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Nesting of Four Poorly-Known Bird Species on the Caribbean Slope of Costa Rica

Bruce E. Young[1,3,4] and James R. Zook[2]

ABSTRACT.—We describe the nests of four species of birds from the Caribbean slope of Costa Rica. A Great Potoo (*Nyctibius grandis*, nest previously unknown from Mesoamerica) nest was nothing more than a crevice in a high branch of a large tree, similar to those reported in South America. A nest of the Torrent Tyrannulet (*Serpophaga cinerea*) was found along a river at 35 m elevation, much lower than previous breeding reports for this normally montane species. Also, we confirm systematists' predictions that the Tawny-chested Flycatcher (*Aphanotriccus capitalis*), a species of near-threatened conservation status, is a secondary cavity nester. Finally, we report on the second known nest of the Sooty-faced Finch (*Lysurus crassirostris*) from montane forest. *Received 20 May 1998, accepted 7 Oct. 1998.*

RESUMEN.—Describimos los nidos de cuatro especies de aves de la vertiente del caribe en Costa Rica. Un nido de *Nyctibius grandis* (nido era anteriormente desconocido en Mesoamerica) era nada más que una grieta en una rama alta de un árbol grande, muy parecido a los nidos de la misma especie encontrados en América del Sur. Describimos un nido de *Serpophaga cinerea*, el cual fue encontrado en un río a los 35 msnm, mucho más bajo que los otros registros de esta especie del bosque montano. Describimos unas observaciones que indican que el *Aphanotriccus capitalis*, una especie ligeramente amenazada desde la punta de vista conservacionista, anida secondariamente en los huecos dentro de los arboles. Finalmente, presentamos la segunda descripción del nido de *Lysurus crassirostris*, el cual fue encontrado en un bosque montano.

Despite decades of intensive ornithological study, the nests and eggs of a number of Central American bird species are poorly known (Skutch 1954, 1960; Stiles and Skutch 1989). Especially enigmatic are species inhabiting the relatively inaccessible habitats of the humid Caribbean slope. The lack of reproductive information about these species hinders phylogenetic studies of the relationships among avian lineages, studies of intraspecific variation, general analyses of reproductive behavior, and the development of management practices for conserving avian biodiversity. Here we describe the first Mesoamerican nest of the Great Potoo (*Nyctibius grandis*), the first lowland nest of the Torrent Tyrannulet (*Serpophaga cinerea*), the first nest of the Tawny-chested Flycatcher (*Aphanotriccus capitalis*), and the second nest of the Sooty-faced Finch (*Lysurus crassirostris*).

STUDY AREA

Our observations were made in the 45,000 ha La Selva-Braulio Carrillo National Park reserve complex in Heredia Province, northeastern Costa Rica. The reserve complex, the largest protected elevational transect in Central America, extends from montane rain forest surrounding the Barva Volcano at 2,900 m down to lowland wet forest at the La Selva Biological Station at 35 m elevation on the Caribbean slope (Timm et al. 1989).

Observations were made in 1997 during routine bird monitoring activities at La Selva (10° 26′ N, 83° 59′ W) and at a remote campsite at 1070 m elevation in Braulio Carrillo National Park (10° 16′ N, 84° 5′ W). Annual rainfall at La Selva averages 3962 mm, with a relative dry period between January and March during most years (Sanford et al. 1994). Although precipitation data are scarce for higher elevations, annual rainfall may average over 5000 mm at the 1070-m site, where clouds frequently bathe the premontane rain forest in mist (Hartshorn and Peralta 1988). Average canopy height varies from 28–38 m at La Selva to 22–36 m at 1070 m (Lieberman et al. 1996).

NEST DESCRIPTIONS AND DISCUSSION

Nyctibius grandis.—The Great Potoo is one of three Central American species of the genus *Nyctibius*, the only genus in the exclusively Neotropical family Nyctibiidae. Although difficult to observe in daylight because it roosts motionless on canopy branches, the

[1] Organización para Estudios Tropicales, Apartado 676-2050, San Pedro de Montes de Oca, Costa Rica.

[2] Apartado 182-4200, Naranjo de Alajuela, Costa Rica.

