

- DWYER, T. J., S. R. DERRICKSON, & D. S. GILMER. 1973. Migrational homing by a pair of Mallards. *Auk* 90: 687.
- HOCHBAUM, H. A. 1944. The canvasback on a prairie marsh. Washington, D. C., Amer. Wildl. Inst.
- LINCOLN, F. C. 1934. The operation of homing instinct. *Bird-Banding* 5: 149-155.
- McKINNEY, F. 1965. Spacing and chasing in breeding ducks. *Wildfowl Trust Ann. Rept.* 16: 92-106.
- POSTON, H. J. 1974. Home range and breeding biology of the Shoveler. *Can. Wildl. Serv. Rept. Ser.* 25.
- SOWLS, L. K. 1955. Prairie ducks. Harrisburg, Pennsylvania, Stackpole Co., and Washington, D. C., Wildl. Mgmt. Inst.
- TRAUGER, D. L. 1971. Population ecology of Lesser Scaup (*Aythya affinis*) in subarctic taiga. Unpublished Ph.D. dissertation, Ames, Iowa State Univ.

Received 23 February 1977, accepted 10 July 1978.

Greater Ani (*Crotophaga major*) in Mexico

STORRS L. OLSON

National Museum of Natural History, Smithsonian Institution, Washington, D. C. 20560 USA

The Greater Ani, *Crotophaga major* (Cuculidae), is the largest species of *Crotophaga* and is further distinguished by the characteristic "broken nose" shape of the bill and the light-colored iris. The species inhabits river swamps and marshes throughout the lowlands of South America to northern Argentina but has hitherto been known from Central America only in eastern and central Panama (Wetmore 1968, Smithsonian Misc. Coll. 150, pt. 2). Therefore, in examining the skin collection of Nelson D. Hoy, of Media, Pennsylvania, I was surprised to find two specimens of *C. major* collected by Mr. Hoy in Tamaulipas, Mexico. Hoy clearly remembered having collected the birds, which he had identified as Groove-billed Ani (*Crotophaga sulcirostris*), the only species of *Crotophaga* known to occur on the mainland of Mexico.

The specimens, which were lent to me for further examination, are a male and female taken on 23 and 21 April 1960, respectively, along the Río Tamesí, about 56 km SW of Ciudad Mante, Tamaulipas, Mexico. On comparing them with a series from South America and Panama, I could detect no differences in coloration. Sex for sex, however, both are larger (except for bill length in the female) than any of the specimens from farther south (Table 1). This suggests a resident population of somewhat larger birds, rather than vagrants. If this is the case, and no other undetected populations exist in Central America, the Mexican population would be separated by a distance of over 1,500 airline miles (2,400 km) from the nearest population to the south.

Such a distribution would seem to indicate that the range of *Crotophaga major* was more extensive in the past and that the Mexican population is a relict one. Apparent examples of similar range constriction are known for the Gray-breasted Crane, *Laterallus exilis* (Rallidae), and caracaras of the genus *Milvago* (Falconidae). *L. exilis* now occurs in South America, with a handful of specimens having been taken in Central America, but is also known from the Pleistocene of Florida (Olson 1974, *Condor* 76: 169-175). *Milvago* now occurs mainly in South America, ranging north to Costa Rica, but is likewise known from the Pleistocene of Florida (Olson 1978, *Acad. Nat. Sci. Philadelphia Spec. Publ. No. 13*: 99-112) and has an extinct representative in the Quaternary of Hispaniola (Olson 1976, *Proc. Biol. Soc. Wash.* 88: 355-366).

TABLE 1. Measurements (mm) of *Crotophaga major* from South America and Panama compared to two Mexican specimens.

	n	Range	Mean	Mexican
♂♂ wing (flat)	25	185-208	197.6	220
♂♂ bill ^a	22	31.4-35.7	33.7	36.8
♀♀ wing	14	184-194	189.6	202
♀♀ bill	13	29.4-33.2	31.6	31.7

^a Bill length from anterior margin of nostril to tip

I am most grateful to Nelson D. Hoy for allowing me to examine and report on the specimens in his collection, and to John Farrand, Jr., and Allan R. Phillips for comments on the manuscript. *Received 5 May 1978, accepted 11 July 1978.*

A Helper at a Tufted Titmouse Nest

MELINDA F. DAVIS

School of Biological Sciences, Oklahoma State University, Stillwater, Oklahoma 74074 USA

In May 1975, while working with a population of color-banded Tufted Titmice (*Parus bicolor*) in Stillwater, Oklahoma, I observed three adult titmice that had been banded the previous winter making feeding trips to a nest containing four nestlings. I used Dixon's (1965) criteria to determine that two of the birds were females and one was a male. One of the females was subordinate to both of the other adults and probably was unmated. The second female was subordinate only to the male and probably was his mate. All three of the adults were observed bringing food to the nest box although the females each fed the young approximately five times more often than did the male. Each of the adults was observed removing fecal pellets from the nest after feeding.

The young fledged by May 19. After fledging the dominant female was observed feeding fledglings three times while the subordinate female was observed feeding a fledgling once. The male was never observed feeding fledglings but escorted the young and was observed with them and the females several times.

The last sighting of the subordinate female was made July 9 after the young had dispersed. The dominant female and the male were often together throughout the fall and winter and were paired the next spring. After having laid three eggs, the female was found dead 13 April 1976 in the same nest box used the previous year. The male was never observed to remate and was last sighted 16 April 1977.

As only four young were involved in this occurrence, it did not seem likely that a double clutch was being tended by two laying females. Furthermore, I have found no reports of dump-nesting by Tufted Titmice. Wright (cited by Laskey 1957, *Bird-Banding* 28: 135-145) observed a pair of Tufted Titmice raising a second brood with the help of what he believed to be two of the young of the first brood; in the instance I observed, the helper was banded the previous winter. Brackbill (cited by Skutch 1961, *Condor* 63: 198-226) reported a banded unmated yearling feeding the young of its female parent who was mated to a new male. In this instance the male tried to drive off the yearling. The yearling also did not feed the nestlings as regularly as did the parents. In the case I observed the subordinate female possibly might have lost a mate and/or abandoned a brood. However, after being banded 8 December 1974 she was sighted 17 times and only once during the intervening months did she associate with a titmouse other than one of the pair she eventually helped. Since the nest was not observed until 4 May, after the young had hatched, it is not known whether the subordinate female began her helping behavior earlier in the nesting cycle.

My thanks to R. J. Miller for reviewing this manuscript and for the help extended during my research. Thanks also to H. C. Miller for her continued support. *Received 4 October 1977, accepted 23 February 1978.*

Frugivory by Swallow-Tailed Kites in Costa Rica

WILLIAM H. BUSKIRK AND MARGARET LECHNER

Biology Department, Earlham College, Richmond, Indiana 47374 USA

On the morning of 4 July 1977 we observed a flock of 18 Swallow-tailed Kites (*Elanoides forficatus*) circling over the forested crest of a steep slope at 1,300 m in Monteverde, Puntarenas Province, Costa Rica. As the kites circled at eye level on the upslope side of a clearing planted in coffee, several birds began feeding on the fruits of a tree in the forest edge near us. The tree, *Matayba oppositifolia* (A. Rich.) Britt. (Sapindaceae), is common at this elevation in Monteverde.