

touched the surface of the water. As the bird stretched forward, it gave the flatulent buzz described above. This display was repeated several times by the same bird; the other two stood quietly and appeared to be watching.

At the "Estancia Tres Marias," just south of Corrientes City, I observed an apparent courtship display on 15 September 1969. A pair of *Syrigma* walked rapidly side by side at the edge of a garden with closely-clipped grass. Both held all their head-plumes and upper-neck feathers strongly erected and their bills high, just above the horizontal. Every four to five steps one bird (which I took to be the male) bowed forward until its bill almost touched the ground; then it stood erect once more and continued marching alongside the other bird. During the bow, the pace of both birds slowed but did not stop. Occasionally one or the other of the displaying birds raised its head until the bill was about 60° above the horizontal, gaped the bill widely, and uttered 2-4 whistling notes. Another pair of Whistling Herons was performing similar displays about 15 m away. After displaying for about 5 min, both birds of the pair flew off together.

The latter display may be related to the one described by Short (loc. cit.). Like that author, I am unable to comment on the significance of these observations, other than to say that the behavior of *Syrigma* appears quite unlike that of any other heron that I have observed, including *Nycticorax*. I agree with Humphrey and Parkes (loc. cit.) that the present behavioral evidence suggests that *Syrigma* is not closely related to *Nycticorax* and should not be included in that genus, as was suggested by Bock (loc. cit.). Further conclusions on the taxonomic relationships of *Syrigma* must await a thorough study of the ethology and ecology of the species. Such a study would seem highly feasible in northeastern Argentina, where the bird is abundant and easily observed.

These observations were made under a research grant from the National Geographic Society, and this paper was written while I was a Chapman Research Fellow at the American Museum of Natural History. I thank Dr. A. J. Meyerriicks for comments on the manuscript.—M. P. KAHL, *American Museum of Natural History, New York, 3 November 1970.*

Nestling mortality in a Texas heronry.—Nesting success studies of colonial birds are hampered by the unmeasured effect of the investigator on the colony. Dusi and Dusi (Wilson Bull., 80:458-466, 1968) state that their presence in a heronry may have affected breeding success, but given no measurement of this affect. The following study was an attempt to quantify the effect of frequent nest checking on reproductive success in a Texas heronry.

The study was conducted during the summer, 1970, at a 50-acre lake on the Rooke Ranch, Refugio County, Texas. The colony consisted of an estimated 6,582 birds, 91 per cent of which were Cattle Egrets (*Bubulcus ibis*). The remaining 9 per cent were: 175 Little Blue Herons (*Florida caerulea*), 150 Snowy Egrets (*Leucophoyx thula*), 100 Louisiana Herons (*Hydranassa tricolor*), 50 Roseate Spoonbills (*Ajaja ajaja*), 40 Black-crowned Night Herons (*Nycticorax nycticorax*), 35 Anhingas (*Anhinga anhinga*), 20 American Egrets (*Casmerodius albus*), 6 Great Blue Herons (*Ardea herodias*), and 6 White Ibises (*Eudocimus albus*). About 200 Boat-tailed Grackles (*Cassidix mexicanus*) were also present.

The heronry was situated in about five acres of dead huisache (*Acacia farnesiana*) trees at the southeast edge of the lake. Water depth at the colony varied from two to three feet, and most nests were 18 to 48 inches above water. Two study sites, each 100 yards by 15 yards, were selected in the heronry. The sites were 75 yards apart, a distance sufficient to prevent disturbance to one site while the other was being checked. The

TABLE 1
CHANGES IN NUMBER OF EGGS AND NESTLINGS

Date	Site I (77 nests visited at 2-day interval)			Site II (100 nests visited at 8-day interval)		
	Eggs	Nestlings	Loss per 8-day interval	Eggs	Nestlings	Loss per 8-day interval
6 July	223	0	0	278	0	0
14 July	90	115	17	105	163	10
22 July	19	180	6	14	229	25
30 July	3	163	33	1	177	65

sites, equidistant from shoreline, were similar in nest density, species composition, and general appearance.