[3] Current Address: Latin America and Caribbean Division, The Nature Conservancy, 4245 North Fairfax Dr., Arlington, Virginia 22203; E-mail: byoung@tnc.org

[4] Corresponding author.

FIG. 1. Adult and nestling Great Potoo (*Nyctibius grandis*) on the branch of a large *Hernandia didymantha* tree, La Selva Biological Station, Costa Rica, April 1997.

Great Potoo is readily detectable at night by its characteristic calls (Perry 1979, Slud 1979). It ranges from southern Mexico to southeastern Brazil and central Bolivia (AOU 1998, Howell and Webb 1995).

On 5 February, a visitor to the station (K. McGowan) found a single Great Potoo perched 34 m high on the branch of a 44 m tall *Hernandia didymantha* (Hernandiaceae) tree. The tree was located 500 m inside of old growth forest, at the edge of a large treefall gap on a steep hill. The bird was perched on an upward sloping section of an S-shaped branch approximately 20 cm in diameter. Thereafter on daily visits, we observed a bird in exactly the same position.

On 4 April, we observed for the first time a fully feathered chick on the branch in front of the adult. The chick was paler in coloration than the adult and about one quarter the size (Fig. 1). On subsequent days, the chick moved between a hidden position under the adult's breast feathers and the branch immediately in front of the adult. The adult remained almost motionless and never moved along the branch. We last saw the birds on 20 April. Despite extensive searches on all neighboring branches in the following days and months, neither adult nor young was seen again.

The motionless adult we saw was probably incubating an egg initially and then brooding a chick, although we could not determine the hatching date. Although collections of adults on eggs in Brazil and observations of *N. griseus* in Costa Rica indicate that males incubate during the day (Skutch 1970, Sick 1993), we could not identify the sex of the individual (or individuals) we saw because sexes are similar in outward appearance in Great Potoos (Land and Schultz 1963, Wetmore 1968). No nest was visible and, from our vantagepoint 30 m from the tree and level with the nest, only a slight crevice in the branch was visible. Although the location appeared precarious, reports from Brazil suggest that a notch in the nest branch can securely hold an egg (Sick 1993).

At a nest in Venezuela, a chick remained with its parent for a month, and then alone for almost another month before growing to a size greater than two-thirds that of the adult and dispersing (Vanderwerf 1988). This observation suggests that the chick we observed, which never attained half the size of the adult, did not survive. In addition, the wings did not appear sufficiently developed for sustained flight. Despite an extensive ground search, we found no evidence of its having fallen from the nest. The chick may have been taken by an arboreal predator such as a monkey (*Cebus capucinus, Ateles geoffroyi,* or *Alouatta palliata*), tayra (*Eira barbara*), or Collared Forest-Falcon (*Micrastur semitorquatus*), all common in the area. Even though the attempt was probably unsuccessful, its daily survivorship rate in the (presumed) egg and chick stage of 98.7% is substantially higher than the 93% rate measured for understory cup-nesting birds the same year in the same area (B. Young, unpubl. data).

Serpophaga cinerea.—The Torrent Tyrannulet is a conspicuous resident of highland rivers from Costa Rica to Venezuela and Bolivia (AOU 1998). Their cup-shaped nest attached to vegetation above rivers is well known (Skutch 1960). The elevational distribution of the species is variously described as 250–2500 m in different parts of its range (Meyer de Schauensee and Phelps 1978, Hilty and Brown 1986, Stiles and Skutch 1989, Ridgely and Gwynne 1993, Ridgely and Tudor 1994).

We first detected Torrent Tyrannulets on the

Sarapiquí River in 1994 in Chilamate, 5 km west of La Selva at an elevation of 40 m. In March 1997, we began seeing individuals along the same river where it passes through La Selva at 35 m elevation. These were the first observations of the species in La Selva in four decades of ornithological investigation (Levey and Stiles 1994). During the first week of April, a pair of tyrannulets began construction of a nest 0.5 m above the water level in shrub vegetation growing in the middle of a small island in the river, which is approximately 80 m wide and 1 m deep at this point. The nest was typical for the species in being cup shaped, supported by vertical branches, with feathers and moss woven into the structure (Skutch 1960). We monitored the nest every 2–5 days until 22 April when two eggs were found in the nest. During each visit, two birds were active near the nest, adding material and adjusting its structure. On our next visit, on 30 April, the nest had disappeared and the birds were not present.

