MISSISSIPPI KITES NEST AT HAYS, KANSAS, SUMMER OF 1972

Marvin E. Rolfs

Although the first known successful nesting of the Mississippi Kite (Ictinia mississippiensis) at Hays occurred in 1972, events of the previous summer are significant. Unless otherwise stated, observations were made at my home located on a small rise in north-central Hays in a typical residential area with scattered trees in yards and along alleys. A small canal, which drains a retention pond holding water briefly after heavy rains, is located about one-half mile to the west. My first kite observation was a single bird on 22 May 1971. On 5 June two kites were in my yard and on the 13th one alighted in the top of my only weeping willow and ate something. During the next month I saw kites three or four times. They had faintly barred tails and appeared to be subadults.

On 10 July I heard a kite calling while perched on a dead branch of a willow just east of my yard. Next morning at 07:30 hours a kite was calling again from the same spot. Soon a second kite flew in and copulated with the first bird. The male then flew away and soon returned with a small stick (5 or 6 inches long; less than a half inch in diameter) and landed near the female. The male held the stick toward the female for a few seconds and then left without calling, while the female remained. The male flew in a large semi-circle (500 foot diameter) and disappeared behind some tall trees; it soon reappeared carrying two small sticks. He flew around a while and then landed beside the female still carrying one stick in his mouth. Soon both kites left and were lost from sight.

On 14 July a kite alighted in my weeping willow and preened extensively, once spreading its wings as if cooling. The bird never flinched when I started a power mower directly under it. In the next few days I saw the kites frequently. At 09:00 on the 17th I saw a kite with its mouth so full of sticks (some 12 inches long) that it had trouble carrying them. It was headed north and a few minutes later I again saw a kite heading north, this time with a single stick. At 09:40 I walked north and was fortunate to quickly find the nest. One kite was on the nest, the other on its edge and both were working on the nest. The nest tree was a 35 foot elm tree about 18 feet north of the sidewalk, in the front yard of a home and less than one block north of my home. The nest was about 8 feet from the top of the tree, about 6 feet from the edge and about 8 feet from the trunk. The nest appeared to be 20–40% complete and could be easily seen from both the sidewalk and from the alley near the house. On the 18th I saw a kite carrying a little leafy material towards the nest which, by this time, resembled a large dove nest with a few leafy twigs worked in. I observed from one to three kites (both adult and subadult) in north Hays on 34 different days between 18 July and 7 September. However, the nest was never used and I saw no kites near the nest after the 18th.

In 1972, I saw my first kite (an adult) in north Hays on 16 May. At 20:45 on the
29th, upon returning from a short vacation, I went to the backyard to investigate a terrific commotion. Two kites trying to roost in some tall cottonwoods across the alley were being harassed by five crows, and seven grackles were chasing both the crows and the kites. They went around and around, in and out of trees, making an awful racket. Next day, although I had not yet seen any kites carrying sticks, my wife and I began searching for the kite nest. We first visited the 1971 nest and found that the nest had survived the winter and even contained freshly added nesting material. On the 31st I saw a kite land on a dead limb of a small willow, suddenly lunge forward, flap its wings and fall. At first I thought it had been shot but heard no shot and the kite landed gracefully on a limb four feet below. Apparently this action was its stick-collecting technique as it now held in its mouth a small branch with some side shoots having a total length of 18-24 inches. Later, a kite in the same tree grabbed a much smaller dead branch and with a quick upward snap of its head broke off an 8 to 10 inch segment. On both occasions the sticks were carried to the nest.

Early in the evening of 2 June I saw four kites, two of them apparently subadults. Later, two adults came in to roost in the tall cottonwoods across the alley and for 80 minutes Common Grackles harassed the kites continuously. Only once did the kites leave their perches, and then singly, each made a half-circle and returned to a slightly different perch. On 3 June I saw a kite on the nest for the first time. Trees in 1972 bore much heavier foliage than in 1971 and in July 1972 (unlike 1971) the nest could not be seen from above, from the sidewalk near the nest, or from the nearby alley. Part of the nest could be seen from a point due west of the nest about 15 feet from directly beneath. Also, if wind conditions were right, I could, from just the right position in my backyard, look through the cottonwoods along the alley and see one half the kite nest through a 15 inch opening in the nest tree. For 34 days I observed the incubating bird from my yard.

