

NOTES ON BIRDS OF COSTA RICA

MERCEDES S. FOSTER AND NED K. JOHNSON

These notes provide new or supplementary information on the distribution and ecology of 18 species of birds in Costa Rica. The data result from 13 months of field work by Foster, from 1966 through 1972, and 8 months of independent study in 1966 by Johnson. Common names, sequence of species, and evaluation of records are based on Slud (1964), the major recent work on Costa Rican birds. Specimens referred to are deposited in the Museum of Vertebrate Zoology, University of California, Berkeley, where identifications were made.

LIST OF SPECIES

Double-toothed Kite. (*Harpagus bidentatus fasciatus*).—This seldom seen species was taken at three widely separated localities: Alajuela Prov., 4.1 mi (= 6.5 km) NE Quesada, in scrubby second-growth adjacent to cultivated fields on 5 July 1969 (ad.; testis 12×4 mm, 186 g); Limón Prov., Estación Experimental Los Diamantes, 1 mi (= 1.6 km) E Guápiles, in second-growth woods on 26 July 1967 (ad., testis 3×1 mm, 165 g); Puntarenas Prov., Lower Sabana Esperanza, 3 mi (4.8 km) E Finca Helechales, in lower montane wet forest at the edge of a savanna on 10 September 1967 (ad., testis 5×2 mm, 172 g). One kite was captured when it attempted to catch a small bird or bat tangled in a mist net. The stomach was packed with remains of insects, primarily orthopterans.

Mirandolle's Forest Falcon. (*Micrastur mirandollei extimus*).—This rarely collected species was taken at the northern limits of the known geographic range in central Costa Rica: Alajuela Prov., 4 mi (6.4 km) NW Quesada, 1500 ft (= 450 m) on 15 May 1966. The bird (ad., ova 1 mm or less, 542 g, heavy molt, snake in stomach) was perched alone 2 m above the ground in a stand of 10–20 m second-growth riparian forest.

Barn Owl. (*Tyto alba guatemalae*).—This species probably occurs throughout the country (Slud, 1964). Foster found it extremely common in the tropical dry forested area around Estación Experimental Enrique Jiménez Nuñez (Finca Jiménez), 8.5 mi (= 13.6 km) SW Canas, Guanacaste Prov. Several to many individuals could be seen almost any evening, perched on fence posts or in trees along the dirt roads. Three specimens were collected between 7 July and 18 August 1967. The species also was observed at the Middle Sabana Esperanza, 5400 ft (= 1650 m), a locality which is considerably farther south than previous records. A female was taken there on 13 September 1967.

Striped Owl. (*Rhinoptynx clamator clamator*).—This species is proving to be rather common locally in Costa Rica. A specimen was taken by R. McDiarmid on 9 August 1967, 3.5 mi (= 5.6 km) SW Rincón, Puntarenas Prov., somewhat farther south than previously reported localities. The bird (ova to 4 mm) was perched on a power pole adjacent to an airstrip in tropical wet forest.

As reported by Orians and Paulson (1969) the species is relatively common at Finca Jiménez; there Foster took a male (testis 4 mm) and a female (ova not enlarged; very fat; grasshopper and small bird in stomach) on 11 July 1967. The female was collected from a daytime roost (07:00) in low deciduous woodland, about 2.5 m up in a small tree.

Unspotted Saw-whet Owl. (*Aegolius ridgwayi ridgwayi*).—This owl is rare throughout its range. A male (testis 8×4 mm, 84.1 g, bits of hair in stomach) was taken in large trees on the edge of a deep canyon in steeply sloping pastureland, on the south side of Volcán Irazú, 2928 m, Cartago Prov., on 16 April 1966. The bird called steadily soon after dusk on a clear and quiet evening; it was followed for approximately 700 m as it moved upslope. The rhythmic whistles seemed lower in pitch than calls of the Northern Saw-whet Owl (*A. acadicus*) and lacked the obvious oscillations in pitch and intensity that characterize that species. Marshall (1943:25) also noted the even pitch in calls of *A. ridgwayi* from El Salvador.

Common Potoo. (*Nyctibius griseus costaricensis*).—Although this species probably occurs countrywide, it has been reported from relatively few localities. According to residents of the area, it occurs regularly in the vicinity of Finca Helechales where two were collected and a third observed at approximately 03:30 on 18 September 1967. One was perched on a 2 m fence post; the others were together on adjacent 45 to 60 cm stumps, all along a wide path through thick second growth. They perched quietly, occasionally making short flycatching sallies. The species has a bright red eyeshine in a flashlight beam.

