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NESTING HABITS OF THE GREAT HORNED OWL

By ALBERT F. GANIER

It is a generally accepted fact that the Great Horned Owl (Bubo v. virginianus) has become a rare bird in all sections of the country that have long been settled. The generations of hunters, the lack of virgin timber, and the general encroachment of civilization are usually considered to have all but swept this great bird of prey from our long-settled communities.

I therefore determined some years ago, i.e., during the year 1925, to specialize for the season on this species in an effort to find a series of actually occupied nests and thus prove that a number of records we had been making during winters past were of resident and not migrant birds. I may say that I was agreeably surprised to find that this owl is not as rare about Nashville as had been thought, as proven by the fact that I found five nests containing eggs and definitely located several more pairs whose nests I did not have time to look carefully for.

The fact that the Nashville area was first settled more than one hundred and fifty years ago, and that for the most part it is well settled and fine farming country, makes it of especial interest that these birds are surviving the conditions that are generally considered to bring about their extinction. All of the pairs are in Davidson County except one, the nest of which lies one mile south of the line. Although I have during the succeeding years tramped practically every large strip of woodland in this area, I am not prepared to say that I have definitely located one-half or even one-fourth of the total number of pairs of Great Horned Owls that breed in the county. Certain sections of very hilly topography on the large old estates still contain ravines filled with beech and other virgin timber. The rivers are also for the most part fringed and flanked with timbered areas particularly where the cliffs come so close to the stream that cultivation has not justified the removal of the intervening growth. Here too flourishes the stately sycamore, many of which have fine cavities in their tops such as this owl seems to prefer. Here also is occasionally found a vertical cliff containing deep cut ledges and natural cavities and in these cliffs two of the nests have been found. In the upland woods the big beeches frequently contain large cavities, the floors of which are usually nearly level with the hole. The Red-tailed Hawk breeds regularly in the areas frequented by the big owls, and their bulky nests are available but are evidently not used if a good hollow or cliff site can be had. I am also convinced, from examining dozens of empty as well as used hollows, that birds pick as large a one as possible, knowing intuitively or from experience that a parent bird, two lusty young, and a supply of game require ample standing room. Two of the three nests for which an old domicile of the Red-tail had been chosen held one young and one egg respectively; in the third, young could be seen from an adjacent hillside but whether there were one or two was never ascertained. However from the above it would appear that when old hawk nests are used, often but one young is raised because of lack of standing room.

In order to develop the subject further it is perhaps best to give below a description of the nests found, the owls' conduct on and near the nests as well as to give what is known of the previous history of each pair.

Pair No. 1. On January 18, 1925, I found a nest containing one fresh egg, in a cliff above Stone's River, nine miles southeast of Nashville and three-fourths mile above my camp, "River-Cliff." When revisited one week later for photographing, the nest contained two eggs. The nest of this pair had been sought the previous year by examining the hollow trees along the river bank, but I had only casually examined the cliff high above the river, so did not find it. This year, after covering the same ground, I gave careful attention to the most rugged cliff, after noting that some Crows were very noisy in its vicinity. I decided to climb trees along its base in order to be able to see the ledges, and on having climbed twenty-five feet up the first one I had the pleasure of seeing a sitting owl fly from a ledge even with my eyes and about fifty feet away.

She dropped downward, then noiselessly winged her way up the bluff where the ever-present Crows harangued her at length, with vociferous clamor. On climbing another tree closer to the ledge, I could easily see the one fresh egg, resting on the dry dirt of the ledge, surrounded by a dozen of the long downy feathers from the owl's belly. Although we had talked loudly under the ledge, the bird did not fly until I climbed the tree referred to. I left at once and returned a week later, accompanied by friends, including Dr. H. S. Vaughn who brought his photographic paraphernalia. As we walked under the nest ledge the male flew from a crevice high up in the cliff and fifty feet from the nest. He alit in a tree fifty yards away, viewed us briefly with ear tufts erect, then moved on. I first climbed the tree forty feet away with my spurs, and as I came up even with the shelf I saw the bird sitting with ear-tufts nearly erect. A few inches more and I could see her yellow eyes peering from behind an intervening rock. She looked perhaps five seconds then arose and launched herself in flight, whereupon as before, she was beseiged by the neighboring Crows. During the hour we remained at the nest neither bird reappeared. We had set up the camera with the hope of getting the bird as she left the nest ledge but a poor focus spoiled the picture.

The eggs were removed from the nest ledge by means of a small dipnet attached to the tip of a fishing rod and manipulated from a nearby tree. There were about a dozen of the owl's belly feathers about the eggs and we picked up twenty-two more beneath, on the base of the cliff. There were also a number of old bones on the ledge and some Crow feathers. No excreta or pellets were found on or below the ledge but much of the

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former was found below the male's roost. When the eggs were prepared for my collection, one showed a week's incubation and the other at least two days less. The cliff above protruded well beyond the nest ledge and sheltered it effectively from the rain. The ledge was level on top, about two feet wide and fifteen feet long. Being cut off sheer at each end, it was inaccessible to prowlers. The cliff itself is an escarpment about sixty feet high which crowns a wooded bluff rising from the river. It is in the midst of a belt of woodland which entends along the stream.