At 19:15 on 6 July, after returning from a trip out of town, I was unable to see the kite on the nest and a closer check of the nest confirmed that the bird was absent. Five minutes later a kite was standing on the edge of the nest reaching down into the nest as if feeding. I had noticed for several days previously that the kite on the nest was either turning eggs or feeding young. After this date I saw adults feeding young almost daily but never saw more than one young at a time. I could not see into the nest to see the complete nest contents at any time. Only once, during a storm, did I see an adult stand and spread its wings over the young for protection. The nest location and heavy foliage provided adequate protection from the sun.

On 2 August, after a severe evening storm, I saw both adults in the air and a young kite in the nest. A much heavier storm occurred later during the night. Next day I again saw both adults flying, and a young kite in the nest but the nest appeared to have broken apart and one-third had slid slightly from its supports. The smaller portion appeared to have on it either some gray and white nesting material or a dead kite. I was out of town on the 4th. On the 5th at 19:30, I failed to see the young kite from my yard, so visited the nest and found the young kite some two feet from the nest but on its supporting branch. The kite appeared nearly ready to fly. As I walked across the street to talk with a neighbor the kite moved another three feet from the nest. I noted that the object previously on the smaller portion of the nest was gone but found nothing beneath the tree. As we walked back across the street, the neighbor called my attention to what appeared to be wind-blown foliage on the TV-antenna of his house across the street from the nest tree. With field glasses I identified the object as the legs, wings and part of the body of a young kite. Apparently the much smaller of two young failed to survive the storm but the cause of death remains unknown. I had heard kites calling frequently from the area of the antenna all day but had not considered it unusual as they often used this area. The adults had apparently carried the dead youngster from the nest to the antenna and were feeding on it. Previously, on 3 August, I had observed an adult on the nest edge picking at something in the disturbed portion of the nest. The dead kite, ap-
parently killed very late 2 August or early 3 August, was about the same size as the young kite I observed on the nest on 27 July. On 5 August the surviving kite was adult size except for a shorter tail. The remains of the dead young (wing and tail feathers about 2½ to 3 inches long) are preserved at Fort Hays Kansas State College (FHKSC 2661).

On 6 August the young kite was observed six feet from the nest on the same branch; two days later it was 10 feet away on a different branch. On the 9th I heard a two-note kite call east of my house from 06:45 to 08:45 and I walked down the alley flushing both adults. At 11:00 I again heard the call and watched an adult circle above, then alight in my willow. It held a locust in its beak as it called frequently for 18 minutes, then transferred the locust to its feet and ate the locust. It was still on its perch when I left at 11:20. At noon I again heard the two-note call just east of my yard and upon investigation found the young kite in a tree next to my yard and just under one block from the nest tree. I believe, but am not certain, that 9 August was the date of first flight.

In early morning of the 10th, birds were scolding something east of my yard and by 09:00 the scolding had transferred to an isolated locust tree in my yard. I finally located the young kite well concealed near the treetop. It was facing toward the center of the tree rather than outward as adults normally did. The mobbing birds included Common Grackles, Brown Thrasher, Blue Jays, Robins, Baltimore Orioles, Black-capped Chickadees and a Yellow Warbler. Even a Purple Martin or two made passes at the young kite. Only the local House Sparrows were not involved. At 10:15 I heard a four-note call—a loud note followed by three notes of much softer intensity—and saw two adults on the TV antenna across the street. One had a locust in its mouth; the other a small toad. The one with the toad transferred it from beak to foot and back again several times and then held it crosswise in its mouth for 25 minutes while calling frequently. Meanwhile the young kite was a half-block away. At 13:15 the young kite came into my weeping willow and gave a quite loud note, followed by a softer note and trilling off into silence. The adult two-note call lacked the trill.

