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A COMPARISON OF THREE HERONRIES IN THE MISSISSIPPI VALLEY

By Earl L. Hanebrink

Published accounts of heronries in the Mississippi Valley include three locations within a relatively short distance from each other, south of Cairo, Ill. Elder (1951) and Peterson (1965) described one near Sikeston, Missouri. Ganier (1960) reported on another at Dyersburg, Tennessee and a heronry near Luxora, Arkansas was introduced into the literature by Hanebrink and Cochran (1966). It is the purpose of this paper to compare these three heronries as to the numbers of breeding birds, species composition and habitat types.

Possibly the largest nesting colony of the Little Blue Heron (*Florida caerulea*) along the Mississippi River is the heronry located near Luxora, Arkansas. This heronry is located in Mississippi County, Arkansas, three miles northwest of the Missisippi River and seven miles northeast of Luxora on Arkansas Highway #120. During the past four years (1964-67) the writer had the opportunity to study the nesting and species composition at this heronry.

The heronry is located in an eight acre strip of woods which is roughly rectangular in shape with its long axis running east and west. The area is completely surrounded by cultivated fields and has no standing water within the wooded area itself. This makes the heronry somewhat unique since most heronries have some water standing during the nesting season. The location is in the Mississippi delta which is low, flat, fertile land that is drained by several man-made ditches. The surrounding area is almost entirely devoted to row or cereal crops. Therefore, there are few trees except those found along borders and along the Mississippi levee. Major commercial crops are cotton, soybeans, wheat, and rice.

Estimated numbers of breeding birds for the Luxora heronry were determined by marking the eight acre woods into strips so that a total count of nests could be obtained. This method was used by Ganier (1960) in determining numbers of herons and egrets at the Dyersburg heronry. The number obtained was doubled to derive the total number of breeding birds in the heronry.

Species composition in the Luxora heronry includes the Little Blue Heron (*Florida caerulea*), Common Egret (*Casmerodius albus*), Cattle Egret (*Bubulcus ibis*), Glossy Ibis (*Plegadis falcinellus*), and the Black-crowned Night Her-

TABLE 1

Estimated Number of Breeding Birds Using The Heronry at Luxora, Arkansas

1967

Species	*Number*
Little Blue Heron (*Florida caerulea*)	3008
Common Egret (*Casmerodius albus*)	140
Common Grackle (*Quiscalus quiscula*)	74
Cattle Egret (*Bubulcus ibis*)	50
Mourning Dove (*Zenaidura macroura*)	32
Baltimore Oriole (*Icterus galbula*)	6
Black-crowned Night Heron (*Nycticorax nycticorax*)	2
Indigo Bunting (*Passerina cyanea*)	2
Cardinal (*Richmondena cardinalis*)	2
Glossy Ibis (*Plegadis falcinellus*)	1
Ave. Per Acre 414.7 Total	3317

on (*Nycticorax nycticorax*). Estimated numbers of breeding birds using the heronry are summarized in Table 1. According to local farmers the heronry has been active for approximately 15 years. Numbers seem to be on the increase. This is especially true for the Cattle Egret. An overflow from this heronry appeared for the first time during the 1967 breeding season. A dozen pairs of Little Blue Herons nested in a triangular three acre woods approximately three miles northwest of the heronry. Other recent colonies are being established in the Reelfoot Lake area in Tennessee (Ben Coffey, personal communications).

It was in the Luxora heronry that the first nesting record in the state occurred for the Glossy Ibis (*Plegadis falcinellus*) (Hanebrink and Cochran, 1966). During the breeding season of 1965 three pairs were observed nesting. One specimen, a female was taken and is now placed in the Arkansas State University Museum (ASUM # 40, female). Two pairs nested successfully during the 1965 breeding season. Mr. Ben Coffey checked on the progress of the Glossy Ibis during the latter part of the breeding season and also reported the first nesting of the Cattle Egret. At this time only a few pairs nested. The 1966 breeding season had two pairs of Glossy Ibises nesting. During the 1967 breeding season the Glossy Ibis did not nest but on two different days a single Glossy Ibis was seen in the heronry.

At the Luxora heronry nest building of the Little Blue Heron begins during the first week in April and by 17 April, the majority of the Little Blue's nests contained eggs. By 20 May, young appeared in the nest; but approximately

half of the nests have eggs at various stages of incubation. Most of the eggs have hatched by early June. No eggs were observed in nests after mid-July. The Little Blue Heron starts the nesting season earlier than the other herons and egrets. The Cattle Egret and Common Egret are approximately three weeks later in their nesting. There is little mixing of the sepcies. Usually the Common Egret nests were higher in the larger trees. Cattle Egrets nest together and are clustered in only a few trees. The Glossy Ibis were among entangled grape vines at the extreme west end and at the tops of the smaller trees. Little Blue Herons nested in the same trees as the Glossy Ibis. The Little Blue Heron nests range from five feet above the ground to those which are found in the tops of the trees. The smaller trees were preferred as nesting sites by the Little Blue Herons. These trees were found in the western portion of the heronry. Many of the Little Blue Heron nests were found among the thorns of the Honey Locust (*Gleditsia triacanthos*).

Many young are raised at this heronry each year. The mortality rate is not high. Heavy rains and winds during early May and June often cause some egg losses and mortality of the newly hatched herons. There is very little evidence of predator destruction in the heronry. Occasionally a few herons and egrets are destroyed by shooting, although this is not a serious problem. During the latter part of July, the mortality rate is increased among the half grown. Apparently these birds leave or fall from the nest and starve. Several are found on the ground at this time which appear weak and unable to fly. There are local reports of some young flying to nearby farm yards and fields, later unable to fly back because of a weak condition. These die of starvation. Perhaps some of the adults quit feeding their young before they are able to care for themselves. Apparently those that fall from the nests are not fed by the adults and perhaps are not missed.

Adult birds feed on what is available throughout the nesting season. During the early part of the breeding season a higher percentage of Crayfish (*Cambarus* spp.) and tadpoles appeared in the regurgitated pellets. At that time there was water in the nearby drainage ditches located at the edges of the nearby fields. Crayfish and tadpoles were found to be abundant in these drainage ditches. Later as these ditches dry up a higher percentage of small fish appear in the regurgitated pellets. By this time the adult birds feed extensively at the Mississippi "barrow pits" and "sloughs." During August, shad, minnows, and small sunfish make up the bulk of the food. Insects are obtained also from the nearby rice fields. Stomach contents of a female Glossy Ibis collected on 1 June 1965, revealed that it had been feeding on tiny clams (Hanebrink and Cochran, 1966).

Cattle Egrets and Common Egrets travel some distance from the heronry in search for food. These birds along with the Little Blue Heron were observed along levees in rice fields throughout the county. The Common Egrets are usually found single in their feeding territories at the Mississippi "sloughs" and "barrow pits." The Little Blue Heron is often found congregated in larger numbers in these areas.

In comparing these three heronries the numbers of breeding pairs are about the same and the nesting areas are somewhat of the same size and near the Mississippi River. The "sloughs" and "barrow pits" along the Mississippi River

TABLE 2

A COMPARISON OF THREE HERONIES IN THE MISSISSIPPI VALLEY

	Luxora Heronry	Sikeston Heronry	Dyersburg Heronry
Estimated number of breeding birds	3,119	2,000- 2,400	1,600
Most abundant nesting species	1. Little Blue Heron 2. Common Egret 3. Cattle Egret	1. Little Blue Heron 2. Common Egret 3. Black-crowned Night Heron	1. Little Blue Heron 2. Common Egret 3. Black-crowned Night Heron
Canopy	Mixed lowland deciduous woods	Pine Grove (Pinus echinata)	Mixed lowland deciduous woods
Distance from Mississippi River	3 miles	8 miles	25 miles
Ground Habitat	Dry deciduous woods	Dry pine grove	Water standing in spring
Number of years in existence	15	10	13
Approximate arrival date for breeding birds	1 April	1 April	1 April

serve as major feeding grounds. The arrival date is the same for each of the heronries. Comparisons are shown in Table 2.

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A NESTING STUDY OF THE KING RAIL AND LEAST BITTERN

By Jon E. DeVore

THE AREA

The area in which this study was conducted is known as the Amnicola Marsh. This area is a natural fresh water impoundment lying 3.2 air miles due southeast of Chickamauga Dam and adjacent to the Amnicola Highway. It is approximately 30.0 acres in size, which includes all the area within the present fence boundary (See Figure 1). The water level is maintained by one, possibly more, springs which are located in the center of the open water at the northwest end of the marsh. The marsh also acts as the headwaters of Citico Creek, which has its origin here and empties into the Tennessee River after traveling 3.4 miles.

