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# THE MIGRANT

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## A COMPARISON OF CEILOMETER MORTALITY AT KNOXVILLE AND NASHVILLE, TENNESSEE, IN 1951 AND 1954

By J. C. Howell

### INTRODUCTION

In recent years many thousands of birds have died at airport ceilometers. It is now known that this mortality is more likely to occur in the fall than in the spring and that it occurs only when certain factors coincide; these are an overcast at 5000 feet or less, a wind with a velocity of at least five miles an hour from the north, and a large volume of migration. It might be added that these weather conditions usually are associated with a cold front.

Mrs. Amelia R. Laskey, James T. Tanner, and I recently studied a number of examples of ceilometer mortality (Howell, Laskey, and Tanner, 1954). We concluded that the probable cause of death was aerial collision between migrants followed by flying or falling against the ground. While we could not report an actual eyewitness account of aerial collision between migrants such collisions have since been witnessed by Capt. R. L. Edwards, at Maxwell Air Force Base, on the night of October 7-8, 1954.

This paper compares the birds killed at two airport ceilometers, one at Knoxville in East Tennessee, and the other at Nashville, 150 airline miles to the west. On the night of October 7-8, 1951, there were 1044 identifiable dead birds of 46 species at Knoxville and 448 dead birds of 40 species at Nashville (Howell and Tanner, 1951; and Laskey, 1951). On October 6-7, 1954, there were 267 identifiable dead birds of 26 species at Knoxville and 255 dead birds of 21 species at Nashville (Tanner, et al, 1954). These data permit us to compare the mortality at Knoxville with that of Nashville. And because the dates are almost the same, they also permit a comparison of the mortality in 1951 with that of 1954.

Table 1 provides us with the basis for the comparisons mentioned above. In the table appear the 15 species having the greatest total mortality at the two stations for the two years. The tabulations are divided into two halves. Each half is in turn divided into two equal parts. The parts of the first half are headed by 1951 and 1954 respectively, and beneath the year in each case is a separate heading for Knoxville and Nashville. The first half is devoted to a comparison of places. The second half of the table is headed by the places, Knoxville and Nashville, with subheadings in each case for the two years. The second half is devoted to a comparison of years.

In the case of the Ovenbird the first section of the first half of the table shows that in 1951 there were 387 individuals killed at Knox-

ville and 57 at Nashville. A chi-square statistical test indicates that the number killed at Knoxville is very significantly greater; the double asterisk in the table indicates that the difference is so great as to be significant at the 1% level (less than one chance in a hundred that the difference is only an accidental difference). In the second section of the first half of the table we find that there was again in 1954 a very significantly greater number of Ovenbirds at Knoxville than at Nashville.

There were three species which were killed in significantly greater numbers at Knoxville than at Nashville in 1951 but not in 1954; these were the Bay-breasted, Blackburnian, and Hooded Warblers. At Knoxville in 1954, but not in 1951, there were significantly higher numbers killed of Red-eyed Vireo, Scarlet Tanager, and Olive-backed Thrush. One species, the Chestnut-sided Warbler, died in significantly greater numbers at Knoxville in 1951, but reversed its numerical status to appear in significantly higher numbers at Nashville in 1954.

At Nashville in both 1951 and 1954 significantly higher numbers of Tennessee and Magnolia Warblers and Indigo Buntings died than expected. Two species were killed in significantly greater numbers than expected at Nashville in 1951, but not in 1954; these were the Yellowthroat and the Philadelphia Vireo. No species occurred in the mortality in significantly greater numbers than expected at Nashville in 1954 but not in 1951 (except in the case of the Chestnut-sided Warbler cited above).

The second half of the table is arranged to show comparisons in mortality between years at Knoxville and Nashville. At Knoxville only the Ovenbird died in significantly higher numbers in 1951 than in 1954. At Knoxville in 1954 the Red-eyed Vireo and the Olive-backed Thrush suffered higher mortality than expected. No species that had an unexpectedly high mortality for either year at Knoxville also had an unexpectedly high mortality at Nashville on the same year.

At Nashville in 1951 unexpectedly high mortality effected the Yellowthroat and the Philadelphia Vireo, while in 1954 unexpectedly high mortality was suffered by the Magnolia, Chestnut-sided, Black-throated Green, and Black and White Warblers.