On 15 August (16:30) I saw the young kite on the antenna south of my yard, and as I walked over to investigate, an adult came in with a grasshopper in its mouth. The adult alighted near the young kite, gave it the grasshopper and departed. The young kite took the grasshopper, put it under a foot, started to eat slowly (three or four bites) and then put the remainder in its mouth and promptly choked. It gulped several times; tried to swallow several times; tried to remove the obstruction from its throat, using the right foot; then tried to swallow it again. Finally after a minute or so of this activity the young kite succeeded in swallowing the remains. Adults and young were seen in the area until 21 September.

The Mississippi Kite is an uncommon transient and rare summer resident in Ellis County (Ely, A history and distributional list of Ellis County, Kansas, birds, Fort Hays Studies, Science Series No. 9, p. 37, 1971). It has probably nested in Hays previously but this was the first active nest recorded. Other unusual aspects of the study are courtship activities and beginning of a nest (not used) in summer of 1971, the great difference in development of the two young, and apparent cannibalism of the dead young. 211 W. 24th St., Hays, Kansas 67601.

Pine Grosbeak in Topeka.—On 9 January 1973 I found an adult male Pine Grosbeak (Pinicola enucleator) feeding on cedar berries at West Campus. I was able to show it to my sister, Anne Sutherland, who is also familiar with the species. The robin-sized bird was largely pinkish, rose—red and gray. We approached closely enough to note the uncrossed bill, two white wingbars and other field marks. It was not found the next day. The only previous Shawnee County record is a flock which remained in Topeka from 24 November 1960 to 30 April 1961 (Rice, Kans. Orn. Soc. Bull., 12:2–3, 1961). “Woods,” 615 West 17th St., Topeka, Kansas 66612.
The Yellow-billed Cuckoo (Coccyzus americanus) was one of the common breeding birds of the University of Kansas Natural History Reservation when this tract was first protected as a natural area in July 1948. In the subsequent 25 years successional changes that have occurred there have been mostly beneficial to the cuckoo, which has become even more prominent. The trend of plant succession on the area through 1964 has been described in detail (Fitch, 1965). The most important changes resulting from the exclusion of fire and domestic animals, and the dying of most large elm trees from phloem necrosis, have been extension of forest and brush into formerly open areas of cultivated fields and pastures, and opening up of woodland by elimination of the largest trees.

In the early 1950s the cuckoo population on the 590-acre Reservation was estimated at somewhere between 20 and 40 pairs. In June and July 1972, when daily observations on cuckoos near the Reservation headquarters and across to the north and west were made, 13 pairs were counted on a continuous block of 45 acres which was fairly representative of the entire Reservation, being almost equally divided between woodland and former pastures where thickets of brush had sprung up. Our observations suggest that the birds were four to five times as abundant as they had been 20 years earlier. In 1952 the pasture areas and old fields of the Reservation were still relatively open, with isolated bushes and clumps appearing at the edge of the woodland, but were still too small and scattered to afford much shelter.

In 1972, on this area, cuckoo habitats in order of observed preference, were woodland edge, riparian thicket, brushy brome pasture, brushy prairie and old-field, thorny woodland of honey locust (Gleditsia triacanthos) and osage orange (Maclura pomifera), and elm-oak-hickory woodland. All these habitats merged and overlapped. Requirements include small, preferably thorny trees or bushes for nest sites, and trees with dense foliage providing insect prey. Mixed woodland, with many kinds of trees and shrubs, ensures an abundant and continuous supply of the foliage-feeding lepidopteran larvae which make up much of the cuckoos' food. Some of these larvae are abundant for relatively brief periods; in the latter half of August most walnut trees support large colonies of larvae of the walnut datana moth (Datana integerrima), and the cuckoos spend much of their time in these trees attracted by the easy food supply. During the late 1800s and early 1900s walnut trees were harvested for their valuable lumber, and under protection since 1948, they have increased to the benefit of the cuckoo.