The marsh had its beginnings some 15 to 20 years ago as a small spring pool with a drainage creek flowing away from it. As years passed the surrounding low areas were slowly inundated. The ground was loosened, raised, and vegetation changes began to take place. The typical meadow grasses and weeds were slowly replaced by rushes and cattails. Every time there was a heavy rain a little more of the surrounding land was incorporated into the marsh. The continual standing of water and the occasional "floods" have produced the marsh as it now exists. The average water depth, exclusive of the open water, is 18 inches. The average depth of the open water is approximately 36 inches.

For convenience of this study, I have chosen to divide the shallow water area into two large, general vegetation types, *dense* vegetation areas and *thin* vegetation areas. The dominant plant of the dense vegetation areas is the Great Bulrush (*Scirpus validus*). This plant makes up 90% or more of this area and, as will be noted later, is the plant in which most of the nests were located. The dominant plant, 75% approximately, of the thin vegetation areas is the Pondweed (*Potamogeton epihydrus*). Other species of plants which make up appreciable parts of the vegetation are: Cattail (*Typha latifolia*), Water Plantain (*Alisma subcordatum*), Beak-rush (*Rhynchospora corniculata*), Buttonbush (*Cephalanthus occidentalis*), Rose Mallow (*Hibiscus Moscheutos*), several species of sedge (*Carex* sp.), Duckweed (*Spirodela polyrhiza*), and the two Spike Rushes (*Eleocharis compressa* and *E. quadrangulata*). During the period from early May to late September, the pond at the northwest corner of the marsh is covered with a profuse growth of the Lotus Lily (*Nelumbo lutea*). Also located within the center of the pond are three very poor specimens of the Willow Tree (*Salix babylonica*). These trees are no more than ten feet high and contain many dead and decaying branches. All three are located on what remains of a small mound. At present these are the only trees within the water area of the marsh.

Like the plant life, the animal life, too, is varied. In the three years which this writer has kept records on the marsh, 99 species of birds have been recorded as occuring there at various times of the year. Noteworthy among

Figure 1. Drawing of Amnicola Marsh as adapted from personal measurements and maps by the United States Geologic Survey.

these have been the first Chattanooga area records for the following species: Cattle Egret (*Bubulcus ibis*), Louisiana Heron (*Hydranassa tricolor*), Glossy Ibis (*Plegadis falcinellus*), Virginia Rail (*Rallus limicola*), Purple Gallinule (*Porphyrula martinica*) and the Willet (*Catoptrophorus semipalmatus*). Insect life is, of course, abundant. One very noticeable thing concerning the insect life however is the almost total absence of mosquitos. This is due, I believe, to the great numbers of the Mosquitofish (*Gambusia affinis*) which are found everywhere in the marsh. Other fish which have been taken from the area are the Bluegill (*Lepomis machrochirus*) and the Largemouth Bass (*Huro salmoides*). Around the perimeter of the water area may be seen at various times the following rodents: the House Mouse (*Mus musculus*), Norway or House Rat (*Rattus norvegicus*), and the Cottontail Rabbit (*Sylvilagus* sp.). Within the water area can be found still another rodent, the Muskrat (*Ondatra* sp.). Three large "lodges" are located around the pond and the animals can be observed at times apparently sunning themselves in the late afternoon. There is good evidence now to indicate that the marsh has become the home of one or more Mink (*Mustella vison*). This will be discussed later under the Least Bittern data. In my trips to the marsh, only one species of snake has been encountered, it appearing to be a Water Snake (*Natrix* sp.). Amphibians present are: Bull Frog (*Rana catesbeiana*), Grass Frog (*Rana pipiens*), Fowler's Toad (*Bufo fowleri*) American Toad (*Bufo americanus*), Spadefoot Toad (*Scaphiopus holbrookii*), and unidentified species of the small Tree Frogs (*Hyla* sp.). Along the fences which form the boundary of the marsh can be found the Eastern Five-lined Skink (*Eumeces fasciatus*), and the Eastern Fence Lizard (*Sceloporus undulatus*). Four species of turtles have been seen within the marsh: Common Snapping Turtle (*Chelydra serpentina*), Slider (*Pseudemys* sp.), Painted Turtle (*Chrysemys picta*), and the Spiny Soft-shelled Turtle (*Trionyx ferox*).

KING RAIL DATA

Physical aspects of the nests: During the period covered by this study, 22 May to 30 July, 1967, five active nests of the King Rail (*Rallus elegans*) were located within the boundaries of the marsh. At each of the nests certain physical characteristics were checked, these being: the diameter of the nest, the materials used in its construction, its height above the water level, and the type of plant in which the nest was located. The diameter of each nest, in inches, was taken at its widest points at the top of the rim of the nest. The five nests had an average diameter of 8.0 inches, with the smallest diameter noted being 7.5 inches and the largest 8.5 inches. Each of the nests was examined as closely as possible so as to ascertain what materials were used in its construction. The following percentages were noted after combining the notes on each nest: 85% of all nest material was Great Bulrush, 5% was Sedge, 5% was Water Plantain, and 5% was Pondweed. In all the nests the Great Bulrush formed the bulk of the nest, with the Sedge, Water Plantain, and Pondweed being incorporated into the top outer edges of the nests. Each nest's height above the water level was measured to its highest point along the top rim of the nest. The five nests averaged 3.6 inches above the water level, with the lowest height noted being 2.5 inches and the highest 5 inches. The nest 2.5 inches above the water and another, 3 inches, were both low enough to get "drowned out" by heavy rains

on 7, 8, 9 July, which raised the water level two inches. Certainly, even building the nest one-half inch too low can prove disastrous to this species, especially if nesting in an area of frequent rains where the drainage is poor. All five of the nests were located in large specimens of the Great Bulrush. This is the only plant within the marsh which would provide sturdy enough a base for the rather large nest. After the nest is complete the tops of the bulrush plant are bent over by the bird to form a camouflage canopy from 8 to 10 inches above the nest, with only enough room left for the adult bird to move in or out.

Nesting activity and results: A total of 44 eggs were laid at the five nests, giving an average of 8.8 eggs per nest. Of this number only 8 hatched, giving a 18.1% hatch success. The following list of the five nests gives, in parenthesis, first, the date the nest was first located, second, the number of eggs laid at that nest, and third, the number of eggs hatched. The nest numbers refer to the nests as located on Figure 1. Nest 1 (5 June: 10-8), Nest 2 (4 July: 7-0), Nest 3 (4 July: 7-0), Nest 4 (4 July: 8-0), and Nest 5 (5 June: 12-0). The eggs at Nests 2 and 5 were apparently abandoned, for the adult birds did not return to the nests after the second checks and the eggs remained intact through the end of the study. The eggs at nests number 3 and 4 were ruined when high water invaded the nests as a result of the heavy rains on 7, 8, 9 July. Nests 1 and 5 were probably first nests of the season, as the nesting period for this species usually begins about mid-May in this area. The other three nests, all found in early July, are probably second attempts. On the following dates adult birds and young were observed around the marsh: 2 July (4 adults-3 young), 3 July (5 adults-3 young), 8 July (3 adults-3 young), 9 July (4 adults-5 young), 13 July (3 adults-4 young), 15 July (3 adults-4 young), 16 July (3 adults-1 young), and 22 July (1 adult-3 young). Generally the young birds stayed close to only one of the adults and may well have been the young brought off at Nest 1. Of interest was the different behavior patterns displayed by the adult birds when disturbed at their nests. The adult bird at Nest 1 was most vociferous and fearless in its nest defense. On the first two checks at this nest, 5 June and 12 June, when first flushed from the nest the bird would retreat a safe distance, usually about fifteen feet, and then begin its calling. The calling would persist for several seconds then the bird would appear at some conspicuous place dragging its wings and generally putting on a spectacular display for such a secretive species. As incubation advanced, about 13 to 19 June, the bird became even bolder. Instead of circling away, the bird would come within three to five feet, almost allowing itself to be picked up. At this time the bird showed little fear, her only interest apparently being in returning to the eggs. In direct contrast, the adults at the other four nests never did more than give several calls from the surrounding vegetation when the nests were approached. They never once made themselves visible, preferring to remain within the cover of the dense vegetation. As mentioned previously, it appears Nests 2 and 5 were abandoned. This was due, I believe, to my presence at the nests. Both clutches were complete and incubation had begun, but after my second checks at the nests the adult birds were not seen again at them. It would be well for persons checking nests of this species to limit the number of visits during the laying period and early incubation.

