themselves at the water's surface or on the lotus leaves (Brattstrom, 1963). The disappearance of aerial hunting in autumn is probably associated with the recession of the various forms of aquatic vegetation, the passing of the frogs from a particularly vulnerable phase in their development, and/or the frogs' dispersal from the vicinity. Aerial hunting, then, may be a behavioral adaptation for exploiting an ephemeral, large-item food source; or, it may be an alternate strategy that the herons must resort to when their usual food source is temporarily unavailable.

During this study I received financial support from an N.I.H. Training Grant (No. 5 TO1 GM01779) of the Department of Ecology and Behavioral Biology, University of Minnesota, and a research fellowship from the Rob and Bessie Welder Wildlife Foundation, Sinton, Texas. Acknowledgment is made to Dr. Frank McKinney (University of Minnesota) for research advice and editorial assistance and to Dr. Clarence Cottam (Director, Welder Wildlife Foundation) for supervision and assistance in the field.

LITERATURE CITED

BOICE, R. AND R. C. WILLIAMS. 1971. Delay in onset of tonic immobility in *Rana pipiens*. Copeia, 1971 (4) :747–748.

BRATTSTROM, B. H. 1963. A preliminary review of the thermal requirements of amphibians. Ecol., 44:238–255.

DICKINSON, J. C. 1947. Unusual feeding habits of certain herons. Auk, 64:306–307.

GOODYEAR, C. P. AND R. ALTIG. 1971. Orientation of bullfrogs (*Rana catesbeiana*) during metamorphosis. Copeia, 1971 (4) :362–364.

HEDEEN, S. 1967. Feeding behavior of the Great Blue Heron in Itasca State Park, Minnesota. Loon, 39:116–120.

JENNI, D. A. 1969. A study of the ecology of four species of herons during the breeding season at Lake Alice, Alachua County, Florida. Ecol. Monogr., 39:245–270.

KUSHLAN, J. A. 1972. Aerial feeding in the Snowy Egret. Wilson Bull., 84:199–200.

MARSHALL, R. V. A. 1961. Herons fishing from the air. Brit. Birds, 54:202.

MEYERRIECKS, A. J. 1962. Diversity typifies heron feeding. Nat. Hist. Mag., 71:48–59.

NASH, R. F., G. G. GALLUP, JR., AND M. K. MCCLURE. 1970. The immobility reaction in leopard frogs (*Rana pipiens*) as a function of noise-induced fear. Psychon. Sci., 21:155–156.

PARMER, H. E. 1968. Unusual behavior of a Yellow-crowned Night Heron. Migrant, 39:12.

RECHER, H. F. AND J. A. RECHER. 1969. Comparative foraging efficiency of adult and immature Little Blue Herons (*Florida caerulea*). Anim. Behav., 17:320–322.

RODGERS, J. A. JR. 1974. Aerial feeding by Snowy and Great Egrets in Louisiana waters. Wilson Bull., 86:70–71.

DOUGLAS W. MOCK, *Department of Ecology and Behavioral Biology, J. F. Bell Museum of Natural History, University of Minnesota, Minneapolis, Minnesota 55455.* *Accepted 11 April 1974.*

Use of artificial nest structures by Everglade Kites.—The Everglade Kite (*Rostrhamus sociabilis plumbeus*), a form now endangered in the United States, breeds regularly in the marshes on the west side of Lake Okeechobee, Glades County, Florida. In 1972 and 1973 about 80 percent of known U. S. nests were in this area. The nests are typically placed in cattails (*Typha domingensis*) and were in both those years. Of the

FIG. 1. The artificial nest structure for Everglade Kites showing details of the construction.

four nests observed there in 1972, two were blown down by high winds and the third was lost when invaded by ants (*Crematogaster atkinsoni*); the fourth nest fledged young. In 1973, some nests settled as much as 1 m, tipped over, and lost the contents. These nests were built in the taller clumps of *Typha*, above the main canopy of vegetation. The leaves of these taller cattails were too weak to support the weight of the nest, adults, and young or to withstand the effects of strong winds and driving rains.