The nest was revisited on March 15, when it was found that two more eggs had been laid. On March 22, the nest contained two young about four days old. By applying the usual thirty day incubation period, it was evident that the second set was laid about one month after the first set was collected. When I approached the nest-ledge on this occasion, I beat upon the rock a few feet beneath it with a pole but the brooding bird stuck to the nest. Upon my climbing the tree to a point level with the nest and ten feet away, she flew but later took up a position fifty yards away. The male, which had been roosting twenty-five yards away from the nest and on the face of the cliff, took a position on a branch a few feet from his roost and scolded by snapping his bill and glaring with his yellow eyes. Occasionally he would distend his white throat as though making some inaudible noise. He appeared very dark, nearly black. In the nest was the body and severed heads of two rabbits while a number of bird feathers were scattered about on the ledge. Both birds maintained their positions, not coming nearer. The site was not visited again that season and I assume the young fledged successfully. It was visited however for a number of subsequent years but was never found used again. Along the river below were numerous big trees containing good nesting cavities and the owls were heard there each nesting season.

Pair No. 2. On January 24th, 1925, I took from a cavity in a live beech tree a set of two perfectly fresh eggs. This nest was located in an extensive and thick woods near the top of a large high mass of hills, overlooking the South Harpeth River valley. It was eleven miles southwest of Nashville in Williamson County, just one half mile south of the Davidson County line and near the Hillsboro Road. The tree was twenty-eight inches in diameter near the base and the limbless trunk had decreased but slightly in size at the cavity forty feet above. It grew on a steep slope not far below the crest of the ridge. The floor of the cavity was dry and was about five inches below its entrance. As usual no nest material had been brought in by the owls and no food was about nor were there any signs of occupation under the tree. The eggs were white and clean and lay on an accumulation of debris which included rotted wood, leaves, old bones and feathers. About a dozen of the owls' own silky belly feathers were by or near the eggs. On arriving at the base of the tree I pounded on it vigorously with my hand axe but the brooding bird would not fly. She flew however when I had reached a point about fifteen feet above the ground, dropping first downward, then flying swiftly out of sight, and she did not return during the half hour I was at the nest.

My first experience with this pair was in the previous year, when one of the parent birds flew from this nest tree while I was a hundred feet away. This was on March 30th, and an examination of the ground below the cavity, white with excrement, indicated that the nest contained large young, probably ready to leave. The parent bird kept in sight, with ear tufts erect and occasionally calling. I did not climb to make a more complete observation.

During 1926 this nest cavity was not used, but in 1927 Vernon Sharp visited it, and upon flushing an owl from the nest he climbed and found a single egg. This was nearly fresh and another might have been added later. Several visits in subsequent years found the tree unoccupied.

Pair No. 3. On Feb. 1st, 1925, I found a Great Horned Owl sitting on an old Red-tailed Hawk's nest, and on climbing the tree three days later the nest was found to contain one fresh egg. It was cold and the parent was absent. On Feb. 7th, Dr. Vaughn visited this nest to photograph the incubating bird from the steep slope upon which the tree grew. She was sitting and although he worked at thirty yards and slightly above her, she did not leave the nest. The next morning I visited the nest, likewise found her sitting, and upon climbing, found no more eggs had been laid. By way of experiment, I substituted a small, white hen's egg for that of the owl. Apparently it was not accepted for on my return twelve days later the nest was empty. When first inspected, a number of Cardinal feathers were in the nest as well as soft feathers from the owl's body. This nest was located eight miles southwest of Nashville and a half mile west of the Hillsboro road. It was a very exposed situation to have been chosen for this retiring species since the nest was almost over an open hillside pasture and could be plainly seen from a distance. The owl, sitting on the nest, could easily be seen several hundred yards away. It was forty-five feet up (about two-thirds the height) of a large black oak and was built in the broad triple crotch formed where two ten inch branches had sprung from the main trunk. It had been built and used by a Red-tail at least five years previously and had held the young of this hawk in 1923. Over the hill in thickly wooded little valley, the roosting place of the male was found. It was in a thick, vine-clad poplar, and fresh excreta on the ground showed that it was in use.

On Feb. 20, 1927, the nest of this pair was again found, it being just over the hill in the open-topped cavity of a live sugar maple tree eighteen inches in diameter. The birds were hard-put for a nesting place since the cavity was only twenty-five feet up, but twelve inches in diameter, and open on one side. The owl, covering the young, could plainly be seen from the steep wooded slope above. She flew off as I tapped the base of the tree, going two hundred yards to the other side of the gulch, where she kept up a continual "hooting." Greatly to my surprise, this nest was found to contain three young and these appeared to be eight, ten, and twelve days old, respectively. The hind legs of a rabbit was the only food in the nest. This hollow was probably used for nesting previous to 1925, since during that year I had climbed to it and found quite an accumulation of old

bones and feathers. The following spring, 1926, it was found to be holding water so I bored a drain-hole and inserted a pipe, adding also some small cedar twigs. During 1928 the cavity was unoccupied, but the owls were still using these woods.

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Pair No. 4. On Feb. 8th, 1925, I found a nest in the decayed top of a big sycamore overhanging Stone's River, a short distance below the Stone's River Pike bridge and thirteen miles from Nashville. The bird flew off the nest when I tapped on the base of the tree with a stick. For lack of time I was unable to climb to the nest on this day, but did so four days later and found two eggs, incubated about fifteen and seventeen days respectively. On this visit the brooding bird flew off when a stick cracked beneath my feet under the nest tree. On both occasions she remained in sight most of the time, flying restlessly from one tree top to another, across the river, from 150 to 500 feet away. During the half hour I was engaged in climbing the tree, she frequently uttered the typical call note of the species. On neither visit was more than one bird seen. The tree was three feet in diameter at the nest and alive except for the large rotted cavity in its center. It was in a thirty foot wide fringe of trees along the east bank, back of which was a narrow corn field, flanked in turn by an extensive hilly woodland pasture. Across the river was a cliff and thinly wooded waste land. From the ground, several downy owl feathers could be seen sticking to the rotted wood and adjacent branches. The eggs were placed far back in the large open cavity, the floor of which was dry and level with the entrance. This "floor" was an accumulation of wood rot, twigs and leaves, and when examined was thinly covered with snow except where the egg lay. No nest material had been supplied by the birds other than a dozen of the bird's belly feathers. Revisiting the tree on March 22, it was found that the birds had not relaid.