LEAST BITTERN DATA

Physical aspects of the nests: A total of eighteen active nests of the Least Bittern (*Ixobrychus exilis*) were located within the marsh during this study. The same physical characteristics noted at the King Rail nests were also checked at the Least Bittern nests. The eighteen nests had an average diameter of 5.3 inches, with the smallest diameter noted being 4.0 inches and the largest, Nest 6, a rather extreme 8.5 inches in diameter. Of the plant material used in construction of the nests, 98% was Great Bulrush, 1% was Spikerush, and 1% was Pondweed. The Spikerush and Pondweed were found in only five of the nests, being incorporated into the top rim of the nest. The nests averaged 18.2 inches above the water level, with the lowest nest only 8.0 inches above the water and the highest 27.0 inches. As can be seen, the height at which the Least Bittern will build its nest is variable within two to three feet. Probably the birds will utilize the lowest to the highest points possible in the marsh plants in which they nest. The type of plant chosen must be sturdy enough to support the rather frail nest, which more appropriately could be called a platform. In our area the Bulrush is such a plant and, with one exception, was the plant in which all the nests were located. Nest number 18 was in a Great Bulrush plant which was partially ingrown with a Cattail, the nest being attached to both.

Nesting activity and results: A total of 63 eggs were laid at the eighteen nests, giving an average of 3.5 eggs per nest. Of the 63 eggs laid, only 23 hatched, giving a 36.3% hatch success. The following list of the nests gives, in parenthesis, the date at which the nest was first located, the number of eggs laid, and the number of eggs hatched. The nest numbers refer to the nest location as given on Figure 1. Nest 1 (12 June: 3-0), Nest 2 (22 May: 5-4), Nest 3 (12 June: 4-0), Nest 4 (5 June: 5-0), Nest 5 (3 July: 2-0), Nest 6 (3 July: 1-1), Nest 7 (14 July: 4-0), Nest 8 (5 June: 5-5), Nest 9 (3 July: 2-0), Nest 10 (3 July 4-4), Nest 11 (5 June: 5-4), Nest 12 (12 June: 1-0), Nest 13 (5 June: 5-0), Nest 14 (13 June: 4-1), Nest 15 (30 May: 5-0), Nest 16 (5 June: 4-4), Nest 17 (12 June: 2-0), and Nest 18 (22 July: 2-0). Nests 9, 12, and 17 were apparently abandoned, for adult birds were not seen at the nests after the first check and the eggs remained in the nests for the duration of the study. At the other nests where eggs were not hatched there was definite depredation which destroyed the nestings. Nests 1, 4, 7, 13, and 15 all disappeared without a trace. Careful searches at these nest sites failed to reveal any evidence of the nest, eggs, young birds, or adults. At Nests 3, 5, and 18 the eggs were destroyed, with the eggs being broken and the contents gone. Also, at Nest 18 the adult bird was killed and partially eaten. On two occasions, 13 June and 3 July, one adult and two young birds were found dead and partially eaten. The Mink is the only animal which could be expected to occur in the marsh which would have the ability not only to take eggs and young birds, but also uninjured adults. It may well be that the Mink, or Minks, were drawn to the marsh in search of the Muskrats which now live there and took the Least Bitterns only as an easier source or additional source of food. The nests located in late May and early June are probably first nestings of the season, while those found in late June and July being second attempts. This species is most secretive around its nest and when approached at the nest will sneak off through the vegetation and takes wing only when some distance away. No distraction display of any type was noted, even at nests which con-

tained newly hatched young. The young birds, even during their first day, show a marked indifference to any intrusion around the nest. The ability to assume the "broken reed" stance is apparently also present at an early age. Even before they are able to leave the nest the young, when approached in the nest, will move to the edge next to the supporting plant and assume the motionless stance with bill pointed skyward. After the young leave the nest they become almost impossible to find in the vegetation.

SUMMARY

From 22 May to 30 July 1967, nesting studies on the King Rail and Least Bittern were carried out at the Amnicola Marsh near Chattanooga, Tennessee. A total of five King Rail and eighteen Least Bittern nests were located. Physical aspects noted of each nest were: the diameter of the nest, the material used in its construction, its height above the water level, and the type of plant in which the nest was located.

A total of forty-five King Rail eggs were laid at the five nests during the study, with eight being hatched. This represents an 18.1% hatch success. Too close checking procedures at the nests is suggested as a possible reason for abandonment of them, especially if the birds are in the early stages of incubation. Display behavior of adult birds around the nests is also discussed.

A total of sixty-three Least Bittern eggs were laid at the eighteen nests, with twenty-three being hatched. This represents a 36.3% hatch success. Depredation occured at several of the nests during the study, with eggs, young, and adult birds being taken. It is hypothesized that one, or more, mink is the predator responsible. Display behavior and the "broken reed" stance of the young are discussed.

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Grateful thanks are extended to Dr. Robert G. Litchford of the Biology Department of the University of Chattanooga for his review of the work and to Mr. Kenneth Dubke for his ever-present encouragement and many suggestions.

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NOTICE OF DUES CHANGE

Effective 1 January 1969, changes in classes of dues as listed will be as follows: annual dues, $3.00; libraries and subscribers, $3.00; family membership, $4.00.

ROUND TABLE NOTES

HERONRY AT DYERSBURG STILL ACTIVE—The heronry just northeast of Dyersburg, Tennessee on Highway 51 is still active. This heronry was mentioned in an article by Albert Ganier (The Migrant 31:48-49) and by Mrs. Ben Coffey (The Migrant 35:54).

According to Mrs. John Lamb this heronry dates back to the early 1940's. At that time the area was swampy and somewhat remote. Over the years it has grown in size. It reached its population peak in the summer of 1965. Mrs. Coffey states that during her visits in 1964 there were an estimated 2,500 nests in the area. About three fourths of these were of the Little Blue Heron (*Florida caerulea*). Except for the nests of eight Cattle Egrets (*Bubulcus ibis*) the rest of the nests were of Common Egrets (*Casmerodius albus*). In the spring of 1966, the trees in the heronry were cut. The surrounding area had been developed as a subdivision and the residents did not like the birds nesting so close. When the birds returned they made a new, but smaller, heronry about 200 yards east of the old site and within 100 yards of the new Sylvania plant.

There are about 500 nests in the heronry this year. About ninety percent are of the Little Blue Herron. The remainder of the nests are of the Common Egret and the Cattle Egret. I have seen a few Black-crowned Night Herons (*Nycticorax nycticorax*) in the heronry, but I do not believe that they are nesting there. Yellow-crowned Night Herons (*Nyctanassa violacea*) are fairly common in the Dyersburg area, but I have never seen any at the heronry. Because of its easy accessibility, anyone who is in the Dyersburg area should be sure to see this heronry.

KENNETH LEGGETT, RFD 1, Dyersburg 38024.

TREE SWALLOWS NESTING IN EAST TENNESSEE—In 1967 on Breeding Bird Survey, Route T-31 Elk Valley, Mr. James H. Burbank reported nesting Tree Swallows (*Iridoprocne bicolor*) at Stops 49 and 50. I questioned him on the identification and though I had never seen Tree Swallows, his description satisfied me. In August 1967, I saw Tree Swallows resting on a snag of a dead limb protruding above the water in Cove Lake.

MALE TREE SWALLOW AT NEST

On 14 May 1968, Tree Swallows were found occupying two bluebird boxes erected by Ben D. Jaco in the area below Norris Dam, Anderson County, Tennessee, three miles from the town of Norris.

Mr. Jaco checked all the bluebird boxes on 24 April 1968, and found no nests, but on 29 April found Tree Swallows in possession of two boxes. On 30 April, eggs were found in Box #1—he made no count of the eggs but on 14 May, I counted 6 nestlings in Box #1. These 6 nestlings left Box #1 on 1 June 1968.

On 31 May 1968, parent birds ap-

peared to be feeding nestlings in Box #2. On 3 June 1968, I counted 4 nestlings in Box #2. I was out of town 5 June through 13 June. During my absence these 4 nestlings left Box #2, apparently, successfully as no evidence of any vandalism or tragedy could be found.