Despite its conspicuousness on rivers, previous reports of the species occurring in the lowlands are of scattered observations of individuals as low as 100 m elevation (Hilty and Brown 1986, Ridgely and Gwynne 1993, Ridgely and Tudor 1994). The Torrent Tyrannulets we observed may have strayed from their higher elevation habitat because of a hydroelectric project in progress higher up the Sarapiquí River.

Aphanotriccus capitalis.—The Tawny-chested Flycatcher occurs in second growth and disturbed forest in Nicaragua and Costa Rica (AOU 1998). Nests of both this species and its congener are apparently undescribed (Lanyon and Lanyon 1986), and both have near threatened conservation status as a result of their small, fragmented ranges (Collar et al. 1994). We provide two observations to suggest the species nests in either cavities or crevices in trees.

On 23 April, a group of birdwatchers spotted a pair of Tawny-chested Flycatchers building a nest in the hollow of a dead branch stub in an otherwise live *Alchornea costaricense* (Euphorbiaceae) tree. On 30 April, we again observed two birds carrying fine nesting material, including moss, to the hollow for about 30 min. The birds apparently abandoned the attempt, as we never saw them there again. The rectangular hollow was oriented slightly upward, 8 cm deep and 25 × 8 cm wide, 1.5 m up in the 36 cm dbh tree. The tree was in a small, shady clearing 10 m away from a small (0.25 ha) patch of second growth forest.

A local naturalist guide, E. Castro, reported finding an active nest of this species in a hollow section of a 30 m diameter clump of Asian bamboo (*Guadua* sp.) in a patch of second growth forest 2 km north of La Selva. Castro reported seeing adults carrying food to the nest and later feeding a fledgling in the vicinity. The nest was 5.9 m above the ground, 13 cm in diameter (the diameter of the bamboo), and entered through a 5 cm high by 2 cm wide teardrop-shaped opening. The bottom of the opening was 3 cm above a node, leaving a shallow area for the nest. This finding confirms predictions that *Aphanotriccus* builds nests in crevices based on its phylogenetic closeness to *Lathrotriccus* and *Cnemotriccus,* two genera known to build nests in crevices (Lanyon 1986, Lanyon and Lanyon 1986). This crevice nesting habit may aid in the conservation of the species; *Guadua* bamboo is widely introduced in the region for use in supporting banana trees on plantations.

Lysurus crassirostris.—The Sooty-faced Finch occurs in dense vegetation in wet, mid-elevation forest in Costa Rica and Panama (AOU 1998). Its one congener, the Olive Finch (*L. castaneiceps*), occurs in humid montane forests along the coastal Andes mountains from Colombia to Peru (Ridgely and Tudor 1989).

On 7 May we discovered two adult Sooty-faced Finches entering and exiting a nest 2.1 m high attached to the side of a large *Sommera* sp. (Rubiaceae) tree (dbh = 46 cm) next to our camp at 1070 m, several kilometers inside undisturbed forest. The nest tree was located at the side of a little used trail at the edge of a stream crossing. The nest itself was woven into a thick epiphyte mat on a section of the trunk directly above the 3 m wide stream. The nest was a bulky, covered dome with a side entrance. The nest was almost entirely constructed of fresh moss with a lining of thin, black, stringy fungal rhizomorphs and strips of dried bamboo (*Chusquea* sp.) leaves. The trunk of the nest tree was covered with the same moss as was used to construct the

nest, causing the nest to be fairly inconspicuous.

On 11 May, after observing the adults spending long periods of time in the nest, we examined the eggs. The two eggs were whitish and speckled with lavender. The speckles were densest around the thick ends of the eggs. Assuming the adults were incubating and that the female had finished laying, the clutch size for this nest was two, typical for birds of humid tropical forests (Skutch 1985).

