

until the following day, when an adult was flushed from the nest and reappeared less than 5 min later. The nest, an open cup, was placed at the junction of two relatively small, moss-covered branches near the base of an understory tree, just over 2 m above the ground. Canopy height in the nest-site area was ca. 20 m. With the exception of the inner lining, the nest was comprised of fresh material. The bulk of the nest was composed of at least three fern species (one of the genus *Dryopteris*) and moss. The inner lining consisted of a thin, wiry vine with alternate, distichous leaves (most of the vine was devoid of leaves; photos in VIREO VO6/4/001-002). The diameter and depth of the cup's interior was 65 mm and 30 mm, respectively. The subelliptically shaped eggs (ANSP #180154; 26.5 × 18.2 mm; 25.5 × 18.8 mm) are white and nonglossy. Both are finely speckled in red or brownish-red at the smaller end, with the spotting becoming heavier and blotched, terminating in a dense ring at the larger end.

This discovery unfortunately cannot shed any light on the controversy surrounding the systematic limits of the genus *Buthraupis* (composed of two distinct groups; the larger-sized, temperate zone *Buthraupis*,

and the smaller, lower montane "*Bangsia*"; see Isler and Isler 1987), since the eggs are unknown for all other members of this complex, and the nest is described only for another *Bangsia*, the Blue-and-gold Tanager (*Buthraupis* [*Bangsia*] *arcaei*). The nest of *edwardsi* differs in two respects from that of the two described nests of *arcaei* (neither were collected nor examined in the hand). Both *arcaei* nests were stated to be enclosed with a moss dome and located somewhat higher (10–12 m) above the ground than the *edwardsi* nest (R. S. Ridgely, in litt., and B. Whitney, in litt., in Isler and Isler 1987).

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OBSERVATIONS ON THE NESTING OF THE GREAT POTOO (*NYCTIBIUS GRANDIS*) IN CENTRAL VENEZUELA¹

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Key words: Great Potoo; *Nyctibius grandis*; *Nyctibiidae*; nesting; fledging period; Venezuela.

The nesting and behavior of the Great Potoo (*Nyctibius grandis*) are largely unknown because of its cryptic appearance and nocturnal habits. The Great Potoo is most often observed during the day when it is chanced upon as it sits motionless on a regular daytime perch (Haverschmidt 1948, Perry 1979), relying on its mottled plumage and elongate shape for concealment (Wetmore 1968). It is only rarely observed at night, when it is usually first detected by its guttural calls (Slud 1979). The Great Potoo also habitually uses hunting perches at night, from which it flies out to catch prey (Haverschmidt 1948). The breeding biology of the Great Potoo is virtually unknown. To the best of my knowledge, the only published accounts of the nesting of this species are descriptions of nests, eggs, and nestlings (Haverschmidt 1948, 1968; Sick 1951; Wetmore 1968),

many of which were destroyed by collecting. The only detailed studies done on any species in the family were conducted on the Common Potoo (*N. griseus*) by Skutch (1970) and Alvarez del Toro (1971).

The following is a report on observations I made on the nesting of the Great Potoo in a gallery forest on the Guárico River in the llanos of Guárico state, Venezuela.

On 9 June 1987, I saw an adult Great Potoo perched approximately 12 m above the ground on a branch of a large tree. It was in exactly the same place as I had observed an almost fully grown juvenile Great Potoo from 12–22 August 1986. The branch was about 30 cm thick and sloped up at an angle of approximately 20°, but the part of the branch used by the bird was relatively flat and slightly wider than the rest of the branch. The bird habitually perched with the long axis of its body at a small angle with the branch. While perched, the bird's head faced the ascending side of the branch, and its long tail hung down slightly below the branch. The only movements the bird made were to occasionally turn its head from side to side. Otherwise it remained motionless, and I was able to examine it closely with binoculars and a telescope. When alarmed, it would stretch itself lengthwise and point its head

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vertically, thus enhancing its branch-mimicking crypticity. Its large eyes were usually open only a slit, but occasionally the bird would open them wider, revealing the dark iris. I saw it in the same position and in exactly the same site on the branch on twice-daily visits for the next 5 days.

On 15 June, I first observed a single chick beneath the adult potoo. No egg had been visible before, but other potoos are known to have completely concealed the egg during incubation (Haverschmidt 1948, Sick 1951, Skutch 1970). The chick was approximately 8 cm long and entirely covered with white down. It appeared as though it could not have been more than 1 or 2 days old. The chick was sometimes almost entirely concealed by the brooding adult, but usually at least the head was visible. At this stage, it perched facing the same direction as the adult, with its head projecting out from beneath the adult.

The chick appeared to grow rapidly. By 2 weeks of age some body feathers were appearing through the down on the back and wings, and the chick already exhibited bill-pointing behavior. At this stage, the chick sometimes perched slightly in front of and facing the adult, with its bill partially buried in the breast feathers of the adult.

After 5 weeks the nestling was quite large, approximately two-thirds the length of the adult, but more lightly built. It was a pale ash-gray all over, much lighter in color than the adult, and with less dark barring. Its bill appeared to be smaller than that of the adult, and had fewer feathers and rictal bristles around it. Its tail was also considerably shorter than that of the adult (see Fig. 1).