Boxes used are not more than four feet from the ground and in open sunny situations, about one-quarter mile from Clinch river. Both boxes are situated so that TVA maintenance crews mowed grass directly beneath and surrounding the boxes the entire time the birds occupied the nests. Box #1 was on a fence adjacent to a heavily traveled U.S. Highway and beside a stop sign—facing the traffic of the roadway. Box #2 is situated adjacent to an extensive planting of mulberry trees. Large open fields between nesting boxes and the river afford feeding on insects.

This writer contacted Dr. James T. Tanner, James Campbell, J. B. Owen, Beth Wuest, and Julia Moore. I understand James Campbell visited the boxes several times and brought other members of Knoxville Chapter, TOS with him.

While incubation was in progress, each time I visited the boxes one Tree Swallow was perched on top of the box and an adult head protruded from the box opening. I assumed the perched bird to be the adult male and the protruding head to be the female bird.

On 25 June, upon opening Box #1, I saw 4 bluebird eggs. On 27 June, in company with Miss Julia Moore, Mrs. Douglas Tunsberg, and Mrs. Irene Wilcox, I again opened Box #1 and discovered five Tree Swallow eggs. I've no explanation for either the appearance or disappearance of the 4 bluebird eggs. 25 June was overcast so the eggs could not pick up color from a blue sky; also, bluebird eggs are somewhat larger than Tree Swallow eggs. The box had not been cleaned out following its use by Tree Swallows for a first nesting.

On 20 July, five nestlings of the second nesting in Box #1 left the nest. At 4 p.m., three nestlings were still in the box; parent birds and two young were coursing over low trees on a slight hillside opposite the nesting box. The third nestling left the box at 5:23 p.m.—flew downward and almost touched ground but gained a height of four feet to cross the paved road, gradually climbed in the air until it joined the others of its family. At 6:04 p.m. a fourth young left the nesting box repeating the performance of the third nestling. Occasionally one parent bird flew at me and made a most aggressive clicking noise as I stood beside my car parked some ten feet from the nesting box. The fifth nestling did not leave the nest while I remained in the vicinity. At 7 p.m. I moved my car on down the road a quarter mile distant, when I got out of the car and upon using my 8x40 binoculars I counted five immatures with parent birds flying low over the hillside.

On 21 July, no Tree Swallows were visible anywhere in the area below Norris Dam.

Three nestings in two bluebird boxes below Norris Dam this season successfully fledged 15 young.

The only other Tennessee record of nesting Tree Swallows was reported in The Migrant, 35:51 by Mr. Albert F. Ganier.

FRANCES B. OLSON, Norris 37828.

TREE SWALLOW NESTING IN MAURY COUNTY—On 3 June 1968, 1:30 p.m. at one of the Monsanto Chemical Company settling ponds four miles west of Columbia, Tenn., I observed an adult Tree Swallow (*Iridoprocne bicolor*) feeding an immature which was perched over the water on a dead snag approximately forty yards away. The adult was bright green above and the immature was a dull brown; both birds were white underneath with the throats being very clear which matches Peterson's description in *A Field Guide To the Birds:* "Steely blue-black or green-black above and *clear white* below;". The birds were observed for only three minutes during which time the young was fed twice. Neither bird showed any reaction to my presence, although I was in full view of both.

On 4 June, the Tree Swallows were observed for thirty-five minutes beginning at 10:45 a.m. The nest was located approximately twelve feet high in a hole in a dead tree standing in the water approximately twenty-five yards from the bank. The immature was not seen. Two adults were present, one with a green head sitting in the nesting hole and one flying, whose back was a metallic blue-black. The second bird made fourteen passes at me, coming as close as three feet away. At the time I was approximately one hundred yards away with a Bausch & Lomb (15X to 60X) Zoom Scope trained on the nest. The bird flying was observed with Leitz 10x40 binoculars.

On 5 June, at 1:00 p.m., the birds were observed by Dan R. Gray, Jr. who verified my identification. Two adults and an immature were observed flying and feeding over the water. The young entered the nest four times during the half hour of observation.

The site was checked for the last time on 18 June, when again two adults and an immature were reported. Three was the maximum number of birds seen on any trip, with no more than one immature ever observed. This appears to be the first mid-state summer record (i.e. after 24 May) for this species (*Birds of the Nashville Area,* Henry E. Parmer, p. 20). The only other nesting record for the state that I know of is 1918 at Reelfoot Lake (The Migrant, 35:51) by Ganier (personal communication with H. E. Parmer).

DAN R. GRAY, III, Wildwood Nature Camp, Barre, Mass.

HENSLOW'S SPARROW IN HARDIN COUNTY—On 6 April 1968, at about 4:00 p.m., Mr. and Mrs. Shardian Johnson of Chetek, Wisconsin, Mike Barber, Jerry Mathis, John Williams and I saw a Henslow's Sparrow (*Passerherbulus henslowii*) near Olive Hill, by the old Highway 64 bridge over Indian Creek. It flew up from underfoot as we were walking in a pasture, flew close to the ground for about ten yards, and hid in the short grass when it landed. We approached slowly until we were all about two yards from the bird, and it remained at that spot for about five minutes. The greenish or olive color of the crown and nape were very evident when viewed from above. It flew about three more times to other spots in the grass and then to a fence at the edge of a wooded area (mixed deciduous trees and shrubs, at this point mostly Hackberry, *Celtis occidentalis*). Here it still allowed us to approach closely. Each time it flew it went carefully along the edge of the brush, neither flying out over the grass nor retreating into the woods, and not once going much higher than our heads. Viewed from the front and below it showed a "necklace" of distinct streaks.

About 7:00 p.m. the next day I returned with Mike, Barry, and Alan Patterson. The bird was at the same place. We caught it by erecting mist nets around three sides of a brushy ditch and chasing it up the ditch into the nets.

It compared favorably with the descriptions and illustrations in Peterson *A Field Guide to the Birds*, Robbins *Birds of North America*, and Roberts *Birds of Minnesota*, with two exceptions: the *"necklace"* mentioned above does not show in Peterson's illustration, and the wings were pale or faded rufous instead of the *"bright rufous or chestnut"* of Roberts. The wing chord measurement was 55 mm.

While we were handling the bird it twice made a sound very similar to the song of Henslow's Sparrow as recorded on Peterson *A Field Guide to Bird Songs* (Houghton Mifflin Company, Boston), which we played about one minute afterward. We heard no other sound from it at any time either day.

After photographing the bird we released it. It climbed steeply and rapidly until out of sight.

The weather both days was clear and warm, with little wind. All observers had 7x35 binoculars, almost superfluous at such close distances. All observers have some experience with sparrows, but none had ever previously examined a Henslow's Sparrow.

DAVID E. PATTERSON, Harbert Hills Academy, Olive Hill 38475.

DECEMBER NESTING OF THE CAROLINA WREN—On 3 January 1968, the writer, accompanied by Mr. Kenneth Dubke, examined a recently abandoned nest of the Carolina Wren (*Thryothorus ludovicianus*) in the open garage of Mr. H. C. Collie, 619 Colville Street, Chattanooga, Tennessee.

The writer was informed of the nest by Mr. Collie (telephone conversation), who stated that both the adult birds had been present until about one week previous. The nest, which was the typical ball-shape with small side entrance hole, was located some six feet off the ground in a large tin can fastened to the garage wall. Upon closer examination of the nest, two dead young birds and one egg were found. The young birds appeared to have been dead no more than one week, as their state of preservation was excellent in what was rather warm weather for this time of the year. Estimated age at the time of death of the two birds was three to four days. As no adult birds were seen by the writer or Mr. Dubke, it was decided to forward the one egg to the Curator, Mr. Albert Ganier, for positive identification. In a letter of 7 January 1968, Mr. Ganier says, "I have compared it (the egg) with several sets each of Carolina, Bewick's, and House Wrens. There is not the least doubt about the egg being that of a Carolina." Considering the nest had been abandoned seven to ten days and the fact that the normal incubation period is approximately thirteen days, it is estimated this egg was laid on or about 13 December 1967.

This very early nesting was most probably prompted by the unusually warm weather which prevailed in this area and across the state in the month of December. On several occasions the temperature here reached into the lower eighties, causing some shrubs to bloom prematurely.