A fourth individual, first seen by Susan Smith on 10 July 1969 at Finca Jiménez, was perched approximately 4 m above the ground at a bend in a 20 cm diameter limb of the leguminous tree, *Dalbergia retusa*. The potoo was situated at the side of the limb, with which it made a 45° angle, so that the tail was visible below the limb. The bill was held vertically and the eyes were closed. Periodic checks indicated that a potoo probably occupied the same position throughout the day on 11–14 and 18–20 July. Several attempts to eyeshine the bird at night were unsuccessful.

Because the tree was located in a relatively inaccessible tangle of thick brushy second growth, the potoo usually was observed with binoculars from a distance of approximately 25 m. On 21 July, observation at close range revealed the presence of a young bird on the bare limb, nearly covered by the breast feathers of the adult. In previously reported nestings (Goeldi, 1896; Muir and Butler, 1925), eggs were located in depressions on top of stumps where the possibility of their rolling off was slight. In this instance, there was no depression (although the bark was rough), and the limb grew at a 45° angle with the horizontal. It is difficult to see how an egg could have stayed on the limb, unless an adult were present at all times to hold it in place. The nestling clung to the limb with extreme tenacity, behavior also noted by Muir and Butler (1925).

We collected the parent and the young potoo; the former was a male (skull ossified, testis 11×8 mm, 242 g, no fat). This indicates that this sex helps in the care of the young as well as in incubation. The nestling (female, skull not ossified, ovary undeveloped, 106 g) was undergoing the postnatal molt. The juvenal plumage had completely replaced nestling down over most of the body. The primaries and rectrices had grown to approximately 15% of their adult length.

Stomach contents of both the adult and nestling were analyzed by Daniel H. Janzen. Adult beetles were the most abundant item in the stomach of the adult (Elateridae, 1: 35 mm long \times 10 mm wide; Scarabaeidae, 6: 15×8 ; Curculionidae, 1: 30×7 ; Tetti-goniidae, 1: 40×6). The young bird, which was very fat, had the stomach crammed with insect material, even though the bird was collected late in the morning (11:00). Its stomach contained adult and larval beetles (Dermestidae, 1 larva: 5 mm; Passalidae, 1: 40×10 ; Scarabaeidae, 4: 15×8 , 1: 20×10), plus approximately 15 large (10×6) chunks of hard, rotten wood. The adult insects represent nocturnally flying species and,

with the exception of the passalid, probably were picked from the air. Though passalids do fly, the presence of this one with the dermestid larva and wood suggests the material was scooped from a rotten tree trunk or limb. As there was no rotted wood in the vicinity of the young bird, we assume the adult collected and regurgitated this material. Bits of wood also have been reported in the stomach contents of *Chordeiles minor* (Rust, 1947). Interestingly, no remnants of moths were found though their scales usually persist in the gut after other parts are gone (D. H. Janzen, pers. comm.).

Pauraque. (*Nyctidromus albicollis intercedens*).—This species, common throughout Costa Rica, exhibits seasonal variation in abundance, or at least in conspicuousness, at certain localities. Pauraques were observed commonly around Finca Jiménez between 5 and 16 February. Numerous individuals called in the early evening and at dawn. The species was equally obvious in the same area between 11 and 19 August. As many as 40 individuals could be seen foraging along a 4 mi (= 6.4 km) stretch of dirt road passing through pasture and occupied in part by sleeping cattle. Usually the pauraques occurred in twos or threes. They were observed at various times between 19:00 and 22:00 but appeared most abundant between 20:00 and 21:00. During a visit to Los Diamantes Farm from 13–17 March, pauraques also were seen commonly at night along all dirt roads. A nest with eggs was located in a small clearing in open second growth vegetation on 15 March.

During visits at other times of the year to Jiménez (7–21 July; 1–2 August) and Diamantes (23–29 July), the species was rarely heard or seen. On several occasions none was detected along the stretch of road described above. The few observed were found in river bottom forest. This could indicate a seasonal shift in feeding time or locality, or result from increased secrecy during the molt period. Of five specimens collected between mid-July and mid-August, 1967, four were molting.

Cassin's Aracari. (*Selenidera spectabilis*).—Slud (1964) considered this species to be the only uncommon Costa Rican toucan. We have records of individuals observed on numerous occasions during the month of August, in and on the edge of forest and in isolated trees in clearings, 1 to 3 mi (= 1.6 to 4.8 km) south and southeast of Cariblanco, Alajuela Prov. A male (testis 10×5) and a female (largest ovum 1 mm) were collected on 5 and 15 August 1969, respectively.

Spotted Antbird. (*Hylophylax naevioides capnitis*).—Two adults were collected at Finca Jiménez on 17 May 1972 (female, largest ovum 0.5 mm) and 7 December 1972 (male, testis 2×1). This locality is only about 22 mi (= 35 km) from the northwestern divide where this antbird is reported to be abundant (Slud, 1964). However, Finca Jiménez is in an area of extremely dry tropical forest, strikingly different from the humid forests of the continental divide.