The presence of this pair was suspected from the fact that on April 9th, 1919, a young of this species was found wandering about on top of a cliff three hundred yards downstream. This cliff was examined two subsequent seasons in hopes of finding a nest there, but the sycamores upstream were not searched.

The old nest-tree was again visited on Feb. 10, 1929, and was found to contain two eggs, incubated about twelve days. Incubation had therefore begun about Jan. 26, as compared with Jan. 24 in 1925. The incubating bird flew from the tree only after I had rapped it several times with a pocket axe. She flew across the river and about three hundred yards downstream, alighting in the top of a tree. Five minutes later she flew nearly back to the tree but seeing me, returned to her perch and a few minutes later was being kept busy "entertaining" the neighborhood Crows. The nest cavity was about sixty feet above the water, and the trunk five feet in diameter; this coupled with a driving snow and the thermometer in the twenties made the climb a stiff one. The eggs were decidedly smaller than the average.

Pair No. 5. On Feb. 22nd, 1925, a nest with two eggs, far advanced in incubation, was discovered in a beautiful cliff which rises above the Cumberland River and overlooks Cockrill's Bend. We have named this site

"Buzzard's Bluff" for the reason that two or three pairs of Black and Turkey Vultures nest in its small caves each year. It is located eight miles west of Nashville. This well wooded bluff is extremely steep, rising from the river bank to a height of 225 feet, and crowned with a vertical escarpment several hundred feet long and as much as sixty feet high. The cavity chosen by the owls was twenty feet above the base of this cliff and about twenty-five feet from the top. As we walked along talking at a point under the nest cavity, the brooding bird flew from the nest. Ten minutes later, as I lowered myself from above by rope, both birds appeared together, and flew toward the nest. However, at forty feet they observed us and swerving sharply flew back down the cliff from whence they came. The eggs were three feet back from the entrance of the cylindrical cavity which at this point was about two feet in diameter. They lay on an accumulation of litter composed of bark, twigs, leaves, dirt, etc., that had been gathered by the cliff rat (Neotoma pennsylvanica) which is common at this cliff. The eggs were shiny and "dense" when held to the light; later observation showed that the usual thirty day period of incubation had begun about February 3rd. We left within fifteen minutes after flushing the bird, in order that the eggs would not get chilled.

Although this cliff had been visited during April for several years in search of vulture nests, we had not suspected that owls might use it for nesting earlier in the season. However we had observed them in the vicinity during several of the years previous. Conditions here were excellent for photography, so the nest was turned over to Dr. Vaughn for that purpose. He made visits to the nest on Feb. 28, March 7, 14, 21, "April 7, 18 and 25, securing an excellent series of pictures. On the March 7 visit, he found that the eggs had hatched 3 or 4 days previously, thus making their date of deposition about Feb. 3. On April 7, food found in the nest consisted of a headless rabbit, a Meadowlark, and part of a Crow, the latter good evidence of the reason for the hatred of "Bubo" by the Crow tribe. On April 18, there was half of a rabbit in with the young. The young left between the visits of April 18 and April 25, making their period of nest-life at least 46 days. Visits to the bluff were made in subsequent years, but the nest site was not again found in use although owls of this species were seen there.

Pair No. 6. dwell in the Overton Hills forest above Radnor Lake, 7 miles south of Nashville. This extensive tract of woodland crowns the highest group of hills in the county, some of which rise to 1250 feet elevation. Their nest was first found on March 18th, 1917, when the sitting bird was observed from an adjacent hillside, on a three year old Red-tailed Hawk's nest. She refused to leave even when the tree was pounded with a stout club. Being a tedious climb and too late for eggs, I did not investigate further. The nest was ninety feet up, in a tall slender "shell bark" hickory. On April 8th I visited the site again and observed that one or possibly two young birds occupied the nest and that the parent birds were not to be seen. In April 1919, I flushed an adult owl and two nearly grown young from the trees along a small creek, a quarter of a mile from the nest just described. Their nest,

though sought for, was not found during the years following though the owls were occasionally heard and seen there. On March 25, 1923, Vernon Sharp, Jr., who had sought the nest of this pair diligently for several years, found a young owl in an old Red-tailed Hawk's nest that had been built two years previously, but had not been occupied the following year. This nest was a quarter of a mile from the 1917 site and was built in a hickory on a well wooded hillside. The parent bird flew from the nest and called from a distance but did not come near. Some badly spoiled quarry was on the nest.

The young bird was removed from the nest since it appeared to be nearly ready to fly and was taken home to be kept for observation and study. It matured in due time and developed into a fine looking specimen. Regularly at about midnight it uttered several notes of the "boo" or "hoo-oo" type, and it showed no disposition to lose its inherent fierceness. It was banded and released by Mr. Sharp two years later in the same woodland. During 1924 he could find no nest, but on March 29 he flushed an old bird and two young in the woods a half mile from the previous site. On March 23, 1930, I was shown one young in an old Red-tailed Hawk's nest and several similarly situated nests were found there in subsequent years. The woods occupied by this pair is quite extensive, covering several hundred acres, and is protected from hunters; it is not unlikely that two pair breed within it.