JON E. DEVORE, 4922 Sarasota Drive, Hixson, 37343.

THE SEASON

CHARLES R. SMITH, *Editor*

The months of May, June, and July were not especially outstanding with respect to the weather. Temperatures for May ranged from two to three degrees lower than average for the state; precipitation was one to two inches above average for the West and Middle portions of the state, with the Eastern portion of the state receiving a normal amount. June was very similar to May, temperature-wise, with temperatures ranging from one to two degrees cooler than average across the state. Precipitation for June was normal in the Eastern part of the state; however, both Middle and West Tennessee averaged about one inch below the normal levels for June in those regions. Statewide weather data for July was not yet available from the Weather Bureau at the time of this article. Upper East Tennessee experienced normal temperatures for July; however the weather was very dry, with the precipitation level being about 2.5 inches below the normal level for the month.

Some interesting migration records for this period are as follows: Mourning Warbler from the Coastal Plain and also from the Ridge and Valley Region, Connecticut Warbler from the Ridge and Valley Region, late May records of the Yellow-bellied Flycatcher at Savannah and the Yellow-bellied Sapsucker at Johnson City, White-rumped Sandpiper at Chattanooga; the mid-July records of the Spotted Sandpiper from Savannah and Chattanooga probably indicate the beginning of fall migration for this species. Late spring records of the Cattle Egret in Nashville and Knoxville add to a growing list of records of this species in the state.

July records of the American Widgeon and Purple Gallinule from the Ridge and Valley Region are worthy of consideration. Both Black-crowned and Yellow-crowned Night Herons were noted nesting in the Ridge and Valley Region for this summer. The nesting of Tree Swallows at Norris Lake and their possible nesting at Columbia is also notable. There were also several records of nesting Song Sparrows from the eastern part of the Central Plateau and Basin Region. More detailed information concerning the above noted observations may be found under the regional reports which follow this introduction.

WESTERN COASTAL PLAIN REGION—*Herons-Vireos:* Great Blue Heron: 27 May (2) R, 5 July (1) S. Green Heron: present at only one of four usual Savannah locations. Least Bittern: 7 June (1) R. Sharp-shinned Hawk: 21 June (1) S. Cooper's Hawk: 27 July (1) S. Spotted Sandpiper: 30 May (1), 17 July (2) S. Least Tern: 27 May (1), 22 June (5) R. Yellow-

bellied Flycatcher: 23 May (1) (banded) S. Bank Swallow: 21 May, at least (2), probably 20 in mixed group of 1,000 Rough-winged, Barn, and Cliff Swallows, S; 27 July (5,000) R (EC). Bewick's Wren: 5 May (26), none in June or July, S. Short-billed Marsh Wren: 5 May (2). Gray-cheeked Thrush: 22 May (1) (banded) S. Yellow-throated Vireo: to 20 July (12).

Warblers: Prothonotary: (2)*. Worm-eating: (5)*. Blue-winged: (6)*. Cerulean: (1)*. Yellow-throated: (1)*. Pine: (6)*. Prairie: (8)*. Ovenbird: (5)*. Louisiana Waterthrush: (7)*. Kentucky Warbler: (7)*. Mourning Warbler: 5 May (1), 21 May (1) (banded) S. Yellowthroat: (52)*. Yellow-breasted Chat: (68)*. Hooded Warbler: (5)*. *20 June to 20 July, S.

Orioles-Sparrows: Baltimore Oriole: 21 June (15) R. Scarlet Tanager: 20 June to 21 July (8) all males, S. Blue Grosbeak: 20 June to 21 July (15) including 3 families with parents feeding young, S. Dickcissel: 22 June (25) R. Grasshopper Sparrow: 20 June to 18 July (2) S. White-crowned Sparrow: 18 May (1) S.

Locations: R-Reelfoot Lake, S-Savannah.

Observers: Eugene Cypert, David and Mike Patterson, John Williams.

DAVID E. PATTERSON, Harbert Hills Academy, Savannah 38372.

CENTRAL PLATEAU AND BASIN REGION—*Grebes-Sandpipers:* Pied-billed Grebe: 29 May (1) MP (DRG). Cattle Egret: 29 May (4) PB (MM), first Nashville record. Mallard: 28 May through 5 June, 3 females with broods of 6, 4, and 7, plus other pairs and singles, CT (DRG). Blue-winged Teal: 28 May Pair CT (DRG). Wood Duck: July approx. (50) young RL (MCW). Sparrow Hawk: very scarce Nashville area as were other hawks. Black-bellied Plover: 4, 5 June (1) CT (DG, DRG). Upland Plover: 4 to 7 May (1) WT (MCW). Spotted Sandpiper: 28 May (1) CT (DRG), 3 June (1) CC (KD). Least Sandpiper: 4 June (3), 18 June (5) CT (DRG). Semi-palmated Sandpiper: 3 June (15), 4 June (2), 18 June (3), CT (DRG), 3 June (17) CC (KD).

Terns-Warblers: Common Tern: 3 June (1) CT (DRG). Black-billed Cuckoo: 3 June (1) TC (KD). Red-cockaded Woodpecker: 10 May pair CWR (KD), female appeared to be brooding. Tree Swallow: 3 to 18 June, pair at nest hole; only one flying young positively identified, CT (DG, DRG). Bank Swallow: 28 May (4) to 4 June (6), then 5 June (1), CT (DRG) by far latest for middle Tenn. Purple Martin: 21 July (1100) CK (RTH). House Wren: July (2) nests near H (KAG). Swainson's Thrush: 18 May (2) H (SB). Gray-checked Thrush: 19 May (1) H (KAG). Veery: 14 May (1) H (KAG). Ruby-crowned Kinglet: 5 May (1) H (KAG). Cedar Waxwing: 21 May (36) (EE), (37) (HCM). Tennessee Warbler: 22 May (1) H (SB). Magnolia Warbler: 18 May (1) H (HCM). Cape May Warbler: 22 May (1) H (SB). Myrtle Warbler: last 5 May (25) RL (MCW). Black-throated Green Warbler: this common migrant not reported during migration. Bay-breasted Warbler: 14 ay (2) H (SB). Blackpoll Warbler: 21 May (8) RL (MCW). Ovenbird: 17 June (1) LC (DRG). Wilson's Warbler: 21 May (1) H (HCM), 21, 22 May (1) CT (GRM).

Grosbeaks-Sparrows: Rose-breasted Grosbeak: 22 May (1) H (SB). Blue Grosbeak: 17 June (7) LC (DRG); resident pair Lillydale, CK (MW); resident pair at RL and H (FM), Nashville. White-crowned Sparrow: 21 May (1) H (HH). Song Sparrow: 3 June (2) TC (KD); 11 June (1) singing GP (KD); 14 June pair feeding young CK (MW); 21 June pair building nest MT (RTH); 13 July pair feeding young AT (RTH).

Locations: AT—Algood, CC—Coffey Co., CK—Cookeville, CT—Columbia, CWR—Catoosa Wildlife Refuge, GP—Goose Pond, Grundy Co., H—at home of observer, LC—Lewis Co., MT—Maryland, Tenn., MP—Mt. Pleasant, PB—Pennington Bend, Nashville, RL—Radnor Lake, TC—Tracy City, WT—Woodbury.

Observers: SB—Sue Bell, KD—Kenneth Dubke, EE—Erline Elmore, KAG—Katherine A. Goodpasture, DG—Dan R. Gray, Jr., DRG—Dan R. Gray, III, RTH—Roy T. Hinds, HH—Helen Hodgson, MM—Margaret Mann, GRM—George R. Mayfield, Jr., HCM—Harry C. Monk, FM—Fanny Murphy, MW—Marie White, MCW—Mary C. Wood.

HENRY E. PARMER, 3800 Richland Ave., Nashville 37205.

