

## NESTING OF THE RUFOUS-TAILED FLATBILL (TYRANNIDAE), IN FRENCH GUIANA

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Abstract.—In French Guiana, the nesting of the Rufous-tailed Flatbill (*Ramphotrigon ruficauda*) occurs during the main dry season from mid-July to the end of October. This rain forest inhabitant nests exclusively at the bottom of cavities in the end of broken trunks or large fallen branches near the ground. Three eggs are laid in a softly lined nest. Hole-nesting habits and choice of nest materials by *Ramphotrigon ruficauda* support the close phylogenetic relation of *Ramphotrigon* with the *Myiarchus* flycatchers.

### ANIDAMIENTO DE *RAMPHOTRIGON RUFICAUDA* (TYRANNIDAE) EN LA GUAYANA FRANCESA

Resumen.—En la Guayana Francesa el anidamiento de *Ramphotrigon ruficauda* ocurre desde mediados de julio a finales de octubre, lo que concuerda con la época de sequía. El ave se reproduce exclusivamente en el fondo de cavidades situadas en las extremidades de troncos quebrados o de anchas ramas que al caer quedan cerca del suelo. El nido en forma de copa es tapizado con material blando en donde se depositan tres huevos. El material que utilizan estas aves para construir el nido unido a su costumbre de anidar en cavidades, los tiende a relacionar filogenéticamente con el género *Myiarchus*.

Recently Parker (1984) described the nest of the Rufous-tailed Flatbill (*Ramphotrigon ruficauda*), but he relied on a single nest found in Peru in 1980. Because of the scarcity of reports on the biology of this genus and the systematic implications of their nest structure (Lanyon 1985), further observations of nesting in other parts of the Amazonian range of the species are of particular interest.

In 1986, three different nests of the Rufous-tailed Flatbill were discovered in undisturbed, mature, tropical rain forest in French Guiana. Two of them were found on a study site of The Piste de St Elie (5°15'N, 53°04'W), where small hills are separated by a number of humid flats rich in palms, in particular *Euterpe oleracea*. Annual rainfall is about 3450 mm, with a marked dry season from August to October. This area has been described in more detail by de Foresta et al. (1984).

On 15 Aug. 1986, at the beginning of the dry season, Plinio Sist found a nest with three eggs in a hollow-branch and observed a "rufous-tailed bird" flying away. Next morning I identified a pair of Rufous-tailed Flatbills attending the nest, which was at the bottom of a 20-cm-deep cavity in the end of a broken, rotting branch (3 m long and 12 cm in diameter) that had fallen from the canopy (30–50 m above), and lay at a 15° angle to the forest floor. The nest site was a lowland swamp forest dominated by palms. The entrance to the cavity was about 80 cm above ground and was protected by an inverted piece of bark 50 cm long. The nest was a well-finished cup furnished with a thick mattress of soft

vegetable matter. The primary component was silky, blonde fibers plucked from the fruit of a *Bombax* sp. To these were added some feathery appendages of the anemochore seeds of a species of *Odontadenia* (Apocynaceae), some black fibers, 5–6 cm long, torn in fur-like tufts from the border of the basal-sheath of the large leaves of the “Patawa” palm (*Jessenia bataua* sub. sp. *oligocarpa*), and finally a few pieces of sloughed snake skin. These soft materials were lying on a bed of green moss and the internal diameter of the cup was 6 cm. The clutch was composed of three eggs (dimensions in mm, length  $\times$  width: 21.2  $\times$  16.2; 20.9  $\times$  16.1; and 19.8  $\times$  15.7). They were off-white with numerous violet-brown streaks, spots, and irregular plates, more apparent at the larger end.

An observation blind was constructed close to the nest on 20 Aug. 1986. On 22 Aug. 1986, after the disturbance of my arrival at 1525, the pair of Rufous-tailed Flatbills returned to the trees nearest the nest site at 1605. Five minutes later, one of the birds flew into the nest, sat over the eggs and stayed there quietly until the next morning. The other adult remained close to the nest, singing lightly in response to another male some distance away. Such behavior suggests that the brooding bird was the female. The eggs hatched on 23 Aug. 1986. Next day in the early morning, there were no shell fragments in the nests. Both parents attended the nest and, although it was impossible to distinguish male from female in the field, appeared to feed the young about equally. On 24 Aug. 1986, when only one day old, the nestlings were fed 10 times in 3 h 50 min (0840 to 1230). The longest interval between each feeding was 23 min the shortest 4 min. Often the parents arrived at the nest together with small insects in their beaks. The first bird (the female?) to feed also sat on the nestlings for short periods, 4–10 min (mean = 6 min 30 s,  $n = 6$ ). The fecal sacs were swallowed directly by the parents.