GENERAL OBSERVATIONS AND SUMMARY

During the years following the 1925 series, approximately twenty additional nests of the Great Horned Owl have been found in Middle Tennessee by the writer. These for the most part were followed up with less care but enter into the remarks which follow.

Where a suitable hollow in a large tree can be had, these owls in the Nashville area seem to prefer them as a nest site to a ledge on a cliff or an old hawk's nest. Such a hollow must be reasonably dry and preferably large enough to comfortably shelter the offspring. In the fine escarpments of the Cumberland Plateau, however, ledges are preferred and in two instances their young were found in old nests of raptorial birds that had been built upon such ledges.

In most nests examined, the sitting bird refused to leave due to pounding on the tree or otherwise making a noise below; this is particularly true if small young are being brooded.

In no case has the writer ever been struck or closely threatened by the birds while he was in the nest tree; usually they fly away and keep out of sight. Nests in trees were reached by climbing with the aid of linemen's spurs, using a safety belt in addition for trees of large diameter.

It would appear that the male has a regular daytime roosting place, as near to the nest as suitable quarters can be had. The ground under such roosts is considerably soiled, and finding such a roost has on occasions helped to locate the nest.

The practice of feathering the nest, with long downy feathers plucked

from the bird's belly, seems general. No other nest material whatever is brought in. Occupancy of tree hollows may often be verified by finding these feathers caught upon nearby branches.

Under apparently ideal conditions, no more than two eggs or young have been found in a nest, with the exception mentioned. In the Northern States, three eggs are frequently found while the western race of this species is said to often lay four.

It appears that the average date of laying near Nashville is January 25th. The first five nests examined during 1925 held their first eggs on approximately the following dates: January 22, 24, 25, and February 1 and 2. The first three weeks of that January were warmer than normal, but weather conditions in later years and in other sections of the country have not been found to appreciably influence nesting. It is quite remarkable that the birds should be able to keep their eggs at incubating temperature in windy, zero weather, especially when using old hawk nests.

The period of incubation is twenty-eight to thirty days, according to Frank L. Burns (Wilson Bulletin, June, 1921), and the same author gives the period of nestlife of the young as about 45 days. This would indicate that our local birds leave the nest about April 10th. It is likely that young reared in an open nest leave earlier than those reared in a well sheltered one. In the case of the large owls, authorities agree that two and sometimes three days elapse between deposition of the eggs, and that incubation begins with the laying of the first one. My own data bears this out. The fact that young unable to fly have often been found on the ground, by various local people, shows that this species is inclined to leave the nest prematurely.

As to whether the birds lay a second clutch after the first has been taken, I have in only one case found this to happen, and can find little published data to support an affirmative conclusion. I think it is likely that if the eggs are taken when fresh, the birds will lay again but preferably at a different site. Based on my experience with other large birds of prey, I think a second set doubtful if incubation is advanced when the first set is taken.

2112 WOODLAWN DR., NASHVILLE, TENN., May 1947.

THE SPRING FIELD DAYS

Annual spring field trips and bird counts were made in four different localities in Tennessee this spring. The Elizabethton, Knoxville, and Memphis chapters all made their trips on the same date, May 4, 1947. The field trip at Nashville was made one week later on May 11, in conjunction with the annual meeting of the T. O. S. The total of all bird species listed from the four localities is 157. The total of all species recorded on the field trips taken on May 4 is 153, so there were at least that many many species of birds in Tennessee on that date.

The Elizabethon chapter, on May 4, covered the area around Elizabethton, and one member, Fred W. Behrend, climbed to the still snow-covered summit of Roan Mountain. Sixteen members participated. The total

number of species recorded is 115. Two species observed on the field day that were new records for Carter County were Blue-winged Warbler and American Bittern. On Roan Mountain were seen such birds at Least Flycatcher, Raven, Black-capped Chickadee, Red-breasted Nuthatch, Winter Wren, Golden-crowned Kinglet, and Junco.

The Knoxville chapter held their spring field day in the customary area, in the vicinity of the home of H. P. Ijams which is at the very southeastern edge of Knoxville, and on the lower reachers of the French Broad River. About twenty-five people participated; the time was from 6 A.M. to 8:30 P.M. The weather was clear and warm, windy after mid-morning. The total number of species recorded is 107. The six Screech Owls reported included a nest full of five young. One of the unusual sights of the day was a single flock of five species of swallows, all of the swallow family found in Tennessee except the Martin.

The Memphis chapter, on May 4, covered the Lakeview area, on the Tennessee-Mississippi boundary, including Lakeview, Mud Lake, and the levee. Sixty-seven people took part, from 9 A.M. to 6:15 P.M. A total of 115 species were recorded. The single Phoebe observed had a nest under a highway bridge. The large number of Dickcissels were found mostly along the levee.

The Nashville chapter held their field day on May 11th in conjunction with the meeting of the T. O. S. Most of the observations were made at Indian Lake, fifteen miles northeast of Nashville, and in the fields and fine woods surrounding the lake. Some of the observations were made in the early morning along the Stone River and other places in or near Nashville. The field day at Indian Lake ended in a lunch there, followed by the annual meeting of the state society. Approximately ninety people participated in this field day, 107 species of birds were recorded. The eight Wood Ducks consisted of an adult female and seven young seen on Stone River. The six Coots were an adult female and five young raised in Centennial Park, Nashville.