EASTERN RIDGE AND VALLEY REGION—*Loons-Ducks:* Common Loon: 6 May (1) WBL (KD). Pied-billed Grebe: 4-16 June (2 adults, 4-5 young) AM (KD), 29 July (2) CL (FO, BW, CMW). Great Blue Heron: present in small numbers through period and region, max. 30 July (14) HRA (KD). Little Blue Heron: 15 July (2) BL (MER). Cattle Egret: 5 May (11) K (GM, BMc, JMC, JTT, KOS), 13 May (1) HRA (KD, RB), 14 May (3) AM (KD, RB). Common Egret: 13 May (1) HRA (KD), 5, 18, 24 June (1) (KD), regular in July (KD). Black-crowned Night Heron: 6 July (approx. 8 adults, 8 immatures, 5 nests) C (ES). Yellow-crowned Night Heron: no dates reported (three known nests, one known successful, fledging two) AM (KD); 6 June (1) G (RN). Least Bittern: 4 May (1) K (JMC, RME), 10 May (1) K (BL); two unsuccessful nests, no date AM (KD); 16 June (1) AM (KD). American Bittern: 14 May (1) AM (KD, RB), 28 May (1) AM (KD). Canada Goose: through period (4) CL (FO); through period (4) HRA (KD). Mallard: 7 July (2) AM (KD), 13 July (2) AM (JD). Blue-winged Teal: 18 June (1) HRA (KD). American Widgeon: 7 May (1) AM (KD), 24 July (1 female) BL (MER, CRS). Ring-necked Duck: last 13 May (1) NL (KD, RB). Lesser Scaup: last 7 May (14) HRA (KD). Bufflehead: through period (1, injured) HRA (KD). Black Duck: 13 May (2) LHS (KD, RB).

Vultures-Snipes: Turkey Vulture: 13 July (1) Ma (JMC). Black Vulture: 13 May (2) LHS (KD, RB). Sharp-shinned Hawk: 5 May (1) CB (RB). Cooper's Hawk: 13 May (1) TRG (KD, RB). Red-tailed Hawk: no date, successfully nested, two young fledged HRA (KD). Broad-winged Hawk: 11 June (3 young in nest) TRG (KD), 16 June (2 adults around nest with fresh nest materials, no young or eggs seen) K (MG). Bald Eagle: through period (at least one adult and one immature) NOL (JCH). Osprey: 6 May (4 eggs, did not hatch) WBL (KD). King Rail: 4 May (1) G (RN), 4 June (2) AM (KD). Sora Rail: 4 May (1) K (JMC, RME), 4 May (1) G (RN). Purple Gallinule: 7 July (1) M (RS, RM, KG, EJ). American Coot: through 16 June (1) AM (KD), 29 July (1) CL (FO, BW, CMW). Semipalmated Plover: 25

May (1) K (FA, JMC, RME). Common Snipe: last Chattanooga area 7 May (1) AM (KD); last Knoxville area 18 May (1) K (JMC, FA).

Sandpipers-Cuckoos: Spotted Sandpiper: last Knoxville area 26 May (1) NOL (JMC); last Chattanooga area 15 June (1) NL (JD); first fall 15 July (1) AM (KD). Solitary Sandpiper: last spring, 26 May (1) K (FA); first fall 7 July (2) AM (KD). Greater Yellowlegs: last spring, 4 May (1) K (JMC, RME); first fall, 16 July (1) AM (KD). Lesser Yellowlegs: last spring 11 June (1) AM (KD); first fall, 30 July (4) HRA (KD). Pectoral Sandpiper: first fall 22 July (1) AM (KD). White-rumped Sandpiper: 9 June (9) AM, "the white rump was very conspicuous" (KD). Least Sandpiper: last 13 May (7) AM (KD, RB); first fall, 7 July (3) AM (KD). Semipalmated Sandpiper: last 7 May (7) AM (KD). Herring Gull: last 6 May (4) WBL (KD). Ring-billed Gull: last 6 May (2) WBL (KD), 6 May (1) K (FA). Caspian Tern: 30 July (1) HRA (KD). Black Tern: 31 July (1) SB (KD *et al.*). Black-billed Cuckoo: 4 May (1) K (JMC, RME, WS, BS), 13 May (1) TRG (RB), 9 June (2) SC (JMC).

Owl-Warblers: Barn Owl: regular in Johnson City area, also 16 July (nest, 2 young) JC (CRS); regular (2) C (KD, JD), 13 May (1) G (RN). Barred Owl: 13 July (1) CB (Charlie Fisher *fide* KD). Great Horned Owl: 27 July (1) G (RN). Yellow-bellied Sapsucker: 28 May (1) JC (WAB). Tree Swallow: 3 nests fledging 15 young NOL (FO). Bank Swallow: 31 July (1) SB (KD *et al.*). Short-billed Marsh Wren: 29 July (2) G (Roaring Fork) (RN), 30 July (1) G (Grassy Creek) (RN). Swainson's Thrush: 5 May (1) K (JMC, RME), 13 May (2) K (MM). Gray-cheeked Thrush: 4 May (1) JC (WAB), 13 May (1) K (MM). Veery: 2-13 May (1) K (MM), 5 May (1) K (JMC, RME). Ruby-crowned Kinglet: last 5 May (3) K (JMC, RME). Blue-winged Warbler: 18 May (1) CB (KD). Tennessee Warbler: last 5 May (3) K (JMC, RME). Nashville Warbler: last 5 May (1) K (JMC, RME). Magnolia Warbler: last 22 May (1) Ch (KD). Myrtle Warbler: last 13 May (2) K (MM). Black-throated Green Warbler: 21 May (1) K (RME). Blackburnian Warbler: last 5 May (1) K (JMC, RME). Chestnut-sided Warbler: last 10 May (1) K (MM). Bay-breasted Warbler: last 5 May (1) K (JMC, RME). Blackpoll Warbler: last 24 May (1) K (JMC). Palm Warbler: last 13 May (1) TRG (KD, RB). Connecticut Warbler: 15 May (1) CB (RB). Mourning Warbler: 13 May (1) TRG (KD, RB). Wilson's Warbler: 3 May (1) G (BM). Canada Warbler: last 25 May (1) K (JMC, RME).

Bobolinks-Sparrows: Bobolink: last 13 May (300) HRA (KD, RB). Baltimore Oriole: last 12 May (1) K (MM). Rusty Blackbird: last 12 May (1) K (MM). Rose-breasted Grosbeak: 5 May (1) CB (KD), 5 May (1) K (JMC, RME). Blue Grosbeak: 16 June (nest, 3 eggs) K (MG). Dickcissel: 7 July (1) G (ED). Savannah Sparrow: last 14 May (1) AM (KD). White-throated Sparrow: last 13 May (1) TRG (KD, RB). Lincoln's Sparrow: 5 May (2) CB (KD), 7 May (1) AM (KD).

Locations: AM—Amnicola Marsh, BL—Boone Lake, Ch—Chattanooga, CB—Chickamauga Battlefield, C—Concord, CL—Cove Lake, G—Greeneville, HRA—Hiwassee River Area, JC—Johnson City, K—Knoxville, LHS—Long Hallow Swamp, Marion County, Ma—Maryville, M—Morristown, NL—Nickajack Lake, NOL—Norris Lake, SB—Savannah Bay, SC—Scott County, TRG

—Tennessee River Gorge, WBL—Watts Bar Lake.

Observers: FA—Fred Alsop, WAB—W. A. Bridgforth, RB—Ralph Bullard, JMC—James M. Campbell, ED—Elva (Mrs. Chester) Darnell, JD—Jon DeVore, KD—Ken Dubke, RME—R. M. (Danny) Ellis, KG—K. Gaut, MG—Maurice Gribsby, JCH—Dr. Jos. C. Howell, EJ—E. Jeffers, KOS—Knoxville Chapter TOS, BL—Beth Lacy, BMc—Mrs. Beulah McGhee, GM—Geo. McGhee, BM—B. McGuire, RM—R. Miller, MM—Muriel (Mrs. Robert) Monroe, RN—Richard Nevius, FO—Francis (Mrs. Earl) Olson, MER—M. E. Richmond, WS—William Searle, BS—Boyd Sharp, ES—Ed Smith, CRS—Charles R. Smith, RS—R. Spees, JTT—Dr. James T. Tanner, CMW—Mrs. Clara May Wadtke, BW—Mrs. Beth Wuest.

JAMES M. CAMPBELL, 15 Hedgewood Dr., Knoxville 37918.