Long-tailed Tyrant. (*Colonia colonus leuconotus*).—The following records help to define the breeding season of this flycatcher in Costa Rica. This species was both abundant and conspicuous at Los Diamantes Farm from 13–17 March 1966, in low second-growth trees around cultivated clearings and in forest edge. Birds displayed commonly. Individuals would leave perches at the tips of adjacent, 3 to 4 m high branches, approach and fly vertically around each other, and return to their original places. A female collected on 16 March had enlarged yellow-orange ova up to 3 mm in diameter. Interestingly, Arbib and Loetscher (1935) found this species breeding during July and August in Panama, and Skutch (1960) located a nest in Ecuador on 30 August. During a subsequent visit to Los Diamantes and vicinity, from 23–29 July 1967, the species was rarely seen, although it was not uncommon in the forests across the Rio Toro Amarillo Bridge,

approximately 4 mi (= 6.4 km) west of Guápiles. This might reflect a seasonal shift in habitat use. Three birds collected at this time were not in breeding condition.

Great Kiskadee. (*Pitangus sulphuratus guatemalensis*).—The breeding season of this species apparently is greatly protracted. At Finca Jiménez, individuals were observed building nests or carrying nest material on 11 February, on 19 July (in three separate areas), and on 20 July. On 14 March at Los Diamantes, a pair occupied a nest about 15 m up in an isolated tree in scrubby second growth. A bird collected there on 25 July 1967 was also in breeding condition (testis 11×4 mm).

Olive-sided Flycatcher. (*Nuttallornis borealis*).—An early fall migrant (skull ossified, testis 4 mm, 33.9 g, light fat) was collected 25 August 1967 at Villa Mills, Puntarenas Prov.

Yellow-bellied Tyrannulet. (*Ornithion semiflavum*).—Although Slud (1964) reports a sight record of this tiny flycatcher from the Rio Frío region of northern Costa Rica, the following specimen is the first from the Caribbean slope of the country, where the very similar *O. brunneicapillum* also breeds: Alajuela Prov., 4 mi (= 6.4 km) NW Quesada, 1400 ft (= 427 m) in canopy of 25 m high riparian forest, 3 April 1966 (testis 6×4 mm, skull windows, 7.0 g). Importantly, this specimen of *O. semiflavum*, although worn, is perfectly typical of other examples of the species, from the Pacific slope of Costa Rica and farther north in Middle America. It shows no sign of intergradation with *O. brunneicapillum*, suggesting probable sympatry of the gray-capped and brown-capped forms in Caribbean Costa Rica—although specimens of both have not yet been taken at the same locality. Several recent authors (e.g., Slud, 1964; Wetmore, 1972) have assumed specific status of the two forms, presumably based on differences in coloration without known intergradation.

Olive-striped Flycatcher. (*Mionectes olivaceous olivaceous*).—This species is known from the vicinity of the Aguacate Mountains and the Cordillera de Guanacaste (Slud, 1964), but has not been reported from the Cordillera de Tilarán. On 25–26 February 1966 four individuals were netted and released at Monteverde, Puntarenas Province, and on 27 June 1967 a male was collected at El Silencio, Guanacaste Prov.

Black-and-yellow Tanager. (*Chrysothlypis chrysomelas chrysomelas*).—Two breeding adults (♂, testis 6×4 mm; ♀, ovum 5 mm) of this uncommon tanager (Slud, 1964) were taken along a road through primary forest, approximately 1.5 mi south of Cariblanco, on 2 and 6 August 1967. These birds and individuals observed on other occasions were present in mixed species flocks which included *Chlorophanes spiza*, *Cyanerpes lucidis*, *Tangara florida*, *Chlorothraupis carmioli*, and *Cacicus uropygialis*.

Dotted Bush-Tanager. (*Chlorospingus punctulatus*).—A specimen of this species (catalog number 27865) was found in a batch of bush-tanagers borrowed for study by Johnson from the Field Museum of Natural History. It bears the notation "Costa Rica" and, incorrectly, "*Chlorospingus zeledoni*." Emmet R. Blake and Alexander Wetmore independently identified the specimen as the rare *C. punctulatus*, previously known only from central western Panama. According to the specimen tag, the collector was H. Whitely. As there is no positive record that H. Whitely ever collected in Costa Rica (E. R. Blake and A. Wetmore, in litt.) and because the species has not been noted by other workers in that country, the locality ascription is suspect. For these reasons *C. punctulatus* should be listed as hypothetical for Costa Rica.

