

## SINGLE NESTLING CARE AND MALE ABANDONING IN VARIABLE ANTSHRIKES *THAMNOPHILUS CAERULESCENS*, WITH NOTES ON EXCESS ROADSIDE CLEARING

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### INTRODUCTION

Antshrikes (Family Thamnophilidae, *Thamnophilus*) are among the commonest understory birds in many neotropical forests and woodlands, with one second-growth species (the Barred Antshrike, *T. doliatus*) even invading suburbs in southern Brazil (MS). Nest building, incubation and care of young is performed rather equally by male and female antshrikes (Oniki 1975), as in other genera of the family, even though they are often sexually dimorphic. In southeastern Brazil, between January and March 1995, we had the opportunity to study nestling and fledgling care at a nest of Variable Antshrike (*T. caerulescens*), a species in which males and females are not so different in plumage. Several well-marked races range in subtropical woodland and second growth from southeastern Brazil to the Andes (Meyer de Schauensee 1970).

### METHODS

On 16 January, Willis found a male incubating

in a mossy-outside pendent cup nest, 1.8 m high in a *Tibouchina* sp. bush by the east road of Augusto Ruschi (Nova Lombardia) Biological Reserve, at about 850 m elevation and 19°55'S, 40°34'W, in the serras near Santa Teresa, Espírito Santo. The species does not occur in tall forest there, and this was a tall second-growth former clearing by a small creek. On 19 January, the nest contained one egg and one tiny young, and the male was brooding. Oniki made observations from a car by the road, on 21, 22, 24 and 27 January, for 23 h and 10 min. She checked weights and measurements several days. Only a single nestling was present, the unhatched egg being collected on 22 January and the nest later.

### OBSERVATIONS

On 21 January, the nest was 8 cm high (plus 7.5 cm hanging moss), 10 cm across with an inner cup diameter of 9 cm and inner height of 5 cm (7 cm to fork). The young was 3–4 days old (5.6 g, wing pinfeathers 2 mm, tracts dark gray, bill 6 mm, tarsus 10 mm; eyes

closed; pale yellow gape, pink skin). The egg weighed 3.1 g, 23.5 x 17 mm, and was pinkish-white with large red-brown spots at the large end, plus a few elsewhere. On 22 January at 17:12 h, the young weighed 9 g, with a bill 8 mm, tarsus 15 mm, wing 6.5 mm. It peeped a lot on this date. By 24 January the same measurements were 13.4 g, bill 8 mm, tarsus 19, wing 15, peeping. On 27 January, 15.1 g, bill 10, tarsus 21, wing 26 (feather 6), spotted with whitish. The adults spread and flicked their tails upward (to the line of the body) slowly, calling "ah!" faintly (sounds recorded, as of young) near the ground, when they saw Oniki returning the peeping young to the nest on the 27th.

The female seemed shy the first day of observations (8:36–18:15 h) and wound up spending less time on the nest by day than the male, 187 min to his 283 (not counting her time 17:38 h on, when she went on for the night), totalling 87% of the day. She ate the small green prey she brought at 08:55 h and left; at 10:42 h, she fed the young but left after the male had sat from 09:21 to 10:36 h without feeding. However, both birds foraged along the road and she returned with a gray small caterpillar, sitting from 10:56 to 11:34 h, apparently less wary. On other days, the female brooded young more than did the male and, on 27 January, she alone brooded for 59 min, or 43% of observations (13:04–16:20), on the last three of her six visits.

When brooding, the adult in the nest remained very alert with head high and bill widely open due to heat; but when a person walked nearby it sat very low in the nest with only the tail visible. Since the nest was next to the road, each time a truck or jeep passed, raising a lot of dust or shaking the nest, the brooding adult crouched low. When about to leave the nest after a session, it became more alert, opened the tail feathers, stretched its neck forward or looked down below the nest and hopped out flying forward. A few times it

flew to the woods behind the nest, hopped in the undergrowth nearby, then flew to the woods across the road.

After feeding or arriving, the adult looked down inside or below the nest, sometimes poking in the nest material for ectoparasites for up to several minutes. When there was a fecal sac after feeding, the adult ate it and then looked carefully inside the nest, sometimes making a sudden movement forward as if it saw an ectoparasite; looking again carefully, lowering the body, it looked about again and hopped to sit inside nest.

Once, on 21 January, the male and female came to the nest edge with food together; the male fed at 13:21 h and pecked down in the nest. When the female arrived, he pecked and ate bits of food from her beak, giving the rest to the nestling, and sat on the nest at 13:24 h. The female stayed on the nest edge, and the male left at 13:27 h; she poked in the nest 10 s before brooding.