EASTERN MOUNTAIN REGION—*Herons-Sandpipers:* Green Heron 25 May (1) KS (JES, ETS), 2 June (1) MG (FA, RE), 16 June (1) GSM (KC), 6 July (1) CC (FA), 28 July (3) CC (FA). Canada Goose: 26 May (1) WL (LRH). Wood Duck: 22 May (1 male, 8 young E (CRS). Lesser Scaup: throughout season (pair) WL (CRS). Buffllehead: throughout season (3 males) WL (CRS). Turkey Vulture: 2 June (1) MG (FA, RE). Cooper's Hawk: 3 Aug (1) TF (ETS). Red-tailed Hawk: 15 July (1) CC (FA), 21 July (1) YM (FWB). Broad-winged Hawk: 22 May (1) E (FWB), 15 July (1) CC (FA), 18 July (1) E (FWB), 27 July (3) E (FWB). Ruffed Grouse: throughout season in small numbers E (CRS). Turkey: 23, 28 July (2 males) CC (FA), 30 July (3 males) CC (FA). Common Snipe: 1 May (1) last report, E (CRS). Spotted Sandpiper: 7, 10, 19, 26 May (1) E (CRS).

Cuckoos-Kinglets: Yellow-billed Cuckoo: throughout season E (CRS), 28 July (1) EC (RN). Black-billed Cuckoo: throughout season E (CRS). Barn Owl: 2 July (1) E (FWB). Whip-poor-will: 10 June (85) HM (EC). Chuck-will's-widow: throughout season (6) MC (CWF, CRS). Ruby-throated Hummingbird: only 5 records for period E (CRS), 2 June (1) MG (FA, RE), 2 June (1) CCB (RN), 28 July (1) EC (RN). Red-headed Woodpecker: 8 July (1) CC (FA). Hairy Woodpecker: 2 June (1) CCB (RN). Least Flycatcher: daily 22 June to 10 July (4) TF (FA), 13 July (4) TF (FA, JMC), 14, 19, 23 July (4) TF (FA), 28 July (1) LC (FA). Acadian Flycatcher: 2 June (1) MG (FA, RE). White-breasted Nuthatch: (2) E (CRS). Red-breasted Nuthatch: 16 June (4) GSM (KC). Winter Wren: 16 June (6) IG (KC). Bewick's Wren: 19 May (FWB). Veery: 16 June (3) GSM (KC). Swainson's Thrush: 18, 23 May (1) E (CRS). Golden-crowned Kinglet: 16 June (11) GSM (KC).

Vireos-Sparrows: Solitary Vireo: 8 July (1) CC (FA). Swainson's Warbler: 2 May (1) near CC (FA), 6 May (1) near CC (FA), 13 May (10) TF (FA, JMC), 14 May (1) TF (FA), 21 May (1) AF (FA, BW, LS), 22 May (1) TF (FA). Blackburnian Warbler: 16 June (4) GSM (KC). Chestnut-sided Warbler: 16 June (6) GSM (KC). Blackpoll Warbler: 2 June (1) GM (FA). Yellow-throated Warbler: 16 June (1) E (RLH). Canada Warbler: 2 June (1) CCB (RN). Baltimore Oriole: 26 May (1) G (FA), 2 June (1) G (FA), RE), 16 June (1) G (KC). Scarlet Tanager: 16 June (1) GSM (KC). Rose-

breasted Grosbeak: 2 June (2) (nest) CCB 16 June (1) GSM (KC). Blue Grosbeak: (3) throughout period MC (CWF, GD, HD). White-throated Sparrow: 6 May (1) E (CWF).

Locations: AF—Abram's Falls, CC—Cades Cove, CCB—Camp Creek Bald, E—Elizabethton area, EC—Eden's Cabin, G—Gatlinburg, GSM—Great Smoky Mountain National Park, HM—Holston Mountain, IG—Indian Gap, KS—Kinzel Springs, LC—Laurel Creek, MC—Milligan College, MG—between Maryville and Gatlinburg, TF—Tremont Forks Road, WL—Wilbur Lake, YM—Yellow Lake.

Observers: FA—Fred Alsop, FWB—Fred W. Behrend, JMC—James M. Campbell, HD—Mrs. Harold Dillenbeck, GD—Mrs. George Dove, EC—Elizabethton Chapter TOS, RE—Ray Ellis, CWF—C. W. Fairbanks, LRH—Lee R. Herndon, KC—Knoxville Chapter TOS, RN—Ruth and/or Richard Nevius, MER—M. E. Richmond, JES—Janet Semmes, CRS—Charles R. Smith, ETS—Ed Smith, LS—Mr. and Mrs. Lewis Smith, BW—Mr. and Mrs. Bill Williams.

RAY M. ELLIS, 1 Hedgewood Dr., Knoxville 37918.

LEBANON—BIRD SANCTUARY

Lebanon Chapter of TOS voted, February 1968, to initiate the project of having Lebanon designated a Bird Sanctuary. Work toward that objective has developed in keeping with suggestions by the National Audubon Society and the National Garden Clubs of America.

Publicity and education have been the two main tools of action. Publicity has been toward planting of trees, shrubs and other plants to produce food and shelter for birds, as well as places for their nesting and protection. Education has been through the schools as well as "The Lebanon Democrat." Over 1,000 pupils in the city schools have heard talks on conservation, including birds. Merchants have donated prizes for posters made by the pupils. Many of these posters have been on display in store windows in Lebanon and at the State TOS convention. A weekly column about birds has been set up to appear in "The Lebanon Democrat," where frequent articles have already appeared to make Lebanon's citizens even more bird conscious.

Civic clubs, garden clubs, Scouts and other youth groups have been contacted and this effort will continue. The management of the Junior Achievement groups has agreed to request consideration of the making of bird houses and feeders when the next year's work is planned. Several groups of Boy Scouts have made bluebird houses. Government bulletins on plantings, feeders, and houses have been distributed and are available. A committee is working on appropriate signs which will be erected at highway entrances to the city. On 7 May, 1968, the Lebanon City Council by official action designated the city of Lebanon a Bird Sanctuary.

RUTH MERRITT, Route 6, Lebanon 37087.

NEW PRESIDENT-ELECT: GEORGE R. MAYFIELD, JR.

On 11 May 1968, the Tennessee Ornithological Society elected Dr. George Radford Mayfield, Jr. the Society's first President-elect. At the close of the 1969 State Meeting, Dr. Mayfield will officially take over the duties of the current President, Robert W. McGowan of Memphis.

George Mayfield has been an ardent member of T.O.S. during recent years and is a familiar face at the annual State Meetings. His mother has long been an active member of the Society and her attendance at the annual meetings dates back many years. Perhaps, to the year when she became what is believed to be the first female member of T.O.S.

Dr. George R. Mayfield, Sr. (1877-1964) became one of our five founders when T.O.S. was organized on 7 October 1915 at Nashville. As a member of the Nashville Chapter, he served as Chapter President and as President of T.O.S. Thus the Mayfields become the first father and son in organizational history to accept this top office in the Society.

Few men or women can claim a lifetime association with T.O.S. that dates back beyond their childhood memory. George Mayfield can! At the age of 41 he recalls, ". . . .I began attending T.O.S. meetings probably before I can remember but certainly by age three to five. . . . early meetings at 'Birds I View' on Stones River, Sycamore and Marrow Bone Creeks in Middle Tennessee and at the H. P. Ijams homeplace in the 1930's . . . these were days when the entire T.O.S. membership attending the spring meeting could be fed on the creek bank by one or two diligent cooks. After the early morning bird walks I usually ended up wading, building dams, and floating logs down the creek during the heat of the day."

During the "in between years—1942 to 1954" he experienced a hiatus with his birding activities. He became increasingly occupied with high school and his church choir. Later he was in medical school. As a graduate of Peabody Demonstration School in 1944, Mayfield enrolled and attended at Vanderbilt for two years.

In January 1946 he became a member of the U. S. Army, and later, a second lieutenant in the First Cavalry Division, 61st Field Artillery Battalion and assistant communications officer and spent a year in Japan.

Mayfield returned to college and graduated at Vanderbilt University in 1950. He completed study at Vanderbilt Medical School in 1956. In 1959 he concluded his training in Pathology at Charleston, West Virginia.

The years since, have been spent in Middle Tennessee where he has practiced pathology throughout the rural towns and at Maury County Hospital at Columbia, where he makes his home.

He is married to the former Cleo Gillund of Preston, Minnesota and they have three children, Rad (7), Mark (5) and Rebecca (2).

As a pilot, he has frequently flown his private plane to count vultures, hawks and herons on Christmas Counts. In addition he shares a similar interest in music as choir director at First Presbyterian Church in Columbia and the Columbia Choral Society.