Slaty Finch. (*Spodiornis rusticus barrilesensis*).—This species is rare throughout its range. Johnson took a male (testis 1 mm, rear skull windows, 15.4 g, no molt or fat) in adult plumage on 30 June 1966 on the south slope of Volcán Poás, 6500 ft (= 2000

m), 2.5 mi (= 4 km) W Varablanca, Alajuela Prov. The bird was with another male and a brownish individual (presumably a young male or female), feeding on the ground at the edge of a pasture near streamside woodland. They perched several times in low bushy growth scattered along the pasture border. Orians and Paulson (1969) and Stiles and Hespeneide (1972) have recently reported this species from the area of Volcán Barba in the Central Highlands.

Peg-billed Finch. (*Acanthidops bairdi*).—This odd finch, previously encountered very rarely and not found by Slud (1964), occurred commonly on Volcán Irazú and Volcán Poás between March and August, 1966. On numerous occasions Johnson recorded 10 to 20 individuals per day. Series of skins, skeletons, and specimens preserved in fluid were collected. Orians and Paulson (1969) and Stiles and Hespeneide (1972) also have reported recent records of the species from the highlands of Costa Rica. The possible connection between the dramatic increase in abundance of this species in the last decade and the eruption of Volcán Irazú in March of 1963 will be discussed elsewhere (N. K. Johnson, ms).

ACKNOWLEDGMENTS

Stephen B. Preston and Jorge R. Campabadal of the Organization of Tropical Studies assisted us greatly in Costa Rica. Ing. Eladio Carmona B., Ing. Mauro Molina U. and Carlos Gutiérrez B. of the Costa Rican Ministry of Agriculture and Livestock arranged for Foster's use of the facilities at Los Diamantes and Finca Jiménez. Walter and Elsie Fiala graciously hosted the first author at Finca Helechales, Doña Clara de Jiménez at Finca El Silencio, and Ralph and Mary Miller at Tesalia. Carolyn Cavalier Boyd, Roy McDiarmid, and Susan Smith have allowed us to report on certain of their field observations or specimens collected. D. H. Janzen analyzed the stomach contents of the potoos, and R. F. Daubenmire provided plant identifications. E. R. Blake and A. Wetmore identified and commented upon the specimen of *Chlorospingus punctulatus*.

The financial support of the National Science Foundation through Predoctoral and Organization of Tropical Studies Course Participation Fellowships and of the American Museum of Natural History for a Frank M. Chapman Grant to Foster is gratefully acknowledged. Johnson's work in Costa Rica was financed in part by National Science Foundation Grant GB-3824. He was assisted in the field on numerous occasions by Alexander K. Johnson and Nathan K. Johnson.

LITERATURE CITED

- ARBIB, R. S., JR., AND F. W. LOETSCHER, JR. 1935. Some notes from the Panama Canal Zone—summer 1934. *Auk*, 52:325-328.
- GOELDI, E. A. 1896. On the nesting of *Nyctibius jamaicensis* and *Sclerurus umbretta*. *Ibis*, 38:299-309.
- MARSHALL, J. T., JR. 1943. Additional information concerning the birds of El Salvador. *Condor*, 45:21-33.
- MUIR, A., AND A. L. BUTLER. 1925. The nesting of *Nyctibius griseus* (Gmel.) in Trinidad. *Ibis*, 67:654-659.
- ORIAN, G. H., AND D. R. PAULSON. 1969. Notes on Costa Rican birds. *Condor*, 71:426-431.
- RUST, H. J. 1947. Migration and nesting of nighthawks in Northern Idaho. *Condor*, 49:177-188.

- SKUTCH, A. F. 1960. Life histories of Central American birds. II. Pacific Coast Avifauna, 34.
- SLUD, P. 1964. The birds of Costa Rica. Distribution and ecology. Bull. Amer. Mus. Nat. Hist., 128.
- STILES, F. G., AND H. HESPENHEIDE. 1972. Observations on two rare Costa Rican Finches. Condor, 74:99-101.
- WETMORE, A. 1972. The birds of the Republic of Panamá. Smithsonian Misc. Coll., Vol. 150, part 3.

DEPARTMENT OF BIOLOGY, UNIVERSITY OF SOUTH FLORIDA, TAMPA, FLORIDA 33620, AND MUSEUM OF VERTEBRATE ZOOLOGY AND DEPARTMENT OF ZOOLOGY, UNIVERSITY OF CALIFORNIA, BERKELEY, CALIFORNIA 94720. ACCEPTED 14 NOVEMBER 1973.

NEW LIFE MEMBER



Allan Reed Keith is now a Life Member of The Wilson Ornithological Society. He attended Amherst College, Harvard and Yale Universities, earning a BA at the first in 1959 and an MBA at the second in 1962. He works for a company of investment bankers, where he is vice president. He is a member of many nature-connected organizations, and his interests also extend to education. In ornithology his interests focus on distribution and systematics. He has published several scientific notes and papers, based on observations of birds or mammals in such diverse places as Tierra del Fuego, Africa, Fiji, and Samoa. He lives in New Vernon, New Jersey, and is married and the father of two children.