Yellow-billed Cuckoos are among the latest summer residents to arrive on the Reservation in spring and appear only after trees have leafed out. Earliest records, probably representing arrival dates in most instances, were all in May: the 15th (1950), 24th (1951), 17th (1952), 21st (1953), 13th (1954), 3rd (1955), 12th (1956), 9th (1957), 6th (1958), 5th (1959), 7th (1960), 9th (1961), 1st (1962), and 4th (1964). Each year within a few days after the earliest record, cuckoos were abundant and calling was heard many times daily. In 1955, 11 days after the earliest record (on 3 May), a nest with eggs was found. Establishment of territory, pairing, nest-building, and egg-laying had occurred within this time.

According to Johnston (1965:28) average date of spring arrival is 12 May, and of autumnal departure is 23 September. It seems that the birds are involved with nesting during the entire 133-day period between these dates. The earliest nest found contained eggs on 14 May, 1955; the latest was completed between 18 and 20 September, 1951. Seasonal distribution of active nests that we recorded was as follows: 1–15 May (1), 16–31 May (1), 1–15 June (1), 16–30 June (none), 1–15 July (10), 16–31 July (4), 1–15 August (1), 16–31 August (3), 1–15 September (1), 16–30

Nest-building was observed on 13 August, 1956. A cuckoo in an elm tree broke off a 5-inch length of dead twig and flew 18 m to a second tree where within a few seconds it deposited the twig in a partly built nest. Within 20 minutes it made 12 trips to the first tree each time breaking off a dead twig, then returning with it to the nest. In all but two cases the bird carried the twig crosswise in its bill and its progress was impeded as it moved through the thick crown of the tree.

Twenty-four nests for which height was recorded averaged 2.12 ± .16 m. They ranged from .9 to 4.57 m, but half were in the relatively narrow range between 1.5 and 1.9 m. In 19 instances the kind of tree in which the nest was built was noted; five were in elms (*Ulmus americana*), four in crabapples (*Malus ioensis*), three in red haws (*Crataegus mollis*), two each in osage orange (*Maclura pomifera*) and walnut (*Juglans nigra*), and one each in dogwood (*Cornus drummondii*), black willow (*Salix nigra*), and Kentucky coffee tree (*Gymnocladus dioica*). Typically the nest is in a crotch of twigs 3 to 10 mm in diameter, with added support and concealment from vines such as grape, bittersweet, or poison ivy, forming a dense tangle.

The nests themselves were small and flimsy, so loosely constructed that in some instances the eggs could be seen from below. The saucer-shaped nest usually contained a relatively compact layer of decayed leaves. This compact layer averaged 8.5 × 7.5 cm. Two nests had looser linings of honey locust leaves. The nests contained twigs as much as 23 cm long. Nests were 4.5–6 cm deep. Many of the nests were composed at least partly of thorny twigs such as honey locust and osage orange, and often the twigs were forked. Four of eleven nests contained shreds of bark as part of the lining. Nest lining also occasionally included fine grass, rootlets, vine tendrils, downy feathers, and thread. In ten nests dissected, the 107 twigs had a mean length of 10.01 cm but the mean varied from 7.21 to 13.50 cm in different nests. Weights of twigs averaged .26 g (N = 400), and twig diameter average 2.02 mm (N = 539).

Ten eggs in 3 nests were weighed a total of 43 times on different days, from one to seven days before hatching. Mean egg weight was 8.54 ± .37 g and for individual eggs, mean weight ranged from 9.6 to 6.7 g. Eggs were weighed in the field with an Oskar Ludi spring scale, to .01 g, but with a variable margin of error, depending on the amount of wind. On the average each egg lost .10 g per day, about .7 per cent of its weight.