On 12 July, only the nestling was present on the branch. This was the first time I saw the nestling by itself. I searched the immediate surroundings but found no adult potoos. The nestling had also moved a distance of about 30 cm away from the nest up the supporting branch. Thereafter, I often saw the nestling in slightly different positions on the nest branch. It occasionally faced in the opposite direction, but never moved more than about 1 m from the nest.

I observed the nest at night for the first time on 14 July. Both the nestling and the adult were again present at the nest, suggesting that the nestling no longer required brooding during the day and that the adult only returned at night to feed the nestling. In the beam of a strong flashlight the eyes of both birds reflected a bright orange-red. However, the eyeshine of the nestling was noticeably lighter in color and less brilliant than that of the adult. The adult flew off into the forest and did not return after 30 min, by which time I had to leave.

I again saw the adult at the nest with the chick during the day on 17, 18, and 19 July, but not on daytime visits after 19 July. It is possible, however, that the adult may have continued to return at night to feed the nestling.

The nestling remained at the nest site by itself through 8 August. On the morning of 9 August the young potoo was gone and I did not see it again. I do not know if the young potoo made practice flights before this date and returned to the nest site to roost, or whether this date represents the first occasion that the young potoo left the nest. Skutch (1970) used failure to return to the



FIGURE 1. An adult and young Great Potoo at the nest.

nest tree as a criterion for determining fledging date, and observed a 51-day fledging period for the Common Potoo. Using this criterion, the fledging period for this Great Potoo was at least 55 days.

During the entire period I saw only one adult potoo at the nest at any time. I do not know if the same parent was always present, or if both parents attended the nest. There is no sexual dimorphism in potoos, and the sexes are indistinguishable in the field (Land and Schultz 1963, Wetmore 1968). I searched the surrounding forest thoroughly on several occasions, but never saw a second parent. Skutch (1970) found that both Common Potoo parents were active in incubation, brooding, and feeding, but that both adults were very rarely observed together at the nest, and never in the daytime.

The Common Potoo nests during the dry season in Costa Rica (Skutch 1970). At my study site in Venezuela, I observed active Great Potoo nests from June through August, 1986 and 1987. Two additional Great Potoo nests, one with one egg and one with a young chick, were found in this same area in April 1978 by William Mader (pers. comm.). In this area, June, July, and August are in the wet season, and April is a transitional month at the beginning of the wet season (Troth 1979). In other areas, Great Potoo nests have been found in November in Suriname (Haverschmidt 1948), in July in Brazil (Sick 1951), and a female with an almost completely developed egg in the oviduct was found in February in Guyana (Penard and Penard 1908).

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WHY DO RAVENS FEAR THEIR FOOD?¹

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Key words: Common Raven; *Corvus corax*; neophobia.

Numerous animals show shyness or neophobia at food and other things with which they are unfamiliar (Franchina and Gilley 1986, Jones 1986). Neophobia is predicted at food items which a specialist rarely uses, or which a generalist infrequently encounters.

Common Ravens, *Corvus corax*, are opportunistic feeders (Nelson 1934), which are often "bold and fearless" enough to harass mammalian carnivores and large predatory birds, and to hunt and successfully dispatch rabbits, young seals, and even caribou calves (Bent 1946). Sometimes the raven is also, relative to many other corvids, a carcass specialist (see Heinrich, in press for review). Both American Crows, *C. brachyrhynchos*, and Blue Jays, *Cyanocitta cristata*, feed at carcasses but they do not specialize on them. It might therefore be predicted that ravens would show little hesitation in utilizing carcasses, but that crows and Blue Jays would show considerable hesitation in doing so. Furthermore, a large powerful bird such as a raven should have less to fear than its smaller relatives and therefore have less reason to evolve neophobia at carcasses.

As part of another study involving the social foraging behavior of ravens in the winter in western Maine

(Heinrich 1988, in press) I provided a total of 135 meat piles and animal carcasses to ravens in the field, and the observations at these baits totalled 1,520 hr. I here report on apparent exaggerated bait shyness in ravens (relative to the jays and the crows) and speculate on the significance of the behavior.

Neither Blue Jays nor crows displayed interest in large (ungulate) intact carcasses. Ravens examined these carcasses, pecked them, removed the eyes, and then left them. No deer, moose, cattle, goat, or sheep carcasses attracted groups of ravens unless these baits had been cut open either by me or by coyotes. However, all three corvids fed on opened carcasses and slaughterhouse offal.

Ravens showed considerable hesitation before feeding. As indicated elsewhere in detail (Heinrich, in press), vagrant ravens did not approach some baits due to the presence of defending resident birds. However, ravens, who are notoriously difficult to capture at baits also appeared to fear the bait itself if they (or others) had not or were not already feeding there.

A raven approaching a new bait typically landed 5-10 m from it on the snow and then slowly walked toward it. It made frequent stops to examine it, unlike crows who scanned the surroundings instead. After coming to within 5 m of the carcass or other bait, the raven almost always made sudden violent vertical leaps assisted by one or more wing beats. It then approached a few more steps and again repeated the leaps. Finally, the gradually approaching raven delivered a peck at the bait and then invariably took flight, sometimes not returning for several hours. The same "jumping-jack"

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