TABULAR RECORD OF SPRING FIELD DAYS

The abbreviation "c" means "common;" the abbreviation "f.c." means "fairly common." For further comments on birds marked with an asterisk (*) see the remarks on the field trip for that locality.

	Elizabethton & Roan Mtn.	Knoxville	Memphis	Nashville		Elizabethton & Roan Mtn.	Knoxville	Memphis	Nashville
Pied-billed Grebe	****	1	200	1	Black Duck	****		1	****
Anhinga		-	1	-	Blue-winged Teal	222	*****	2	4-14
Great Blue Heron	****		2	1	Wood Duck				8 1
American Egret	****	-	5	****	American Golden-eye	2000	****	1	****
Little Blue Heron	-	****	8	****	Turkey Vulture	8	4	3	4
Eastern Green Heron	5	1		3	Black Vulture	244	1	4	15
Black-cr. Night Heron		2			Mississippi Kite	****	****	2	
American Bittern	1*			-	Sharp-shinned Hawk	-	1		+

	Elizabethton & Roan Mtn.	Knoxville	Memphis	Nashville		Elizabethton & Roan Min.	Knoxville	Memphis	Nashville
Cooper's Hawk		_	1	1	House Wren	2			_
Red-tailed Hawk			2	1	Winter Wren	19*			
Red-shouldered Hawk	*****	3	****	1	Bewick's Wren	3	3	3	2
Broad-winged Hawk	1	1	2	****	Carolina Wren	22	15	15	f.c.
Osprey	2	****	****	****	Mockingbird	23	30	9	2
Sparrow Hawk	2	1	1	1	Catbird	80	15	62	3
Bob-white	13	10	5	3	Brown Thrasher	29	25	9	3
King Rail	****	****	1	****	Robin	92	C.	10	2
Sora		****	3		Wood Thrush	54	10	9	f.c.
Coot				6*	Olive-backed Thrush	****	22	8	2
Killdeer	8	1	2	4	Gray-cheeked Thrush			1	2
Wilson's Snipe	7	1.5	1	7	Veery	10	2	2	3
Spotted Sandpiper	18	15	1	7	Bluebird	9	10	1	4
Solitary Sandpiper	8	***	1	5	Blue-gray Gnatchatcher	15 11*	12	7	f.c.
Lesser Yellow-legs	1 29	30	36	12	Golden-cr. Kinglet Ruby-crowned Kinglet	6	1	3	****
Mourning Dove Yellow-billed Cuckoo	4	3	4	5	Cedar Waxwing	9	8	5	3
Black-billed Cuckoo	5	1	-	1	Migrant Shrike	0	0	3	
Screech Owl	ĕ	6*			Starling	200	C.	10	5
Barred Owl	2.00	0.70	4.00	1	White-eyed Vireo	36	10	20	c.
Chuck-will's-widow		2	2	1	Yellow-throated Vireo	8	4	- 1	3
Whip-poor-will .	1	2			Blue-headed Vireo	4	2	-	1
Nighthawk	1	1	-	1	Red-eyed Vireo	23	16	15	C.
Chimney Swift	59	50	22	f.c.	Philadelphia Vireo	****		1	****
Ruby-thr. Hummingbird		3	11	2	Warbling Vireo	9	1	7	6
Belted Kingfisher	4	3	5	1	Black and White Warble	r 19	10	1	4
Flicker	25	15	21	2	Prothonotary Warbler	1.TT5	3	6	C.
Pileated Woodpecker	1	1	3	3	Worm-eating Warbler	3	-		****
Red-bellied Woodpecker	*****	4	7	C.	Golden-winged Warbler	3	5		
Red-headed Woodpecker	1	3	3	2	Blue-winged Warbler	3*	70	40	
Yellow-bel. Sapsucker	1	****	2	1	Tennessee Warbler	-	10	46	f.c.
Hairy Woodpecker	1 5	4	6	2	Nashville Warbler Parula Warbler	14	-	1	55.55
Downy Woodpecker	16	10	2	2	Yellow Warbler	82	3	5	6
Kingbird Crested Flycatcher	4	11	26	6	Magnolia Warbler	10	6	5	
Phoebe	22	6	1*	2	Cape May Warbler	21	1		
Acadian Flycatcher	, ,	9	4	f.c.	Black-thr. Blue Warbler		537	2.00	1
Least Flycatcher	28*				Myrtle Warbler	41	20	12	8
Wood Pewee	16	10	19	c.	Black-thr. Green Warbler	21	15	2	2
Horned Lark	5	2	in the same		Cerulean Warbler	4	5	1	c.
Tree Swallow	9	10	1		Blackburnian Warbler	4	5	2	3
Bank Swallow	****	2	-	****	Sycamore Warbler	****	-	6	3
Rough-winged Swallow	27	30	2	1	Chestnut-sided Warbler	29	15	2	3
Barn Swallow	12	5		2	Bay-breasted Warbler	3	5	****	8
Cliff Swallow	9	20	****	****	Black-poll Warbler	4	10	****	5
Purple Martin	8	12	4	1	Pine Warbler	2	4	****	****
Blue Jay	18	25	33	12	Prairie Warbler	1	2		6
Raven	1*	7.4			Palm Warbler	7	25	1 2	3
Crow	47	14	8	6	Ovenbird	33	6	1	f.c.
Black-capped Chickadee	2*	10	10	10	Louisiana Waterthrush Kentucky Warbler	7	8	8	4
Carolina Chickadee	27 14	10	4	f.c.	Mourning Warbler		0	0	3
Tufted Titmouse	14	12	1	1.0.	Maryland Yellow-throat	41	10	24	6
White-br. Nuthatch Red-br. Nuthatch	4*	****		*****	Yellow-breasted Chat	16	10	33	5
ned-br. Numuich		****	Pres		Tonon Dicasted Chat				