<table>
<thead>
<tr>
<th>Table 1. Growth of Young Yellow-billed Cuckoos, University of Kansas Natural History Reservation.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Day from Hatching</td>
</tr>
<tr>
<td>1st</td>
</tr>
<tr>
<td>2nd</td>
</tr>
<tr>
<td>3rd</td>
</tr>
<tr>
<td>4th</td>
</tr>
<tr>
<td>5th</td>
</tr>
<tr>
<td>6th</td>
</tr>
</tbody>
</table>

1 All measurements in mm.
Table 1, presenting mean measurements and weights for young of known ages, reflects growth in nestlings during the first five days. These young were members of four different broods. Seeming irregularities in growth result from the fact that each sample is based on a different combination of individuals. For the first five days each mean is based on four to seven records, and for the sixth day there were three. A few measurements, believed to be inaccurate, were discarded. Phenomenally rapid early growth is shown; only three days after hatching, the nestling is near attaining the bulk of the adult. In the only nest known to have succeeded, one of the four eggs was hatching on 14 July, 1953, and another egg had hatched the following day. The nest was not revisited until 23 July, and was then empty, but a bob-tailed fledgling was on a twig beside it. The nestlings in three nests that we measured on their sixth day had not begun to feather out but had elongate quills. Bent (1940: 59) quoting Cordier, described a young Yellow-billed Cuckoo having sheathed feather quills as much as two inches long, by its eighth day, and it feathered out completely within only six hours.

At several nests we spent many hours observing, sometimes from blinds, in order to learn as much as possible about parental care, and food used by the nestlings. In most instances the adults were too wary to return while an observer was present and no significant observations were made. At one nest at the Reservation headquarters, adults were much less wary, and carried on normal activities while a person sat motionless about 3 m from the nest. Best data were obtained on 14 June, 1972, between 10:15 a.m. and noon, 12:45 p.m. and 3:30 p.m., and 3:55 and 4:30 p.m. During the five hours and five minutes of observation the adults brought food nine times (none was brought from 10:15 to noon), and the young were brooded almost continually. Intervals between trips varied from 4 to 20 minutes. The usual procedure was for the adult bringing food to replace its mate at the nest (seven instances), but in one instance the adult that brought food left on a second successive trip. In most instances the food items delivered appeared to be large, green, smooth-skinned caterpillars, perhaps larvae of the hackberry butterfly (Asterocampa celtis), which were exceedingly abundant in the area then.

In all but one instance the nests that we found were robbed before fledging, or were destroyed. One nest blew down in a storm with high wind. One in a roadside thicket was destroyed by a passing machine. All others apparently were robbed by predators but the actual robbing was never observed. The fox squirrel (Sciurus niger), Blue Jay (Cyanocitta cristata), and black rat snake (Elaphe obsoleta) were found robbing nests of other bird species on many occasions, and collectively were believed to be responsible for most of the predation on eggs and nestlings of cuckoos. Doubtless several other kinds of snakes, mammals, and raptors were involved. The Broad-winged Hawk (Buteo platypterus) is the only species for which we obtained definite evidence. Nests of the hawks were under observation in 1954, 1957 and 1958, and young cuckoos were among the prey items brought to each hawk nest. A total of 138 prey items of the hawks included six cuckoos, and the cuckoo was eighth in frequency among the 28 prey species.

On several occasions, fragments of eggshell, stained with yolk, were found in or beneath the nests that were robbed, and in these cases the Blue Jay was suspected, but when all the eggs and/or young in a nest disappeared without trace, the rat snake was suspected. Sometimes the eggs or young were not all taken at once but disappeared over a period of days. Presumably the same individual predator returned for several meals. Once a nest having four young on one day, was empty on the next, but the largest nestling was still alive, lying in mud beneath the nest. Its head had been injured and its skull was exposed. The investigator returned it to the nest, but on the following day it too had been taken.

**Literature Cited**

Winter record of the King Rail at Cheyenne Bottoms.—I observed a single King Rail (*Rallus elegans*) in a roadside ditch behind Pool 2 at the Cheyenne Bottoms WMA, 7 miles north and 3½ miles east of Great Bend, Barton County, Kansas on 10 February 1973. The observation was made at 15:00 hours with the temperature around 25°F; night-time temperatures had been as low as 5°F. Water in the area was completely frozen except for a few open pools in a highly saline area.