On the 21st, the male pounded a green prey item on a limb at 09:21 h but went to the nest without food; on his 11:38 to 12:36 h visit, he seemed to bring no food; he fed on four other visits, but tried to feed 16 times in 1 min and finally ate the food himself before brooding at 15:22 h. Besides the 08:55 h visit without feeding, the female came without food for a 12:30 to 12:45 h brooding visit; she fed on six more visits, including at 17:38 h when on for the night. At 17:46 h on the next day, she went on without feeding. On 24 January, several male and female visits were with food, but the female left from 18:11 to 18:17 h and returned without food, after feeding at 17:20 h and again at 17:30 h, when she went on the nest. On the afternoon of 27 January, the male fed the nestling only once (at 14:47 h), but the female fed six times.

Since the bird brooding on the nest usually left only when the other arrived, time on the nest depended on the partner's effort at food providing, except for such brief visits as

that of the female at 17:20 h. The male had spent 75, 58 and 84 min waiting and brooding on 21 January, but on 21 and 24 January, the female had to wait 96 (from 13:27 to 15:03 h) min and 51 (from 14:25 to 15:16 h) min for him to return.

The young was gone when the nest was examined on 29 January at 06:38 h. On 30 January, Willis found the pair of antshrikes foraging in dense growth 20 m east among the road from 16:12 to 16:26 h. They were somewhat separate, but still foraging together, as on January 21. He saw the female carry food across the road three times, and finally flushed the tailless young 0.5 m up in the understory; it fluttered to the ground and vanished. On 24 March, both of the pair were near the nest area with an understory bird flock, and a grown young female came out to look at Willis in the edge growth, flicking her tail slowly a bit before retreating with faint "fee" peeps to near the male, which was ending molt; the adult female was not far off. The gape angles of the young female were still a bit pale. The scrub understory was more visible because a few local farmers had cleared the understory 5 m back on both sides of the road on 11 March to "let their trucks pass".

## DISCUSSION

In the Rufous Gnateater, *Conopophaga lineata* (Conopophagidae), we earlier (Willis *et al.* 1983) recorded a case where a male stopped feeding a single young after brooding stopped and left the female to care for it alone. This was another case where one egg failed to hatch. While the male antshrike here may have been more nervous than the female (both called and flicked the tail 27 January after seeing the young handled, but later returned to the nest) it is more likely that he was not feeding regularly after brooding stopped.

Here, we suggest, based on these two nests, that a single nestling may not need as much food as two parents can bring, for even during brooding some visits of both sexes of the antshrike were without food. Having only one sex feeding, rather than two birds alternating, is more effective because one bird knows if the nestling is still hungry and can adjust visiting rates efficiently. Thus, partial male abandonment may reduce predation when there is only one of the normal two nestlings. In the gnateater case and probably this one, the male did not help with the fledgling and molted earlier than the female.

Snow (1963) suggested that female-only nest care may arise in fruit-eating birds because the male is not needed to feed young. We accept this idea for single-nestling pihas (Willis & Oniki 1998), even though the young itself receives little fruit, but suggest that the main reason is to lower nest predation or adult predation by reducing movement at the nest. We suspect that lower visibility to nest predators may favor partial male abandonment even in insectivorous antshrikes, and that an insectivorous pair could bring too much food for a single nestling, if our observations of partial or complete male abandonment are confirmed at other tropical nests with reduced nestling number.

Clearing the road edges was excessive here, including the entire nest bush, and would have prevented our observations of a second case of male abandoning if done in January. In 1997, other farmers forced reopening a road through Iguazu National Park in southern Brazil. Widening for 4 lanes on the São Paulo-Curitiba highway, which passes through forest zones, recently led to the state Instituto Florestal firing Willis doctoral student F. Olmos (he suggested a detour to avoid a site with rare *Amazona vinacea*, among other changes). Paving a road in the ornithologically important Broa Cerrado, near Rio Claro, engineers cleared long

stretches up to 20 m from the road in unfenced cerrado, but to less than 5 m in eucalyptus plantations nearby. Clearing 5 m back on either side of 3 km of reserve road, as in Nova Lombardia, results in loss of 30,000 m<sup>2</sup> or 3 ha of understory; 1–2 m each side would have been sufficient, as there are only a few cars and trucks per day.

As human populations increase, people want to widen roads, even through parks or reserves. It would be better to put roads in tunnels, or to cut roadside weeds only 1–2 m back, as in human-occupied zones in the entire region of Santa Teresa, to save human effort, science and habitats. The subject merits critical analysis.

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