	Elizabethton & Roan Mtn.	Knoxville	Memphis	Nashville		Elizabethton & Roan Mtn.	Knoxville	Memphis	Nashville	
Hooded Warbler	6	2	14	5	Painted Bunting	****		5	****	
Wilson's Warbler	1		****		Dickcissel	****		200*	6	
Canada Warbler	9	3	- level	2	Purple Finch	4	6	6		
Redstart	20	10	18	5	Goldfinch	576	10	10	12	
English Sparrow	200	C.	16	25	Towhee	65	30	1	4	
Bobolink	51		14	12	Savannah Sparrow	-	3	4		
Eastern Meadowlark	55	10	18	5	Grasshopper Sparrow	22	5	3	6	
Red-winged Blackbird	21	25	33	3	Bachman's Sparrow	(seek			1	
Orchard Oriole	8	2	34	3	Junco	51*	1	****	****	
Baltimore Oriole	13	3	17	2	Chipping Sparrow	32	10	6	3	
Bronzed Grackle	181	10	62	4	Field Sparrow	55	10	3	6	
Cowbird	15	14	35	6	White-crowned Sparrow	33	-	3	1	
Scarlet Tanager	8	20	3	4	White-throated Sparrow	21	25	38	f.c.	
Summer Tanager	2	25	18	f.c.	Lincoln's Sparrow	1111		5	_	
Cardinal	52	40	63	c.	- Swamp Sparrow	6	2	5	****	
Rose-br. Grosbeak	26	5	3	4	Song Sparrow	89	15		***	
Indigo Bunting	44	15	129	c.	Total Species	115	107	115	107	

THE ROUND TABLE

UNUSUAL FLIGHT OF AMERICAN EGRET.—During a trip to Reelfoot Lake, Tennessee, on April 18, 1947, I observed what appeared to be an unusual flight of an American Egret. This bird seemed to be riding the air currents, and for perhaps 15 minutes I did not see the bird move its wings even once. The bird was perhaps 400 or 500 feet in the air, but was easily observed, and identification was certain. Such a flight is unusual for this group of birds. This particular bird seemed to be merely enjoying sailing about in the air riding the air currents.—CLARENCE COTTAM, Assistant Director, Fish and Wildlife Service, U. S. Department of the Interior.

SORA RAIL AT 3800 FT. ALTITUDE—At about 11 A.M. on May 7, 1947, Edmund Daly and Herrick Brown of the Water Control Department of Tennessee Valley Authority observed a Sora Rail near a pile of brush along the Appalachian Trail in the vicinity of McQueen's Knob fire tower on the crest of Holston Mountain above Shady Valley in Johnson County. The elevation of this point is 3800 feet. The Rail was on the ground and did not move until approached to within approximately five feet. Then it tried to hide by running to the other side of the brush pile and persisted in doing so when followed, until it finally disappeared in the undergrowth. Considering that the habitat and high elevation are unusual for a bird of this species, it is assumed the Sora was resting on its migration flight. The only other record of this species in the territory of the Elizabethton Chapter dates back to May 6, 1945, when, on the Chapter's Spring Field Day, one individual was seen by the writer in the Watauga River bottom lands above Elizabethton at an elevation of approximately 1600 feet.-FRED W. BEH-REND, 606 West "D" Street, Elizabethton, Tenn.

A MIGRANT SHRIKE CHASES A CARDINAL—On Sunday, February 23, 1947, I was sitting in my room when I heard something hit the window with a thud. When I went to the door to investigate, I saw a female Cardinal lying on the snow apparently dead. A Migrant Shrike was within a few feet of the Cardinal, and I could hardly frighten it away. Evidently the Shrike was chasing the Cardinal when she flew against my window. I picked her up and saw that she was still alive. I brought her into the warm room and kept her for several minutes and then released her from the room. She flew off readily seemingly none the worse for her experience.—GEORGE DAVIS, Middle Tennessee State College, Murfreesboro State College, Murfreesboro, Tenn.

DICKCISSELS IN THE KNOXVILLE AREA—On May 19th, 1947, an estimated four pairs of Dickcissels were discovered singing in a field of clover at the University of Tennessee Blount County Farm, which is located in Mimosa Heights one mile west of Rockford. One pair was engaged in coition. On June 4th I returned with Dr. Joseph C. Howell, who confirmed their identity. On this second trip the birds were heard singing in three adjacent fields belonging to the Tipton, Anderson, and University of Tennessee farms. No nests were sought, as our time was necessarily devoted to another matter.

This site has an elevation of approximately 900 feet, and is in the heart of one of the largest areas of fields in the Knoxville area.

This record is significant because of the rarity of Dickcissels during the nesting season this far east, G. S. Smith described two nests of this species found forty miles northeast of this area at Morristown in Hamblen County, published in the "Ooologist" for March 1870. Ruth Reed Nevius reported (MIGRANT 1944, p. 32) a pair in Green County and mentioned other Dickcissel records from near Maryville and Sweetwater, all in East Tennessee.—ARTHUR A. McMURRAY, University of Tennessee, Knoxville, Tenn.