RESIGNATION OF EDITORIAL STAFF MEMBER

It is with sincere regret that we announce the sudden and unexpected resignation of Wallace Coffey from the Editorial Staff of The Migrant, effective as of 27 September 1968. Many of the improvements in the quality of the material published and changes made in recent issues have been due to his tireless efforts in attempting to improve our journal since December 1966 when he assumed the position of Associate Editor.

BOOK REVIEW

The Shorebirds of North America. Editor and sponsor, Gardner Stout; text, Peter Matthiessen; paintings, Robert Verity Clem; species accounts, Ralph S. Palmer. 1967. New York, The Viking Press. 270 pp., 32 color plates, line drawings, 10½ x 12¼ in., cloth, $22.50.

The authors have collaborated to depict a glamorous sketch of each of the seventy-five species of shorebirds occurring regularly on the North American continent. Some of these species resemble other species so closely that many observers regard shorebords, as a group, to be so difficult to identify, that the time and effort required cannot be justified. These narratives attempt to dispel that attitude and present many helpful suggestions to assist in their identification. For instance, a species which closely resembles another species, in size, markings, and behavior, may seldom associate with the species which it so closely resembles, but associates with other species, from which it can be distinguished relatively easily; it may even favor an entirely different habitat.

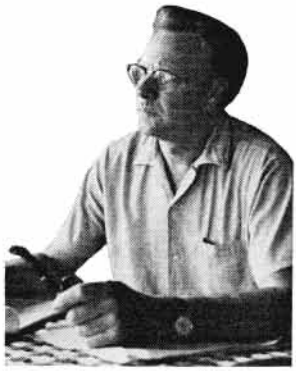
The thirty-two water color paintings by Robert Verity Clem are exceptionally well done and would be of great assistance in identification when the birds are in spring or winter plumage, but many of the transition or confusing plumages are lacking, making it necessary to consult other sources for the more difficult identifications.

Almost half the book is devoted to the scientific "Species Accounts" by Ralph S. Palmer, which covers: plumage, moults, descriptions, field marks, voice, habitat, breeding range, nesting, habits, migration, and references. These characteristics are more complete than field guides can be and, therefore, would be very useful for reference purposes. It is an impressive book and one which anyone would be proud to possess.

LEE R. HERNDON, Route 6, Elizabethton 37643.

THE PRESIDENT'S MESSAGE

Thanks, T.O.S. members, for making our state meeting in Cookeville a resounding success. And especial thanks go to Professor Miser Richmond and his dedicated staff for their time and energy in planning and producing our pleasant and rewarding experience at Tennessee Technological University. Also, our nominating committee deserves our appreciation for their selection of our first President-elect, Dr. George Mayfield, Jr. We are indeed fortunate in being able to look forward to the capable leadership of a person of the caliber of Dr. Mayfield, who brings to our organization a long family heritage of devoted affiliation with T.O.S.



One year ago this month I wrote my first brief President's Message. I indicated then an awareness of future successes and future failures, and future knowledge to be gained from experience. I should like to indicate briefly some impressions seen through a year of experience.

During a very recent visit with our Secretary, Helen Dinkelspiel, we heartily agreed that the two year term of office for the officers of T.O.S. is excellent. Also, we agreed that the provisions calling for an election of a President-elect is certainly desirable. In this regard, I shall, at the appropriate time, make available to our new President-elect copy of all pertinent correspondence relative to the affairs of our organization. This can insure a continuity in the operation of the organization affairs without the previous lag in communication resulting from a temporary break-down in organization machinery.

I was pleased to see the large turnout of members for the Board of Directors' meeting in Cookeville. It is important for the total membership to be aware of and involved in the affairs of our organization, and I again extend an invitation for the members to attend these important meetings. The Board of Directors' meeting is the place where important affairs and issues are discussed and decided in a democratic manner. The individual director should function in more than a mere perfunctory manner. He should come to the meeting informed and involved, and willing to take back to the local chapter the results of discussion and decision. The only power your President needs is the power to request that the members help in solving fairly, in democratic procedure, any problem that might exist. I have endeavored to do just that this past year, and forgive me if I feel a bit satisfied with the results, but I do.

It is still my opinion that a creative and hard-working membership committee can make a considerable contribution to the future success of our organization. As one example, the city of Jackson, Tennessee, with four colleges and a population of around 50,000, has no organization such as ours. Some members regard a membership committee as having minimum value; others feel that it is the life-blood of an organization. I should like to hear at the next state meeting some discussion and recommendation regarding the need for and role of a membership committee.

We are fortunate that Mack Prichard, Parks Naturalist, Tennessee Division of State Parks, accepted the position as Coordinator of Conservation Activities. Let's give him our support, advising him of activities and conservation needs existing in our state. Here is a chance for us to have some communication state-wide on these affairs which are so dear to our hearts and to realize some concerted effort in their behalf. As Mack expressed so succinctly in his acceptance statement, our function surely must be more than to be "entertained by the birds." I enjoyed that phrase, but do you ever feel sometimes in the field that just maybe it is we who are entertaining the birds!

I commend the membership and the Editorial Staff of THE MIGRANT for the cooperative manner in which a solution to the circulation problems of the publication was reached. This has been a very real problem during the year and it was my earnest hope that a workable solution could be found during the state meetings. Once again I reiterate my belief that this organization is comprised of people who, when made aware of a problem and presented with possible solutions, will intelligently choose that solution which is fair and reasonable for all concerned.

Respectfully,
ROBERT W. MCGOWAN

COME TO UPPER EAST TENNESSEE FOR THE FIFTY-FOURTH ANNUAL STATE T.O.S. MEETING 9, 10, 11 MAY 1969,

AT EAST TENNESSEE STATE UNIVERSITY, JOHNSON CITY, TENNESSEE

There will be a paper session on 10 May, at which papers describing original research in the area of ornithology may be presented. If you should wish to participate in this paper session, please send the title and a synopsis of your topic and an estimation of the time required for its presentation to the Editor as soon as possible.

PREPARATION OF COPY FOR PUBLICATION

The purpose of THE MIGRANT is the recording of observations and original information derived from the study of birds, primarily in the state of Tennessee or the area immediately adjacent to its borders. Articles for publication originate almost exclusively from T.O.S. members.

Contributors should prepare manuscripts and submit them in a form acceptable to the printer, after editorial approval. Both articles and short notes are solicited but their format should be somewhat different.

Some suggestions to authors for the preparation of papers for publication are given herewith.

MATERIAL: The subject matter should relate to some phase of Tennessee Ornithology. It should be original, factual, concise, scientifically accurate, and not submitted for publication elsewhere.

TITLE: The title should be concise, speific, and descriptive.

STYLE: Recent issues of THE MIGRANT should be used as a guide in the preparation of manuscripts. Where more detail is needed reference should be made to the *Style Manual for Biological Journals* available from the American Institute of Biological Sciences, 3900 Wisconsin Avenue N. W., Washington, D. C. 20016.

COPY: Manuscripts should be typed double spaced on 8½ x 11" paper with adequate margins, for editorial notations, and should contain only entries intended for setting in type, except the serial page number. Tabular data should be entered on separate sheets with appropriate title and column headings. Photographs intended for reproduction should be sharp with good contrast on glossy white paper in black and white (not in color). Instructions to the editors should be given on a separate sheet. Weights and measurements should be in metric units. Dating should be in "continental" form (e.g., 7 March 1968).

NOMENCLATURE: Common names should be capitalized followed by binomial scientific name in italics only after the first occurrence in the text for both regular articles and ROUND TABLE NOTES, and should conform to the A.O.U. Check-list 5th edition, 1957. Trinomial should be used only after the specimen has been measured or compared with typical specimens.

BIBLIOGRAPHY: When there are more than five references in an article, they should be placed at the end of the article, otherwise they should be appropriately included in the text.

SUMMARY: Articles of five or more pages in length should be summarized briefly, drawing attention to the main conclusions resulting from the work performed.

IDENTIFICATION: Rare or unusual species identification to be acceptable must be accompanied by verifying evidence. This should include: date, time, light and weather conditions, exact location, habitat, optical equipment, distance, behavior of bird, comparison with other similar species, characteristic markings, experience of observer, other observers verifying observation and reference works consulted.

REPRINTS: Reprints are available on request. Reprint requests should accompany article at the time of submission. Billing to authors will be through the state T.O.S. Treasurer.

Books for review and articles for publication should be submitted to the editor. Seasonal reports and items should be forwarded to the appropriate departmental editor whose name and address will be found on the inside front cover.

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