From the above it is clear that kite nests are prone to misfortune, particularly due to high winds—which often accompany thunderstorms—and collapsing and shifting vegetation. In an effort to alleviate this problem artificial nest structures were used. In 1970 Ivan Sutton of Pleasanton, Kansas, designed and assembled two all-metal nest structures specifically for Everglade Kites. These he gave to the senior author, and since then several additional structures have been made.

In the spring of 1973, four Sutton nest structures were used for the first time. Into each an active nest was placed, and then the structure was set into place. Care was taken to insure that the nest remained at its original height and at the exact location as before. Only nests judged likely to settle, be blown down by high winds, or overturned by heavy rains were treated in this manner. As we suspect that kites will not initially build in these artificial structures—perhaps failing to recognize them as nesting sites, we waited until nest construction had been completed and one or more eggs laid before making the change.

The parent birds accepted and occupied the artificial structures in all four cases. At two nests the kites added material that increased the size of the nest after the switch was accomplished. When the initial changes were made, one nest contained young and three contained eggs. Two of the four nests were successful, fledging five young (two and three each). Failure of the other two nests resulted from predation on the eggs.

Although no ant problem was witnessed in 1973, use of artificial nest structures could greatly reduce this threat. This would be done by making the single vertical support ant-proof and by taking care to prevent surrounding vegetation from touching either the nest or the support structure. Additional modifications of the structure might also result in the prevention of nest predation by mammals and snakes.

The Sutton nest structure consists of a shallow basket attached to a 1.5-m-long shaft of thin-walled metal tubing (Fig. 1), 8 cm in diameter and open at the bottom end. The basket has a tubular outer ring, 1 cm in diameter, with six concentric and 15 radial strips, each 1.5-cm-wide and riveted together, forming the "nest." The basket measures 55 cm inside diameter and 8 cm in depth. It is supported on the bottom by three braces, which are woven into the basket and are attached by rivets to the main support tubing. The metal used in the construction is aircraft-grade 321-gauge stainless steel, but galvanized or aluminum sheet metal should be equally satisfactory. The concentric strips and the braces were cut from a sheet of the same gauge stainless steel, and the radials were cut from the upper end of the support shaft, leaving the lower ends attached. The support was inserted over a wooden post or metal pipe, each of the proper diameter to give a snug fit, and driven into the marsh substrate. The nest structure was found to be lightweight, durable, easy to handle in the field, and reusable indefinitely, if removed upon completion of nesting and stored in a sheltered place until ready for use at another nest.

We thank Ivan Sutton for making and delivering the nest structures at his own expense and to Reece I. Sailer and D. R. Smith, of the U. S. Department of Agriculture, Research Services, Beltsville, Maryland, for specific identification of the predator ants.—PAUL W. SYKES, JR., *Bureau of Sport Fisheries and Wildlife, Patuxent Wildlife Research Center, Field Station, P. O. Box 2077, Delray Beach, Florida 33444 and* RODERICK CHANDLER, *National Audubon Society, Sanctuaries Department, 505 SW 10th Street, Okeechobee, Florida 33472.* *Accepted 6 May 1974.*

Occurrence of Swainson's Hawk substantiated in New Jersey.—There are numerous sight and several specimen records of Swainson's Hawk (*Buteo swainsonii*) in the eastern United States, but apparently no previous substantiated records exist for New Jersey. The only specimen record from the state is of a bird purportedly collected in Essex County in 1915 (now in the Buffalo Museum of Science), but Heintzelman (Cassinia, 54:31, 1973) has recently rejected it as being of doubtful validity.

On 16 September 1973, I trapped, banded, photographed, and released a light-phased juvenile ("immature") Swainson's Hawk at Cape May Point, Cape May County, New Jersey. Measurements were: wing (chord) 377 mm; culmen (from cere to tip of bill) 20.1 mm; and weight 518 g. The bird was in excellent plumage and showed no signs of having been in captivity. The primaries and rectrices (the tips of the latter still retained a small amount of down) were undamaged, whereas caged hawks nearly always damage the tips of these feathers. This species is not normally used for falconry and the tarsi showed no sign of wear by jesses. Thus I consider that this was a normal wild bird.