TWO NEW BIRDS FOR SHADY VALLEY—In the month of June, 1934, Messrs. A. F. Ganier and Bruce P. Tyler spent a week in Shady Valley, in Johnson County in extreme northeastern Tennessee, studying the birds and enjoying the hospitality of the Valley. An account of this trip, with a list of the birds observed, is given in THE MIGRANT for June 1934 (Vol. 5, p. 21), written by the golden pen of Mr. Ganier, which paper should be read as being introductory to this. It is the object of this item to report to the T. O. S. the appearance in Shady Valley of one bird not heretofore recorded as nesting in the Valley and one not before listed as appearing in Tennessee.

On May 24, 1947, Bruce P. Tyler and Robert B. Lyle spent the day in Shady Valley, listing fifty-four species, among which are the following:

ARKANSAS KINGBIRD (**Tyrannus verticalis**). A pair of these birds was observed at the lower end of Shady Valley, where Beaver Dam Creek passes the Backbone Rock. The birds were very tame and gave abundant time for observation and study as they fed on insects over the creek, returning

continually to perches on the face of the cliff.

Dr. Roberts reports this western species as drifting eastward, and in 1934, as being common as far east as the Mississippi River. Forbush and May note the same tendency to move eastward. Chapman lists it as accidental but extending eastward. It may be that this beautiful and interesting bird is making its bow to Tennessee.

HOUSE WREN (Troglotydes aedon). Our attention was called to this bird by its characteristic song. The nest was soon located in a hole in the top of a fence post in cleared land, and was found to contain two eggs. The House Wren has lived rather abundantly in the valley extending from Bristol to Roanoke, Virginia, but it rarely crosses the line into Tennessee. Mr. Lyle has a record of a House Wren nesting in 1913 near Johnson City. In 1945 there were two birds singing in separate parts of Johnson City; no nests were located and the birds did not appear in following years. Since 1910 the Bewick's Wren has been the regular wren building about houses in the Johnson City area. Recently the Bewick's Wren has appeared in greatly reduced numbers. When these two Wrens meet, they fight to the death. It may be that time will replace the Bewick's with the House Wren in this locality.

Another bird observed on this trip was a single female Wild Turkey, seen just above the road near Backbone Rock. Reports have it that these birds are not uncommon in the mountains above the Valley, but they have apparently not been recorded before on field trips and census in this area. —BRUCE P. TYLER and ROBERT B. LYLE, Johnson City, Tennessee.

THE 1947 ANNUAL MEETING OF THE T. O. S.

The annual meeting of the Tennessee Ornithological Society was held in Nashville on May 10 and 11, 1947. Activities began on Saturday, May 10, with a field trip to Radnor Lake. From there the group, in a motorcade of about eight cars, traveled to Dr. Spofford's home to see his falcons and Bald Eagle, to Mrs. Laskey's home to see her bird-banding station and records, to a restaurant for lunch, and finally to Mr. Ganier's home to inspect his collections and library. The business meeting of the Board of Directors was held in Mr. Ganier's yard that afternoon; this meeting was frequently interrupted by some member of the board raising his binoculars to study a bird in the trees overhead.

In the evening an informal dinner was held at the B. and W. Cafeteria, and this was followed by an entertaining round of stories, introductions, and reminiscences. Several of the visitors slept that night at the cabins of some of the Nashville members on Stone River.

Sunday began early for those on Stone River with a field trip in that vicinity. At 8:00 A.M. the entire group met in Nashville, and then drove to Indian Lake. The field trip held there is described elsewhere in this issue. In the early afternoon a picnic lunch was eaten, and then the annual meeting of the T.O.S. was held under the trees. At the adjournment of this meeting the group separated to all corners of the state.

At the business meeting of the Board of Directors on Saturday afternoon, sixteen directors or their proxies and officers of the Society were present. The primary business of this meeting was the discussion and preparation of resolutions to be acted upon by the membership meeting on the following day. At the membership meeting on May 11th at Indian Lake, ninety-one members and guests were present. Dr. L. R. Herndon presided at both meetings, and the Secretary, Mr. Fred W. Behrend, recorded the minutes of the meetings. The following paragraphs are quoted from the Secretary's minutes of the second meeting and describe the most important business transacted:

"Without discussion the following resolutions adopted by the Board of Directors in their meeting on May 10, 1947, were, on motion duly made and seconded, voted on by the members and unanimously carried:

"To adjust membership dues as follows: Life members \$50.00, Sustaining members \$5.00 per year (\$4.00 to go to the Society, \$1.00 to remain with the Chapter), Active members \$1.50 per year (Chapters may add to this not exceeding \$.50), Corresponding members and subscribers to THE MIGRANT \$1.00 per year, Junior members (under 17 years of age) \$1.00 per year; and to accept, at chapter discretion, family memberships and memberships of institutions and organizations such as museums, scout troops, etc., the dues of such memberships to be at the rate of dues for one person, namely, \$1.50 per year.

"To waive the provision of the Society's constitution requiring 30 days notice in writing to the Active members prior to the next annual meeting with respect to amendment of the constitution necessary as a result of the aforementioned adjustment of dues, and to make the new rates of dues effective January 1, 1948.

"To refer proposed revision of the Society's constitution to a committee to be appointed by the President, this committee to submit its recommendations in time sufficient to give thirty days written notice to the Active members prior to the next annual meeting, as required by the constitution, of changes contemplated. Whereupon the President appointed a committee of three, comprised of Dr. George R. Mayfield (Chairman), Mr. Ben H. Abernathy and Mrs. Emily Barry Walker, all of the Nashville Chapter, to study and report proposed revision of the constitution in accordance with the above."

