

day they both began flapping their wings on being handled. On the 23rd day the larger nestling threw itself on its back with its legs raised and claws extended, exactly as the previously described adult behavior.

Most of the nestling owls' day was spent sleeping pressed tightly together. At 3 weeks they began sleeping facing the open entrance of the nest box. It was then that I first saw, on looking into the box, what appeared to be 2 pairs of large eyes staring at me, when, in fact, the nestlings had their eyes closed in sleep. Careful examination revealed that the eyelid skin was light pearl gray (color 81) with a tuft of sparse white feathers near the outer corner, and that centrally on the lid there was a prominent area of short black feathers. The effect of this pattern was to make the eyelids, when closed and viewed in the weak light of the nest, excellent mimic eyes (Fig. 2). This appears to be an adaptation for startling a predator who might look into the nest hole in daylight, after the nestlings are no longer brooded by an adult owl.

Summary.—This paper presents observations of the nesting of the Tropical Screech Owl (*Otus choliba*) and discusses development of the nestlings, their food, defense behavior of the adult and the nestlings, as well as a description of a probable warning color pattern development of eyelid feathers as a defense strategy.

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Three more new specimen records for Guatemala.—During continuing studies of the avifauna of the Pacific lowlands of Guatemala near La Avellana, Santa Rosa Department (Dickerman, Wilson Bull. 87:412-413, 1975), I collected 3 more species of birds not previously taken in the country. During April and May 1975 Richard R. Viet and in April 1976 Alexander Brash and Thomas Will participated in the field work. Collecting was done under permit from the Departamento de Vida Silvestre, Instituto Nacional Forestal of Guatemala and specimens are deposited at the American Museum of Natural History.

Calidris bairdii, Baird's Sandpiper.—Although Baird's Sandpiper is a regular migrant at least in interior areas of Mexico, and winters in South America, there are few specimen records from Central America, and to date none from Guatemala. On 21 April 1976 Thomas Will identified 2 Baird's Sandpipers and I collected one, on mud flats between the villages of La Avellana and Monterrico, Santa Rosa Department. The birds were found in the afternoon following a major rainstorm the night of 20-21 April that continued to mid-morning of the 21st. The specimen collected, an immature female, weighed 33.3 g and was moderately fat.

Calidris alpina, Dunlin.—An adult male Dunlin, well advanced in prealternate molt, was taken about 21:30, 6 April 1976 from nets set on the same mud flats mentioned above. This is apparently the southernmost specimen record for the species in the New World. Its wing chord measures 115 and the culmen 36.5 mm; the specimen was identified by John Farrand, Jr. as *E. a. pacifica* based both on measurements and on the deep coloration of the fresh alternate plumage.

Sterna albifrons, Least Tern.—Although the AOU Check-list (1957) records *S. a. browni*, the race that nests along the coast of California and Baja California, as probably ranging south to Guatemala in winter, Land (Birds of Guatemala, Livingston Publ. Co., Wynnewood, Pa., 1972:112) knew of no specimens of the species from Guatemala. Accordingly

he placed the species name in brackets indicating a hypothetical status. He mentioned August and September sight records for both coasts. We have seen 1 to 3 Least Terns on the following dates at the mouth of the Rio Los Esclavos, Santa Rosa Department: 2 and 4 May 1974, 24 April 1975 and 29 April 1976. An adult collected 24 April 1974 was identified by John Farrand, Jr. as *S. a. antillarum*, the race of central and eastern United States and of the Caribbean region.—ROBERT W. DICKERMAN, *Dept. Microbiology, Cornell Univ. Medical College, 1300 York Avenue, New York 10021. Accepted 20 Oct. 1976.*

Feeding behavior of two hummingbirds in a Costa Rican montane forest.—

Between the end of April and mid-June 1974, I made observations on hummingbirds feeding in primary forest between 1480 and 1680 m at Monteverde on the Pacific slope of the Cordillera de Tilaran of Costa Rica. At this level the forest is transitional between the Lower Montane Rain Forest and the Lower Montane Wet Forest (Holdridge, Life Zone Ecology, Tropical Science Center, San Jose, Costa Rica, 1967). Within the shade of this forest the 2 most abundant resident hummingbirds were the Purple-throated Mountain Gem (*Lampornis calolaema*) and the Guy's Hermit (*Phaethornis guy*). At Monteverde these 2 species largely overlap in habitat and altitudinal range, as they do elsewhere in their geographical range (Slud, Bull. Am. Mus. Nat. Hist. 128, 1964), but I observed no overlap in the flowers visited for nectar (Table 1). These hummingbirds also differ in size and proportion; the mean measurements, sexes combined, of Guy's Hermit are: weight 5.8 g (N = 3), wing 61 mm (N = 20), culmen 42.5 mm (N = 20) (Wetmore, The Birds of the Republic of Panama, Part 2, Smiths. Misc. Coll. 150, 1968). Those for the Mountain Gem, treating the sexes separately, are: female—weight 4.2 g (N = 2), wing 56 mm (N = 6), culmen 22.1 mm (N = 6); male—weight 5.6 g (N = 7), wing 63 mm (N = 7), culmen 21.4 mm (N = 6) (Feinsinger, Organization of a Tropical Guild of Nectarivorous Birds, Ph.D. thesis, Cornell Univ., Ithaca, N.Y., 1974 for weights quoted). In addition the Guy's Hermit has the typical curved bill of the hermits and the Mountain Gem a straight bill.

Except for 1 tree (*Quararibea* sp.) the feeding records were from vines, shrubs, herbaceous plants, or epiphytes (Table 1). With the exception of the epiphytes, the other plants appeared to be shade tolerant species growing and flowering under unbroken canopy or in the partial shade of mountain paths or very steep slopes. The herbaceous plants flowered at heights of 30–90 cm and the shrubs and vines at 0.6–6 m. Of the 2 epiphytes, *Columnnea magnifica* grew sparsely on trees just below canopy level and continued to grow and flower in partial shade on fallen trees; whereas the epiphytic heath (Thibaudiae) grew in large clumps locally dominating its host tree and enjoying full sunlight, but was not seen flowering on fallen trees in partial or heavy shade.

Guy's Hermits were feeding at 3 levels, between 30 and 90 cm when feeding at herbaceous plants, between 1.5 and 2 m when feeding at vines, and just below the canopy at 12–18 m when feeding at the epiphyte. The Mountain Gem fed at shrubs between 60 cm and 6 m, at the epiphyte between 6 and 10.5 m, and at the *Quararibea* tree between 12 and 15 m.

I defined a feeding record as a bout of feeding by an individual hummingbird at 1 plant species. The actual number of flowers visited in a feeding bout varied greatly depending on flower size; thus a record of Guy's Hermit feeding on *Drymonia conchocalyx* would consist of probes into 2 or 3 flowers, while a record of a Mountain Gem at *Palicourea* typically consisted of probes into 20 or more flowers. To attempt to adjust the data to number of flowers visited would distort the results because some nectar