## DISCUSSION

It might well be expected that a consistent pattern of ceilometer mortality would exist for each species at each place and on each year. Yet our results clearly show that this is not the case for at least certain species. The chi-square tests show that there are significant differences occurring between the migrating populations sampled by means of the mortalities taking place.

The commonest species killed at the Knoxville Airport ceilometer in both 1951 and 1954 is the Ovenbird. Yet on Knoxville bird lists for the same season the Ovenbird is much less common than many species which were represented in the mortality at a much lower level than the Ovenbird. The same situation exists at Nashville with respect to the Philadelphia Vireo. It is considered a rare species by field observers, yet it ranked fourth in the ceilometer mortality for 1951. In the cases of both of these species the disagreement regarding their correct numerical

**TABLE 1**  
**COMPARISON OF CEILOMETER MORTALITY**  
**AT KNOXVILLE AND NASHVILLE, 1951 AND 1954**  
**Only the 15 species with the highest mortality are compared**

If neither number is marked with an asterisk, there is no significant difference between the numbers killed at either place or in either year. Marked numbers are significantly higher, indicating a greater than chance mortality at one place as compared with the other. A single asterisk (\*) indicates that the difference is significant at the 5% level as determined by a chi-square test; two asterisks (\*\*) indicates significance at the 1% level.

	1951		1954		Knoxville		Nashville	
	Knox.	Nash.	Knox.	Nash.	1951	1954	1951	1954
Total birds killed	1044	448	267	255	1044	267	448	255
Ovenbird	**387	57	**81	37	*387	81	57	37
Tenn. Warbler	80	**100	25	**50	80	25	100	50
Magnolia Warbler	61	**71	15	**66	61	15	71	**66
Chestnut-sided Warbler	*90	22	18	*30	90	18	22	**30
Bay-breasted Warbler	*63	14	13	8	63	13	14	8
Red-eyed Vireo	42	11	**26	7	42	**26	11	7
Yellowthroat	32	**34	3	1	32	3	**34	1
Indigo Bunting	21	**26	4	*12	21	4	26	12
Scarlet Tanager	33	8	**14	1	33	14	8	1
Blackburnian Warbler	**39	3	7	4	39	7	3	4
Black-thr. Green Warbler	25	9	6	12	25	6	9	*12
Philadelphia Vireo	4	**37	5	3	4	5	**37	3
Hooded Warbler	**35	0	6	0	35	6	0	0
Blk. and White Warbler	14	3	8	13	14	8	3	**13
Olive-backed Thrush	17	4	**11	0	17	*11	4	0

status may be explained in terms of their inconspicuousness. The number of Ovenbirds and Philadelphia Vireos seen by the field observer is probably only a small per cent of those actually present. A comparison of the number of individuals recorded by the two methods might serve as a basis for a rating of the conspicuousness of a species.

In comparing ceilometer mortality and field trip data it is important to note that ceilometer mortality represents only those individuals which were actively migrating. This might explain in part why the Indigo Bunting, for example, appears less common in ceilometer mortality figures than in those of field trips. On field trips Indigo Buntings are counted whether they are birds resident in the area at the time or individuals which are transients.

If account is taken of the difference in conspicuousness among species and the fact that only the actively migrating individuals will occur in examples of ceilometer mortality, then it is at least possible that the birds killed at ceilometers constitute a random sample of the migratory bird population for each place and date. However, before we can state with confidence that the birds killed are a true random sample we need additional data. Perhaps there are some species which characteristically migrate above the floor of a cloud ceiling and thus escape the ceilometer beam. Possibly there are differences in the degree to which different species are attracted to a beam of light in the night sky. The size of the migrant may be important in determining the effect, and the likelihood, of an aerial collision.

That significant differences exist for a particular species in the size of the migratory population from one place to another and one year to the next indicate that at least on a population basis there is flexibility in the migration route used from one year to the next. As an example of this we may cite the Chestnut-sided Warbler which showed a significantly higher mortality at Knoxville in 1951 and yet had a significantly higher mortality at Nashville in 1954.

