

## NESTING BEHAVIOR OF THE LARGE-BILLED FLYCATCHER ON ISLA SANTA CRUZ

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Little published information exists for a number of the Galápagos land birds. However, birds are easily observed, and even visiting scientists primarily occupied with other studies have opportunities to contribute to the knowledge of Galápagos birds. As former Ornithologist of the Charles Darwin Research



The Large-billed Flycatcher (*Myiarchus magnirostris*).

Station David Duffy noted, information on many Galápagos birds will be best collected by "outside investigators" without major investment of resources by CDRS (Duffy 1981). During my sabbatical leave from California State University, Fresno, I undertook a short-term study of the Large-billed Flycatcher, or *Papa Mosca*, on Isla Santa Cruz in the spring of 1987. The Large-billed Flycatcher (*Myiarchus magnirostris*) is endemic to the Galápagos. Its habit of collecting nest material along roadsides, at clotheslines, and even from a person's head are well known, and it rapidly becomes familiar to visitors. The flycatcher is common in Puerto Ayora, unlike Darwin's Finches, which do not seem to tolerate the urban environment.

Most published information on the species is anecdotal. Brief field notes and collection information have been published by Rothschild and Hartert (1902), Ridgway (1907), and Gifford (1919). Swarth (1931) provided limited anatomical data based on specimens collected by the 1905-06 California Academy of Sciences expedition and commented on the taxonomic position of the species. The species was confirmed as a *Myiarchus* using skull morphology, recordings of

vocalizations, and field observations of behavior (Lanyon 1978, 1985). A separate monotypic genus (*Eribates*) was originally proposed for the species (Ridgway 1893).

During a 4-month stay at CDRS, I netted, color-

banded, and observed 23 flycatchers. Sex was determined on the basis of cloacal characteristics and by evidence of a brood patch. I located 18 nests and noted interaction between flycatchers as well as interactions with other birds.

The Large-billed Flycatcher, like other members of the genus, is a cavity-nesting species. Cavities in the native vegetation are not rare; nearly every mature *Opuntia* or *Jasminocereus* has a hollow pad or dead branch. Of the 18 nests located from February through March 1987, 10 were located in cactus (*Jasminocereus* 6, *Opuntia* 4) and 7 were in electric poles. One nest was located inside a house. Entrances to the nest cavities of nine of the natural nests ranged from 3 m to 5 m (average = 3.75 m) above the ground. Lanyon (1978 and pers. comm.) observed four similar nests with entrances from 1.5 m to 3 m high (*Jasminocereus* 2, *Opuntia* 2). Gifford (1919) reported the use of cavities in citrus as well as flycatchers using Darwin's Finch nests. Entrances were as high as 6 m.

Active nests in native vegetation on the CDRS grounds were all over 100 m apart. Nest loss was common. Only one nest was observed to have fledged

young on the CDRS grounds in the spring of 1987 (Nest #14 described below). Nests with entrances lacking protection were abandoned following heavy rains. Marked individuals from one abandoned nest were detected at a new nest within 85 m of the first nest. In at least one case, a switch in mate was detected after a nest was abandoned. A marked female was observed with a new mate at a nest 140 m from the initial nest location. The first nest (located on 31 January) was abandoned immediately after heavy rains. The subsequent nest was located on 11 March and was active through 7 April but did not fledge young.

The tolerance of urban conditions by flycatchers was unexpected. Nests were located in electric poles in Puerto Ayora. These concrete substitutes for cactus had a vertical cavity throughout their 9 m length caused by casting the pole around a cylindrical skeleton of reinforcement bar. Poles were erected with a buried base of approximately 1 m. The entrances, 8 m high at the top of the poles, were higher than any of the natural nests in this study. Nests in poles were

impossible to observe directly, and the vertical distance within the pole was not determined. The central chamber was sufficiently rough to allow the birds to wedge sticks and fibers across the cavity at any level. In *Jasminocereus*, the nest appeared to be located at constrictions, a joint or the base of the branch, below the entrance. Active nests were observed in poles adjacent to other poles with nests. The distance between poles was typically 30 m, much closer than distances between simultaneously active natural nests. Aggression between pairs seemed more frequent than at natural nests although I gathered no quantitative data to confirm this.

The most unusual nest observed was constructed in the hood of a raincoat that had been draped over the interior half-wall of a residence in Puerto Ayora. The flycatchers gained entrance to the house through open eaves and carried the construction of the nest to completion. Two eggs were laid before the nest was abandoned. The nest was constructed of plant fiber collected from the roadside and of chicken feathers collected in the adjacent yard. The extensive use of chicken feathers is an apparent substitute for the more typical mammalian hair. *Myiarchus* typically use hair in nest construction on the mainland (Lanyon 1978). This unusual nest was collected and is now cataloged as #V-1011 in the collections at the CDRS. Collection of plant fiber from the roadside was frequently observed. Small sticks, particularly of Salt Bush (*Cryptocarpus pyriformis*), were pulverized by vehicle traffic on the road between Puerto Ayora and the CDRS, and these macerated fragments were collected frequently by flycatchers as nest material.

Only one "natural" nest was directly observable. The nest was constructed in a tube of *Jasminocereus* vascular bundles (xylem) that had rotted away on one side, allowing me to view the nest. I enlarged the opening and covered it temporarily by tying on a patch section of similar-sized xylem from a downed cactus. By periodically examining the nest through the opening, I gathered information on the eggs and nestlings. This nest was constructed from fiber and small twigs and was lined with human hair. Flycatchers from this and other nest locations were seen collecting hair from the walkway of the dormitory at the Station. Feathers were also present, but not to the degree noted in the "coat" nest.



A Large-billed Flycatcher's nest in a concrete pole.



The five pinkish-white eggs in the accessible natural nest were measured and weighed on 28 February, 1 day after discovery. They averaged 1.85 by 1.50 cm (range = 1.88-1.83 cm by 1.52-1.50 cm). All weighed 2.0 g on a scale accurate to 0.5 g. Incubation had already commenced when the eggs were examined. Hatching occurred on 7 or 8 March. Two of three nestlings were weighed on 15 March. Weights were 6.0 g and 9.5 g. Two eggs did not hatch. Fledging occurred before 24 March while I was away from the Station. This nest was the only nest known to have fledged young during the months of January through April. All other sites appeared to have been unsuccessful.

Considering the problems generated in the past for the Galápagos avifauna by urbanization and introduced organisms, it is heartening to see flycatchers acclimatize to the urban setting. Perhaps flycatchers could be encouraged further by the construction of small caps for the electric poles. Hopefully, some native wildlife will remain and flourish in Puerto Ayora and other Galápagos villages rather than be replaced by introduced species so common elsewhere.

I hope that this brief report will spark further interest in the species, and will encourage other biologists (visitors and residents alike) to undertake long- and short-term studies, which will allow the monitoring of populations and provide a basis for minimizing

impacts of the human population on the avifauna of the Galápagos Islands. Attention to the small and common species is no less significant to the future of the Galápagos ecosystem than studies on more spectacular species.

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