

off the Louisiana coast for 20 yr who had never observed a Blue-faced Booby prior to their first visit to my 1976 study site. Four boobies visited the platform again for 1 week during April and all of November 1977 (J. Berzas, pers. comm.).

There is a small colony of Blue-faced Boobies that breeds from late fall to spring at the Alacran Reefs, 100 km N of Yucatan (Palmer 1962: 284), about 650 km SE of my 1976 study site. Its members may be those reported along the Louisiana (Lowery 1974: 129; 2 May–13 September) and Texas (Oberholser 1974: 84; 15 March–23 September) coasts.

During the non-breeding period it is not known whether this species normally roosts on land or at sea in the northern Gulf. Traylor (1962) reported that Blue-faced Boobies normally feed throughout the day, returning to land in late afternoon or evening after ranging as far as 160 km from land. If this were true for the boobies I observed, they were feeding at the maximum of their daily range at my study site. The closest land was Galveston, Texas, 120 km NW, and Corpus Christi, Texas, 330 km W. On two occasions I observed a booby roosting on water, but most times they departed during mid-afternoon in an easterly or southerly direction toward other platforms (>15 km distance) in the oil field, returning 2 h after sunrise. As the directions of their departures were not toward land and their arrival at my study site was early in the day, I believe the boobies I observed roosted at sea.

Murphy (1958) reported that Blue-faced Boobies were commonly seen riding on turtles when far at sea, and Sprunt (1951) observed them frequenting buoys and pilings at Dry Tortugas, Florida. Anchor buoys are present near most oil platforms, and it is possible that boobies used the buoys and/or platforms as roosting sites.

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Migrational Homing of Male Gadwalls to Breeding Grounds

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Most pair bond formation in North American ducks takes place on the wintering grounds or during spring migration (Hochbaum 1944, McKinney 1965). Males then follow their mates to the nesting areas, and the bond remains intact until the middle of the breeding season, when the drake departs, often to nearby molting areas. The tendency of females to return to the same nesting area in successive years has been well documented (e.g. Lincoln 1934, Sowls 1955). Relatively less emphasis has been placed on the banding and marking of males on the breeding grounds. Consequently, there have been fewer records of males returning to these areas from year to year. However, there is some evidence for North American

TABLE 1. Number of marked Gadwall males of various ages that were reobserved at Marshy Point, Manitoba in successive years, 1973-1975

Reobservation interval	1972			1973			1974			1972-1974			Total		
	Juv.	Yr.	Ad.	Unk. ^a	Juv.	Yr.	Ad.	Juv.	Yr.	Ad.	Juv.	Yr.		Ad.	Unk.
Number marked in each age class	12	21	44	6	6	20	61	24	33	57	42	74	162	6	284
1 yr post-marking	0	1	4	-	0	3	6	1	2	3	1	6	13	-	20
2 yr post-marking	0	1	2	-	0	0	0	-	-	-	0	1	2	-	3
3 yr post-marking	0	0	0	-	-	-	-	-	-	-	0	0	0	-	0
Total	0	2	6	-	0	3	6	1	2	3	1	7	15	-	23

^a During first part of the 1972 field season, no age determination was made on six males. These birds were never observed on the study area in the following years

ducks indicating a tendency of males to return to the breeding areas used in previous years, as paired drakes (Dwyer et al. 1973, Mallard, *Anas platyrhynchos*) or as unmated drakes (Sowls 1955, Pintail, *Anas acuta*; Trauger 1971, Lesser Scaup, *Aythya affinis*; and Poston 1974, Shoveler, *Anas clypeata*). This note documents the appearance of male Gadwalls (*Anas strepera*) on the breeding grounds in successive years.

During a study of the role of age in the breeding ecology of the Gadwall in southern Manitoba, 242 males were captured from 1972 through 1974, using a decoy trap (Blohm 1977) or drop-door bait trap technique. Trapping was carried out from April to July of each year. All males were banded, color-marked with airplane dope, and given colored nasal saddles (Doty and Greenwood 1974), bearing alphanumeric markings, for subsequent identification. Prior to release, each male was aged as a yearling (1 yr old) or an adult (2 yrs or older) on the basis of plumage characteristics (Blohm 1977). In addition, 42 juvenile male Gadwalls (25 wild-trapped and 17 pen-reared) were marked with nasal saddles and released on the area.

Although the primary objectives of the study were not behavioral, certain activities such as courtship displays, courting and three-bird flights, and various comfort movements were noted throughout. In addition to daily observations, breeding pair transects were conducted once weekly, April through June, in 1972 and 1975, and twice weekly in 1973 and 1974. Marked birds were identified whenever possible.

From 1973 through 1975, 23 cases of returning males were documented on the study area, including 20 males observed the year after marking, two observed in 2 consecutive years, and one in alternate years (Table 1). This rate of return is higher than those recorded by Sowls (1955), who found 2 of 132 pen-reared Pintail drakes on the same breeding grounds in the following year, or by Poston (1974), who observed 3 of 153 Shoveler drakes in successive years. Trauger (1971) marked 34 adult male Lesser Scaup and found only 2 that came back to the breeding area throughout his study.

Four age classes of returning males were observed during the study. Upon recapture or reobservation in following years, 1 male appeared as a yearling, 7 as 2-yr olds, 13 as 3-yr olds or older, and 2 as 4-yr olds or older. The appearance of the yearling drake, banded in 1974 as a wild juvenile, indicated a return to its natal marsh in 1975.

Only 2 of the 23 returning males were observed with mates during the study. In 1974, one male captured as an adult the previous year was seen with a marked female that had escaped from a holding pen. In 1977, this same drake (now 6+ yrs old) was observed with another female on the study area (Ron Gatti pers. comm.). Another male, captured as an adult in 1974, was observed alone on three separate occasions early in the breeding season of 1975 and then with a female later in the season. From 1972 through 1974, seven Gadwall pairs were captured in the bait traps. In addition, 24 drakes were caught in the decoy traps and observed later in the season with a female. However, none of these paired drakes ever appeared on the breeding grounds in subsequent years.

During the study, a total of 116 separate observations were made on the remaining 21 males throughout April, May, and June. In each case, females were absent, and I suggest that these birds were unpaired when observed. Fifty-four observations, involving 15 of the 21 males, were made prior to peak arrival dates of Gadwalls on the study area. This early appearance indicates that the majority of all returning males may have been unpaired upon arrival to the breeding grounds.

These observations illustrate that some male Gadwalls, especially older, unpaired birds, may home to the breeding areas used in previous seasons. Their arrival implies some sort of learned pattern of migration as these birds do not have mates to follow. This familiarity with the breeding grounds from past years may increase the probability of obtaining a mate during the current breeding season as well as enhance the chances of survival.

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Greater Ani (*Crotophaga major*) in Mexico

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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