Only the 15 species having the highest mortality were carefully studied. There was little of an unexpected nature found during a brief consideration of the remaining 42 species killed at the ceilometers. It is of some interest, perhaps, that one specimen of Swainson's Warbler died at Knoxville although this species has never been reported in the field from this area. The relatively small numbers of the four fringillid species killed may perhaps be significant although some of them are commoner as migrants later in the fall. By contrast there were 27 species of parulids, 10 of which were listed among the 15 species having the highest mortality. No migratory species which might surely be expected at these places and dates was missing.

#### ACKNOWLEDGMENT

I am indebted to Mrs. Amelia R. Laskey and Mr. Albert Ganier for a carefully identified and complete list of the birds killed at Nashville. Dr. James T. Tanner and I are equally responsible for the identifications of the birds killed at Knoxville.

#### SUMMARY

From a study of the 15 species having the highest mortality among a group of 57 species killed at the Knoxville and Nashville ceilometers on October 7-8, 1951, and October 6-7, 1954, the following may be summarized:

1. The 15 species are: Ovenbird, Tennessee Warbler, Magnolia Warbler, Chestnut-sided Warbler, Bay-breasted Warbler, Red-eyed Vireo, Yellowthroat, Indigo Bunting, Scarlet Tanager, Blackburnian Warbler, Black-throated Green Warbler, Philadelphia Vireo, Hooded Warbler, Black and White Warbler, and Olive-backed Thrush.

2. Ceilometer mortality figures show that Knoxville and Nashville had significantly different migratory populations passing over them at the times concerned. There were more significant differences in popula-

tions between the two locations than between the two years, indicating that Knoxville and Nashville are on different migration routes.

3. The Ovenbird was significantly higher both years at Knoxville, and the Tennessee and Magnolia Warblers and Indigo Bunting were significantly higher both years at Nashville.

4. Only one species, the Chestnut-sided Warbler, experienced a significantly greater mortality at one place on one year and at the other place on the other year.

5. Eight species had significantly higher mortality than expected at one place or the other for one year, but not for both years.

6. No species that had a significantly high mortality for either year at Knoxville also had a significantly high mortality at Nashville on the same year.

7. Due to differences in conspicuousness and to other factors there was not close agreement as to order of abundance between the population of migrants as measured by ceilometer mortality figures and field trip lists.

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#### BINDING OF "THE MIGRANT"

This issue marks the end of another set of three volumes of THE MIGRANT, and it includes an index covering 1953-54-55. Many individuals like to have the twelve issues published during these three years bound together into one book. A title sheet to bind with the three volumes is being printed, and may be obtained upon request from James T. Tanner, Department of Zoology, University of Tennessee, Knoxville.

**THE 1955 CHRISTMAS SEASON BIRD COUNTS****By T. O. S. Members**

Three species were seen for the first time on Christmas bird counts in Tennessee; a Greater Scaup Duck and a Red-backed Sandpiper were found at Nashville, and a Lark Sparrow at Lebanon. Western Meadowlarks at Memphis and a Grasshopper Sparrow at Reelfoot Lake mark the second time for each of these species. Other unusual records are of Loon, Green Heron, Black-crowned Night Heron, Rough-legged Hawk, Ring-necked Pheasant, Short-eared Owl, and Evening Grosbeak. The total list includes 122 species, which ties the high record set last year. The count from Reelfoot Lake has both the largest number of species and of individuals.

Two flocks of Evening Grosbeaks were seen in the Great Smoky Mountains. Evening Grosbeaks were seen in several localities last winter and have also been reported in earlier years, but this is the first time that these northern birds have come this far south in two successive winters.

In the table and descriptions that follow, the localities are listed from west to east. The details of the separate counts are included under "Information on the Counts"; lack of space prohibited listing all of the participants. For additional information on records marked with an asterisk (\*) in the table, see the paragraphs containing information on the locality.