This nest was very similar to the one other nest described for the species, although the latter was built into the side of a fern stem and apparently was not associated with water (Barrantes 1994). These two nests were similar to the single nest of the congeneric Olive Finch described from Ecuador (Schulenberg and Gill 1987). All nests of the two species were bulky and dome-shaped, constructed primarily of mosses on the outside, cryptically situated in moss-dominated vegetation, and, in two cases, located over moving water. The nests of the two species differ in that the Olive Finch nest was built on the side of a rock instead of a tree and had a lining of dry leaves instead of rhizomorphs. The eggs differ substantially in that the eggs of the Olive Finch were immaculate white (Schulenberg and Gill 1987) compared with the spotted eggs found in both Sooty-faced Finch nests (Barrantes 1994). Interestingly, eggs in two collections attributed to the Olive Finch are spotted (Schulenberg and Gill 1987), suggesting that the Ecuadorian discovery of all white eggs may have been atypical for the group.

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LITERATURE CITED

AMERICAN ORNITHOLOGISTS' UNION. 1998. Check-list of North American birds, seventh ed. American Ornithologists' Union, Washington, D.C.

BARRANTES, G. 1994. First description of the nest and eggs of the Sooty-faced Finch. Wilson Bull. 106: 574.

COLLAR, N. J., M. J. CROSBY, AND A. J. STATTERSFIELD. 1994. Birds to watch 2: the world list of threatened birds. Smithsonian Press, Washington, D.C.

HARTSHORN, G. S. AND R. PERALTA. 1988. Preliminary description of primary forests along the La Selva-Volcan Barva altitudinal transect. Pp. 281–296 *in* Tropical rainforests: diversity and conservation (F. Alameda and C. M. Pringle, Eds.). California Academy of Sciences, San Francisco.

HILTY, S. L. AND W. L. BROWN. 1986. A guide to the birds of Colombia. Princeton Univ. Press, Princeton, New Jersey.

HOWELL, S. N. G. AND S. WEBB. 1995. The birds of Mexico and northern Central America. Oxford Univ. Press, New York.

LAND, H. C. AND W. L. SCHULTZ. 1963. A proposed subspecies of the Great Potoo, *Nyctibius grandis* (Gmelin). Auk 80:195–196.

LANYON, W. E. 1986. A phylogeny of the thirty-three genera in the *Empidonax* assemblage of tyrant flycatchers. Am. Mus. Novit. 2846:1–64.

LANYON, W. E. AND S. M. LANYON. 1986. Generic status of Euler's Flycatcher: a morphological and biochemical study. Auk 103:341–350.

LEVEY, D. J. AND F. G. STILES. 1994. Birds: ecology, behavior, and taxonomic affinities. Pp. 217–228 *in* La Selva: ecology and natural history of a Neotropical rain forest (L. A. McDade, K. S. Bawa, H. A. Hespenheide, and G. S. Hartshorn, Eds.). Univ. of Chicago Press, Chicago, Illinois.

LIEBERMAN, D., M. LIEBERMAN, R. PERALTA, AND G. S. HARTSHORN. 1996. Tropical forest structure and composition on a large-scale altitudinal gradient in Costa Rica. J. Trop. Ecol. 84:137–152.

MEYER DE SCHAUENSEE, R. AND W. H. PHELPS, JR. 1978. A guide to the birds of Venezuela. Princeton Univ. Press, Princeton, New Jersey.

PERRY, D. R. 1979. The Great Potoo in Costa Rica. Condor 81:320–321.

RIDGELY, R. S. AND J. A. GWYNNE, JR. 1993. Guia de las aves de Panama. ANCON, Panama City, Panama.

RIDGELY, R. S. AND G. TUDOR. 1989. The birds of South America, vol. 1. Univ. of Texas Press, Austin.

RIDGELY, R. S. AND G. TUDOR. 1994. The birds of South America, vol. 2. Univ. of Texas Press, Austin.

SANFORD, R. L., JR., P. PAABY, J. C. LUVALL, AND E. PHILLIPS. 1994. Climate, geomorphology, and aquatic systems. Pp. 19–33 *in* La Selva: ecology and natural history of a Neotropical rain forest (L. A. McDade, K. S. Bawa, H. A. Hespenheide, and G. S. Hartshorn, Eds.). Univ. of Chicago Press, Chicago, Illinois.

SCHULENBERG, T. S. AND F. B. GILL. 1987. First description of the nest of the Olive Finch, *Lysurus castaneiceps*. Condor 89:673–674.