"The question of raising an amount of approximately \$150.00 to bring the monies accumulated in the Society's Endowment Fund up to \$450.00 and match an equal amount still in possession of the Tennessee Audubon Society and available to T.O.S. if and when matched, was discussed. Motion was made, seconded and carried to initiate a campaign towards raising the sum of \$150 and approve recommendation made by the Board of Directors in their meeting on May 10, 1947, to place administration and investment of the Fund in the hands of the Finance Committee, with the cooperation of Mr. Ben H. Abernathy, member of the Middle Tennessee grand division of the committee to promote the Endowment. Mr. Dixon Merritt, making a contribution to the Fund on the spot, invited the others present to follow suit, with the result that a total of \$83.00 was donated (by twenty individuals or couples) in cash or pledges, leaving a balance of approximate-

ly \$70.00 to be raised by July 1 latest. The President expressed himself to the effect that one way of obtaining this amount would be allocation among the chapters of the three grand divisions. He felt sure the East Tennessee grand division would raise its share by that date.

"The President urged that the membership committees of the various chapters endeavor to secure additional members and in particular solicit membership of younger prospects. Mr. Ganier commended the outstanding job done in this respect by the Memphis Chapter.

"The meeting, on motion duly made, seconded and unanimously carried, accepted the resolution adopted by the Board of Directors in their meeting on May 10, 1947, to petition the United States Fish and Wildlife Service to shorten the hunting season of migratory waterfowl to thirty days, the daily bag limit to five birds, and the possession limit to five birds. The President instructed the Secretary to prepare and file the petition with the Fish and Wildlife Service."

"The President asked Dr. Mayfield to conduct proceedings for the nomination and election of State officers to serve during the year 1947/48. Upon suggestion of Mr. Mayfield, the meeting approved action taken by the Board of Directors on May 10 in recommending continuation of present State officers in office for the year 1947/48, and in accordance therewith reelected officers unanimously by acclamation as follows: President, Dr. Lee Roy Herndon; Secretary, Mr. Fred W. Behrend; Treasurer, Mr. Lawrence C. Kent; Curator, Mr. Albert F. Ganier; Editor, Dr. James T. Tanner."

In addition, the following individuals were elected unanimously for these offices: Mrs. M. L. Torti of Memphis as Vice President for West Tennessee; Mrs. Emily Barry Walker of Nashville as Vice President for Middle Tennessee; Miss Elise Morrell of Knoxville as Vice President for East Tennessee; Reverend Robert L. Witt of Henderson as Director-at-Large for Middle Tennessee; and Mr. Robert J. Dunbar of Oak Ridge as Director-at-Large for East Tennessee.

Of the 91 people attending the annual meeting, 60 were from Nashville; 11 each from Knoxville and Memphis; 2 each from Elizabethton, Oak Ridge, and Hopkinsville in Kentucky; and 1 each from Kingsport, Lebanon, and Murfreesboro. All visitors were grateful to the Nashville Chapter for the excellent program, the fine lunch on the field day, and the hospitality shown everywhere. All agreed that it was a successful meeting.

NOTES HERE AND THERE

An ornithology course is being taught this summer at the University of Tennessee for the first time in several years. Thirteen students are enrolled, including three T. O S. members of the Knoxville area who are auditing the course. It is being taught by Dr. J. C. Howell and Dr. J. T. Tanner.

The Elizabethton Chapter has planned an excellent series of programs and field trips for the remainder of the year. Perhaps most interesting is a well planned series of field trips to observe the fall migration of hawks along the mountain ridges. There will be more on this subject in the September issue of THE MIGRANT, as this idea can be developed into a valuable cooperative project for the T. O. S.

THE MIGRANT

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June

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Fred W. Behrend, Secretary, 606 West "D" St., Elizabethton, Tenn, Lawrence C. Kent, Treasurer, 1896 Cowden Ave., Memphis 4, Tenn.

All items for publication should be sent to

James T. Tanner, Editor, Department of Zoology, University of Tennessee, Knoxville, Tennessee

The Tennessee Ornithological Society was founded, October 1915.
Publication of THE MIGRANT was begun, March 1930.

The simple truth about birds is interesting enough; it is not necessary to go beyond it.

EDITORIAL

Ducks are few, and many people are worried about their scarcity. From the 1930's to 1944 the waterfowl increased in numbers and their future seemed bright, then came the decline. The number of ducks on the continent in January 1946, estimated by the Fish and Wildlife Service, is less than half of the 1944 estimate—a decrease of more than fifty percent in two years. During the same years the number of duck hunters has increased. These two opposing trends are the causes of the worry. No person has yet confidently put his finger on the cause or causes of the decline in the number of ducks, but everyone concerned has decided that something needs to be done.

What should be the attitude to this problem of the student of birds? There is a great temptation to say, "Let the duck hunter worry about it; if he kills all of the ducks, that will show him!" But further thought will find reason why we should be interested, and actively interested. First, extinction is irreversible; if all the ducks of any species were killed, never again would we see even one of them. Then it would be too late. Secondly, we do like to see and watch ducks. As reservoirs are being created in Middle and East Tennessee, many people are looking forward to seeing more and more ducks upon them. And we hope that those who follow us will be able to see and enjoy them. Lastly, as students of birds, we should have some appreciation of the nesting, feeding, and migration habits affecting the numbers of ducks. Our opinion should carry some weight, and that authority entails responsibility.

Some action has already been taken; the T. O. S. at its annual meeting approved a resolution, later forwarded to the Fish and Wildlife Service, that the season and bag limit be reduced. Probably the most important way, in the long run, in which we can help is this: To see that our federal technicians and officers in the Fish and Wildlife Service are and remain the best men available, and then to support their expert judgements and decisions made for the best interests of all.

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