As Parker (1984) described, conspicuous aerial sallies were noted as the flatbills descended to the nest by successive steps from branches at middle heights. During these approaches, one of the birds (the male?) often sang, in some cases in response to a neighboring bird. This species utters a long, sad whistle that is easily identified and allows the bird to be located even when it is hidden in the understory. This song is heard frequently from July to October, and only occasionally outside the main dry season during sunny days.

Unfortunately, the nest was discovered by a terrestrial predator (a marsupial?) and we found it destroyed and partially knocked down on 27 Aug. 1986. No more flatbills were observed or heard singing in the vicinity.

Knowing the cavity-nesting behavior of *Ramphotricon*, I remembered the unusual mist-netting of three Rufous-tailed Flatbills in similar forest understory on 13 Aug. 1986 about 1 km from the nest site just described. This banding site bordered a large tree-fall gap with numerous broken trunks and branches. When searching among them on 19 Aug. 1986, I found a nest of *Ramphotricon ruficauda*, only 5 m from the capture site. The nest was in a fallen trunk lying at a 20° angle to the ground on a



FIGURE 1. Nest site of *Ramphotrigon ruficauda* in French Guiana, a fallen trunk in a tree-fall gap.

pile of other broken branches (Fig. 1). Its jagged, hollow end was 1.20 m above ground, and the cavity entrance was 10 cm wide by 12 cm high. An inverted piece of wood 10 cm long gave good additional protection against rain. The nest was at the bottom of a 20-cm-deep cavity (Fig. 2). Again it was a downy cup 6 cm thick and 5 cm deep. The internal diameter was 5.5–6 cm. Most of the soft material was, again, feathery, puffy, iridescent pericarp from the seeds of a *Bombax* sp. tree. There were also some fibers from the same *Odontadenia* sp., and some wood fibers bed of green mosses (20 cm long and 10 cm wide). The clutch consisted



FIGURE 2. The nest of *Ramphotrigon ruficauda* at the bottom of a cavity in the end of the broken trunk seen in Figure 1.

of three eggs (dimensions in mm, length  $\times$  width = 20.65  $\times$  15.60; 20.90  $\times$  15.70; and 20.35  $\times$  15.45) similar in shape and color to those described above (Fig. 3). Unfortunately, the nest was abandoned shortly after the birds had been ringed. Exactly the same cavity was used by flatbills the following nesting season. A new nest was found on 17 Jul. 1987 and an egg laid on 20 Jul. 1987 was robbed by the next morning. Such fidelity to the nesting places may well reflect the scarcity of these preferred nest-sites.

On 17 Oct. 1986, I discovered yet another nest of *Ramphotrigon ruficauda* in the forest understory on a slope adjacent to a small stream at the Biological Station of the Montagne des Nouragues (4°05'N, 52°43'W). The nest was at the bottom of a 35-cm-deep cavity in an old moss-covered, fallen trunk (17 cm in diameter) which was lying on a rock. The cavity entrance, about 10 cm in diameter, was 1.60 m above ground with a piece of bark on the underside about 25 cm long and resembling a runway. The cup was lined with abundant soft fibers from the fruits of a *Bombax* sp., some palm fibers and a few small dried leaves, all set on a thick bed of green mosses. There were three young nestlings in the cavity, and both adults seemed to feed them, but there was no time to make further observations.

No other nests were found in French Guiana during the following wet months. These data suggest that the reproductive season of *Ramphotrigon ruficauda* is restricted to the dry season, from mid-July to the end of October.



FIGURE 3. A complete clutch of *Ramphotrigon ruficauda*.

My observations support Lanyon's (1985) conclusion that the *Ramphotrigon* flycatchers are close relatives of the *Myiarchus* flycatchers. Certainly, the restricted hole-nesting habits of the flatbill support a phylogenetic relation with *Myiarchus*. *Ramphotrigon ruficauda* does not use fur and feathers to line its nest, but the soft buff-colored vegetable fibers we always found (coming from the *Bombax* tree) provide similar functional and mechanical properties. On the other hand, Parker's description of "blonde mammal hairs" in the lining of a *Ramphotrigon fuscicauda* nest may be a misidentification and would require a confirmation. A piece of reptile skin in at least one nest of *Ramphotrigon ruficauda* further indicates a close relationship with *Myiarchus*, since this behavior is typical of that genus (Traylor and Fitzpatrick 1982).

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