin. The eyes were closed. The gape angles were white and the gapes orange. They were cool, unable to regulate their body temperatures, and called weakly when handled.

When the right leg of one of the young was marked with a white thread, each parent tried to take the thread out as it perched not on the rim of the nest but inside it. The thread stayed on, however, allowing me to distinguish the two young.

Figure 1 shows growth of the tarsus, beak, wing, and primary number 7 for the two young. The wing feathers grew at a faster rate than the beak or tarsus. The two young birds grew at about the same rate.

When the young were 3 or 4 days old (27 April), the pinfeathers of the wing were growing and there were dark spots on other pterylae. The egg teeth were still present. When they were 5–6 days old, 29 April, they had the eyes slightly open; there were feathers appearing on dorsal and ventral pterylae, each crural pteryla had 13 feathers and each scapular pteryla about 24 feathers, and wing feathers were growing. On 30 April, the feathers of the upper ventral pteryla were gray, while those of the lower ventral one were brown. There was one red, tiny mite on the breast of one young.

On 7 May at 08:00, when they were 13–14 days old, the young had brownish-gray irises, yellowish-white gape angles, and blackish bare skin around the eyes. The tail feathers measured 14 mm. They were unable to fly, but one hopped out of the nest and hop-fluttered away quickly. After some minutes of chasing I returned it to the nest. At 13:00 only one young was in the nest. At night, at 20:30, the remaining young was alone in the nest and had the head hidden under the breast and all the body feathers very fluffed. The next morning at 08:00 it was not in the nest.

Breeding Season and Molt.—Nests of Rufous-throated Antbirds have been recorded in late April, late June (Beebe et al., 1917) and late December (G. K. Cherrie took a male, American Museum of Natural History No. 491279, from a nest with two eggs at Ipousin, Cayenne). A brown young out of the nest less than a month was collected at Caño Seco, Mt. Duida, Venezuela, on 16 December 1928 (AMNH No. 273332). Young were out of the nest at Nappi Creek in Guyana in December and January (E. O. Willis, pers. comm.). Most records are in the respective rainy seasons at these localities, as for the related Bicolored Antbird in Panamá, but the Nappi records suggest nesting well into the dry season.

The seasons of molt are not well defined, judging from specimens in the American Museum. Scattered Rufous-throated Antbirds are in wing molt in every month collected, with the highest percentages in October to January (14 out of 35). Thus, the Rufous-throated Antbird seems to be nesting at the seasons in which it molts. According to E. O. Willis, Bicolored Antbirds often molt during nesting.

DISCUSSION

Gymnopithys rufigula has nesting habits very like those of *Gymnopithys bicolor*, which gives additional weight to suggestions (Willis, op. cit.: 2–3) that they may be conspecific. However, antbirds are not very diverse in nest-

ing habits (Skutch, op. cit.: 293–5), so that the evidence for conspecificity is still not conclusive.

Molting at the time of nesting, and nesting almost all year, is recorded also for Barred Antshrikes (*Thamnophilus doliatus*) on Trinidad (Snow and Snow, 1964). Perhaps these birds of the tropical forest undergrowth do not show the tendency for molt to follow or precede the nesting season noted for many northern birds.

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LITERATURE CITED

Beebe, C. W., G. I. Hartley, and P. G. Howes. 1917. Tropical wildlife in British Guiana. New York Zool. Soc., Vol. I.

Haverschmidt, F. 1953. Notes on the life history of the Black-crested Ant Shrike in Surinam. Wilson Bull., 65:242–251.

Skutch, A. F. 1969. Life Histories of Central American Birds. III. Pacific Coast Avifauna, 35:260ff.

Snow, D. W., and B. K. Snow. 1964. Breeding seasons and annual cycles of Trinidad land-birds. Zoologica, 49:1–63.

Van Tyne, J. 1944. The nest of the antbird *Gymnopithys bicolor bicolor*. Univ. Michigan Mus. Zool. Occ. Papers, No. 491:1–5.

Willis, E. O. 1967. The behavior of Bicolored Antbirds. Univ. California Publ. Zool., 79:1–132.

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