I approached to within three feet of the bird and then captured it with little difficulty. During the banding process the bird regurgitated the exoskeleton of a crayfish (*Procambarus* sp.) and a partially digested Bluegill (*Lepomis macrochirus*). The rail was released after weighing and banding but five days later was found dead in the same area. The specimen (a male, FHKSC 2662) is now in the Fort Hays Kansas State College Collection. It weighed 200 grams at time of banding—some 100 grams below normal summer weights of male King Rails weighed at Cheyenne Bottoms during the summer (Marvin Kraft, personal communication).

The earliest reported return date for King Rail at Cheyenne Bottoms is 21 March; the fall departure date is unknown. I had previously flushed a King Rail from behind Pool 3 on 15 December 1965. Johnston (A directory to the birds of Kansas, Univ. Kans. Mus. Nat. Hist., Misc. Publ., 41:20, 1965) considered it a rare winter resident in marshes. He gave spring arrival dates of 7 to 28 April and lists the departure dates as unknown (September ?–December ?). According to Meanley (Natural history of the King Rail, North Amer. Fauna; 67:95, 1969) there are numerous winter records in the middle and northern latitudes. Since King Rails are even more secretive in winter than in summer it would be very difficult to determine if this is true. King Rails may very well winter at Cheyenne Bottoms during mild winters such as 1971–72. EDMUND F. MARTINEZ, 5851 Hemlock, Great Bend, Kansas 67530.

Kansas Roadrunner in January.—While the Roadrunner (*Geococcyx californianus*) has been infrequently reported from southeastern Kansas in recent years, this January report seems noteworthy. On the morning of 8 January 1973, Dennis Wilbert saw a strange bird floundering in deep, soft snow about two miles west of Brazilton in northwestern Crawford County. The temperature at the time was in the lower teens. He chased the bird, made a diving catch, and brought it to me, alive and unharmed, for identification. He had already suspected it was a Roadrunner but was not convinced.

The bird was alert and with a good appearance except for being thin and somewhat weak. We attempted to keep the bird alive during the period of deep snow and cold for subsequent release when the weather moderated. Unfortunately, no suitable food could be found and the bird soon died. Mr. Wilbert is mounting the bird for his own collection.

Another Roadrunner was reported on the northeastern edge of Pittsburg intermittently during the first half of February. THEODORE M. SPERRY, Kansas State College, Pittsburg, Kansas 66762.
North American Nest-record Card Program:

KOS members are once again asked to participate in this nationwide program. Last year, numerous members contributed, and at least four members provided over 125 nest cards each. This year the program is especially interested in calculating country-wide nesting success for the Robin, Eastern Bluebird, Eastern Phoebe, Redwing and Barn and Tree Swallows. Cards for nests visited on several occasions are most valuable. Nest cards may be obtained from either of the Kansas regional centers (Robert Mengel, KU, Lawrence or Charles Ely, FHKSC, Hays) or directly from the Laboratory of Ornithology, Cornell University, Ithaca, N. Y. 14850. All cards sent to the Hays center are duplicated for a Kansas file before being forwarded to Cornell University.

"Birds of Kansas":

At the 25th annual meeting, Max Thompson and Charles Ely described plans for a Kansas bird book to be published by the University Press of Kansas in the near future. Its expected format will be similar to "Birds of Maryland and the District of Columbia" by Stewart and Robbins. The success of this venture will depend in large part on contributions by KOS members. Most needed, at present, are positive nesting records and observations of both common and uncommon species from various localities in the state. Specific problem areas needing special work (e.g., breeding range of Tufted Titmouse) will be circulated with future Newsletters. KOS members are urged to record their observations and to loan them to either Thompson (Southwestern College, Winfield) or Ely (FHKSC, Hays). Your sighting may be just what they need to fill a distributional gap. Any royalties (after basic expenses) will be placed in a K. O. S. Publication Fund for future publications by the Society.