GENERAL NOTES

Promiscuous mating behavior in the White Ibis.—The colonial breeding of most ciconiiforms, which concentrates displaying males and subsequent nest sites, leads to many types of interactions among individuals most of which have been little studied. Such information can be obtained only by careful observation of individual birds. The White Ibis (*Eudocimus albus*) is particularly amenable to this because during pair formation birds become variously stained by dirt and blood. Observations of such birds at a White Ibis nesting colony in southern Florida revealed an interaction apparently not previously described in ibises, promiscuous mating behavior. The clearest example was observed on 20 June 1972 between 15:00 and 17:00. Nine nests were located in close proximity to each other on two lateral branches of a red mangrove tree (*Rhizophora mangle*). Nesting in this group ranged from a partially constructed nest without eggs to a nest with two one-week old young. The ibises at five nests were involved in the situation described here. These nests were designated B, G and H (females incubating one egg), J (a male incubating one egg) and C (a male gathering nest material and female building the nest).

While gathering nesting material, male C became involved in a territorial squabble with female B which was incubating at the nest immediately above his. Male J left his nest and joined the conflict against both female B and male C. After male C withdrew, male J continued to peck at the female and then mounted and unsuccessfully attempted to copulate with her. He dismounted, remained nearby for several minutes, mounted her again and was apparently successful in copulating. He then returned to his nest in response to male C who was trying to remove some of the nesting material. Within 5 minutes, male J returned to female B, gave her a few sharp jabs and again successfully copulated with her. This sequence was repeated 5 minutes later. The next time he flew over to female B, he pecked at her but then flew up to nest G and attempted to approach the female incubating there. At first he was soundly driven off, but he remained nearby and was soon standing next to her preening the feathers along her back. Meanwhile pair H with a nest immediately below that of male J completely dismantled male J's nest adding his material to their unfinished nest and in the process knocked male J's single egg into the water. Approximately 10 minutes after they finished, male J returned to his nest site but merely stood nearby for nearly 15 minutes before flying first to a nearby island and then off in the direction of the feeding ground. This example of promiscuous mating behavior is the best documented of several such instances that I have witnessed. In this case male J, who already had a nest with one egg and whose mate was present earlier in the day, copulated repeatedly with another female and showed considerable interest in a third.

Deviation from normal monogamous behavior has been reported in other colonially nesting species. For example although herons (Ardeinae) along with most Ciconiiformes are generally considered to be monogamous (Lack, Ecological adaptations for breeding in birds, London, 1968) and to exhibit strong pair bond stability, there are a number of reports of promiscuity in this group (e.g., Verewey, Zool. Jahrb., 48:1–120, 1930; Meanley, Wilson Bull., 67:84–99, 1955; Allen, Audubon Mag., 57:24–27, 1955; Mountfort, Portrait of a wilderness, London, 1958; Meyerriecks *In*: Palmer (ed.), Handbook of North American birds, Vol. 1, 1962). In fact, the phenomenon seems to be widespread among colonial nesting birds. It has, for example, been reported in the Rook (Yeates, The life of the Rook, London, 1934), European Cormorant (Kortlandt, Arch. Neerl. Zool., 4: 401–402, 1940) and Wandering Albatross (Tickell, *In* Austin (ed.), Antarctic bird studies,

1968). The Laysan Albatross is the only colonial bird in which promiscuity has been thoroughly studied. Fisher (Living Bird, 10:19–78, 1971) showed that in this species promiscuous copulation never resulted in intromission. Although I did not conduct a similar study with the White Ibis, I detected no differences between the behavior and duration of promiscuous copulations compared to those of paired birds. It therefore was my impression that many promiscuous copulations were successful. If this is true, the effect, if any, that such behavior may have on the reproductive success of an individual deserves attention (see Mayr, Animal species and evolution, Cambridge, 1963:199–201). In the case described here, the male lost his nest, which is a highly probable event if nest attentiveness is relaxed during any stage of incubation. This and the predominance of strictly monogamous relationships in the White Ibis suggest that promiscuity would be maladaptive for an individual. However the fact that such behavior is widespread in colonial species of birds and in some cases extremely common within a colony (e.g., Meanley, op cit.) suggests that the existence of promiscuous behavior in typically monogamous, colonial birds may in some cases be of importance within the population and merits further study.—JAMES A. KUSHLAN, *Department of Biology, University of Miami, Coral Gables, Florida 33124, 23 October 1972.*

Marsh Hawk catches fish.—On 26 October 1972 while scanning a coastal salt marsh in Milford, Connecticut, I saw an immature Marsh Hawk, (*Circus cyaneus*) slowly gliding over the grass and water filled ditches. It reached a pool that had been formed by an exceedingly high tide and began circling. Then it began a wild, bouncy flapping flight back and forth over the pool obviously harrying something in the pool. It did this for a minute or so then swooped up to a point 10 feet or so above the pool, held its wings out in back and plummeted in Osprey fashion with outstretched talons into the water. It remained on the surface for a few seconds then rose with a fairly large, 10 inch or so, fish dangling from its talons. It flew a few hundred feet then settled on a knoll of high ground and began to devour the fish.

Investigation showed the pool to be roughly round in shape with a 50 foot diameter; and the depth averaged two and one half feet. The hawk had taken the fish in roughly two feet of water. There is no doubt that the fish had been caught in this pool during the exceptional high tide of the night before as it was obviously only a temporary pool.

Though fish are listed as part of their diet there are few accounts of their hunting methods dealing with this form of food.—NOBLE S. PROCTOR, *Biology Department, Southern Connecticut State College, 501 Crescent Street, New Haven, Connecticut 06515, 1 November 1972.*

Some food preferences and aggressive behavior by Monk Parakeets.—The Monk Parakeet (*Myiopsitta monachus*) is well established in New York, southern New England, and the Middle Atlantic States. A pair found in a suburban section of Pittsburgh, Pennsylvania, in the winter of 1971–72 engaged in one of the first occurrences of attempted breeding west of the Allegheny Mountains or Piedmont Plateau. The birds were almost surely a local introduction, there being no evidence and little possibility that they crossed the Alleghenies from the East Coast. In following the breeding efforts of this pair, several interesting food and behavioral patterns were recorded. They are presented here as they may be of some value in attempting to evaluate the pest status of the species in the Northern Hemisphere.