SICK, H. 1993. Birds in Brazil. Princeton Univ. Press, Princeton, New Jersey.

SKUTCH, A. F. 1954. Life histories of Central American birds. Pac. Coast Avifauna 31:1–448.

SKUTCH, A. F. 1960. Life histories of Central American birds II. Pac. Coast Avifauna 34:1–593.

SKUTCH, A. F. 1970. Life history of the Common Potoo. Living Bird 9:265–280.

SKUTCH, A. F. 1985. Clutch size, nesting success, and predation on nests of Neotropical birds reviewed. Ornithol. Monogr. 36:575–594.

SLUD, P. 1979. Calls of the Great Potoo. Condor 81: 322.

STILES, F. G. AND A. F. SKUTCH. 1989. A guide to the birds of Costa Rica. Cornell Univ. Press, Ithaca, New York.

TIMM, R. M., D. E. WILSON, B. L. CLAUSON, R. K. LAVAL, AND C. S. VAUGHAN. 1989. Mammals of the La Selva-Braulio Carrillo Complex, Costa Rica. N. Am. Fauna 75:1–162.

VANDERWERF, E. A. 1988. Observations on the nesting of the Great Potoo (*Nyctibius grandis*) in central Venezuela. Condor 90:948–950.

WETMORE, A. 1968. The birds of the Republic of Panamá. Smithson. Misc. Collect. 150(2):1–605.

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Sexual Dimorphism in the Song of Sumichrast's Wren

Mónica Pérez-Villafaña,[1] Héctor Gómez de Silva G.,[2,4] and Atahualpa DeSucre-Medrano[3]

ABSTRACT.—We report on a song-like vocalization of female Sumichrast's Wren (*Hylorchilus sumichrasti*). The female song is a series of similar syllables, all at the same low pitch, that varies in length. Thus, it differs strongly from the rich and complex songs of male Sumichrast's Wrens and of most other wrens. *Received 27 Feb. 1998, accepted 25 Aug. 1998.*

There is increasing evidence that female song is not as rare in birds as previously thought (Langmore 1998). Among most wrens, females have songs that are similar to and sometimes combine with those of their mates in antiphonal duets (Skutch 1940, 1960). Until recently, the only reported case of strong sexual difference in wren songs was in the southern House Wren (*Troglodytes aedon*) among which the females give a simple twittering and/or a short trill, at least in Costa Rica and Panama, generally countersinging with the males (Chapman 1929; Skutch 1940, 1953). Distinct female songs have more recently been recorded in other *Troglodytes* wrens—one population of northern House Wren (Johnson and Kermott 1990) and Socorro Wren (*T. sissonii*; Howell and Webb 1995). During fieldwork on the life-history of Sumichrast's Wren (*Hylorchilus sumichrasti*) in Cerro de Oro, Oaxaca (18° 02′ N, 96° 15′ W; Pérez-Villafaña 1997), we recorded the previously unknown song of a female *H. sumichrasti*.

Sumichrast's Wren is sexually monomorphic in plumage. The birds we observed were not color-banded; however, during direct observation of the members of a single pair from March to July 1994, we realized that the previously unrecorded song was always made by the bird that did not emit the more complex song described by Howell and Webb (1995) and Gómez de Silva (1997). By analogy with other wrens that have strong sexual differences in song (in which the female's song is the simpler one), and from the birds' behaviors, we concluded that this previously unrecorded song was the song of the female. We subsequently have heard this "female song" at different points along a 738 m transect at Cerro de Oro, and throughout the range of Sumichrast's Wren: 2 km south of Amatlán (18° 50′

[1] Calle 1537-3, Col. San Juan de Aragón, Sección 6, C.P. 07918, México, D.F., Mexico.

[2] Instituto de Ecología, UNAM, Apartado Postal 70-275, Ciudad Univ., UNAM, C.P. 04510, México, D.F., Mexico.

[3] UNAM Campus Iztacala, Laboratorio de Zoología, Apartado Postal 314, Tlalnepantla, Estado de México, Código Postal 54500, Mexico.

[4] Corresponding author;
E-mail: hgomez@nosferatu.ecologia.unam.mx