On 6 July, 164 Cattle Egret, 5 Louisiana Heron, 2 Snowy Egret, 3 Black-crowned Night Heron, and 2 Little Blue Heron nests with eggs were marked. Within eight days approximately 60 per cent of the eggs had hatched. From 6 July until 3 August when the nests were destroyed by Hurricane Celia, nestling development was noted at one site every two days and at the other site every eight days. Nest checking was made by a single individual wading at the site. No other known human activity occurred at the colony. Since the only apparent difference between the sites was that one received four times more visits than the other, a difference in nestling mortality should indicate the effect of frequent nest checking. Table 1 shows the changes that took place in the number of eggs and nestlings during the study period.

At the beginning of the study period the area visited at two-day intervals (Site I), had an average of 2.9 eggs per nest and Site II (visited at eight-day intervals) had 2.78 eggs per nest. This difference in the average number of eggs per nest in the two sites was not significant at the 99 per cent confidence interval when the sample means were compared by a *t*-test using pooled variance ($t = .270$, $df = 175$).

At the end of the observation period Site I had been observed 16 times and Site II had been visited four times. The nests in Site I now had 2.12 birds per nest and Site II, 1.77 per nest. Using the same test as above the difference is significant at the 99 per cent confidence interval ($t = 2.96$, $df = 175$). The importance of this difference is more apparent than real because the primary loss of young during the last eight-day interval was through fledging and not mortality.

The nests that were more frequently visited were at least as successful as those infrequently observed, indicating that human visitation is not necessarily detrimental during the later stages of reproduction.

Dusi and Dusi (Wilson Bull., 82:458-460, 1970) reported that of 126 eggs in 50 nests at a Houston County, Alabama heronry, only 18 (14.8 per cent) hatched and produced fledglings. In our study at least 340 of 501 eggs (67.9 per cent) in 177 nests hatched and were near fledging when the heronry was virtually destroyed by Hurricane Celia on 3 August 1970. It appears that, in the absence of such a catastrophic event, reproductive success in Cattle Egrets can be very high.

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Woodsboro, Texas, for their support and cooperation.—DAVID K. GOERING, *Department of Zoology, University of Arkansas, Fayetteville, Arkansas* (Present address: *Department of Biology, Cottey College, Nevada, Missouri 64772*) AND RONALD CHERRY, *Department of Zoology, University of Illinois, Urbana, Illinois 61801, 2 October 1970.*

Collisions with wires—a source of anatid mortality.—As harvest demands upon waterfowl increase and their habitats diminish in quantity and quality, reduction of non-hunting mortality warrants increased emphasis. The authors' observations on the northern prairie breeding grounds suggest that anatid strikes of wires (fence, communications, and power) occur commonly, but go largely unnoticed and unreported.

Hochbaum observed and photographed a full-grown juvenile, female Pintail (*Anas acuta*) impaled on a strand of barbed wire on 15 August 1966, in the Portage la Prairie, Manitoba, Community Pasture (Fig. 1a). The bird flew from a roadside ditch and caught a barb, pointing against the direction of flight, in the skin on the top of the head. The bird's momentum swung it up and over the fence so it was impaled once more. Cornwell observed in August of 1966 an adult drake Blue-winged Teal (*Anas discors*) similarly impaled on the top strand of a barbed wire about three miles east of Woodworth, North Dakota. The drake was caught by the skin on the dorsal aspect of the neck and suffered a broken neck. There was no sign of an immediate wetland area. Charles Dane (pers. comm.) told us of a nesting, Blue-winged Teal female that appeared to have caught itself near the vent on a barbed wire near the nest site. The fence was electrified and the hen was long enough to reach from wire to wire. There was no reason to believe the bird had not been accidentally impaled. Jack C. Shaver (pers. comm.) told us of a drake Pintail flying into telephone wires and wrapping itself by the neck around two wires in July, 1948, 5 miles east of Saskatoon, Saskatchewan (Fig. 1b).

Stout (The nature and pattern of non-hunting mortality in fledged North American waterfowl. Unpubl. M.S. thesis, Virginia Polytech. Inst., pp. 77–81, 91–93) in a monumental, but unpublished, study of non-hunting mortality in waterfowl, reported 1,487



FIG. 1a. Female Pintail in southern Manitoba.

FIG. 1b. Male Pintail in southern Saskatchewan.