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MEMPHIS, TENN. (1953 areas generally; wooded bottomlands 25%, deciduous woodlands including city parks 20%, pastures, airfields, and farms 25%, suburban roadsides 25%, island willow thickets and river's edge 5%). Dec. 26, 1955; 6:45 a.m. to 5:15 p.m. Overcast a.m., partly cloudy p.m.; temp. 47 to 52 degrees; wind NE, 5-12 mph. 30 observers in 8 parties. Total party-hours 107 (82 on foot, 25 by car); total party-miles 229 (73 on foot, 156 by car). 81 species, about 1,210,459 individuals. Ben B. Coffey, Jr., (compiler), 672 Belvedere Blvd., Memphis 7.

An estimated 1,200,000 birds: Starlings, Red-winged Blackbirds, Purple Grackles, and Cowbirds, were seen at the roost on President Island. The Sharp-shinned Hawk was identified by Edwin Poole, the Rough-legged Hawks by Harry H. Wilcox and R. Demett Smith, the Catbird by S. J. Rini, the Blue-headed Vireo by Harry Landis, Jr., and Lula Coffey, and the LeConte's Sparrow and Smith's Longspur by Ben Coffey. Both Harris's Sparrow and Western Meadowlark were identified by two different parties.

REELFOOT LAKE, TENN. (same area as in past; lake 25%, marsh 8%, roadside 12%, fields, farms, and pasture 10%, cypress swamp 10%, wooded bottoms 25%, wooded hillsides 10%). Dec. 26, 1955; 6:45 a.m. to 5:15 p.m. Clear; temp. 45 to 53 degrees; wind NE, 20 to 25 mph. 11 observers in 4 parties. Total party-hours 40 (26 on foot, 4 by car, 10 by boat); total party-miles 147 (35 on foot, 80 by car, 32 by boat). 86 species estimated 4,530,426 individuals. Howard Barbig (compiler) Route 10, Memphis, Tenn.

The estimated numbers for each of the following species were: Canada Goose, 2,600; Mallard, 70,000; Gadwall, 2,050; Ring-necked Duck, 20,000; Canvasback, 1,202; Lesser Scaup, 4,041; Hooded Merganser, 2,002; Starling, 20,000; Red-winged Blackbird, 4 million; Purple Grackle, 400,000; Cowbird, 5,000.

This is the second appearance of the American Egret on the Reelfoot Christmas count, but the bird is being seen more frequently in December in West Tennessee and Eastern Arkansas. In 1951 we recorded 32 on Horseshoe Lake, Arkansas, and on Dec. 20, 1952, 29 were recorded at Reelfoot Lake. On Dec. 24, 1955, Mrs. Barbig and I saw two American Egrets in company with a Snowy Egret in the Census area. The yellow toes of the Snowy were observed at reasonably close range with a 30x telescope. Personnel of the Reelfoot Lake Waterfowl Refuge have had 19 small Canada Geese under observation for some time; they have been tentatively identified as the subspecies called Richardson's Canada Goose. Two of these were seen on the census day. The Grasshopper Sparrow was observed by Mary Lou Cypert and the Chipping Sparrows by Hunter Hancock and Charles McPherson. Species seen in the area within the Count period but missed on Dec. 26 were, besides the Snowy Egret, Turkey Vulture, 1; Pipit, 8; Rusty Blackbird, 29.—HOWARD BARBIG.

JOHNSONVILLE, TENN. (7 1/2 mile radius centering at the Johnsonville Steam Plant, including parts of the Tennessee National Wildlife Refuge, the Duck River dewatering area, portions of Kentucky Lake, and extending west to Camden; river bottom farm land 50%, marshes 10%, open water and shoreline 20%, urban 5%, highways 5%, brush land 5%, hardwood bordered sloughs 5%). January 2, 1956; 7 a.m. to 5 p.m. Clear; temp. 44 to 60 degrees; wind SW to NW, 0 to 20 mph; ground comparatively dry, marshes mostly dry. 23 observers in 5 parties. Total party-hours 36 (27 on foot, 8 by car, 1 by plane); total party miles 250 (20 on foot, 160 by car, 70 by plane. 73 species; about 70,398 individuals. Eugene Cypert (compiler), Paris, Tenn.

The estimated numbers of the more abundant species were: Canada Goose, 2,550; Mallard, 45,000; Gadwall, 1,000; Pintail, 2,000; Ring-billed Gull, 1,000; American Crow, 5,000; Red-winged Blackbird 7,000; Purple Grackle, 2,000. The Lincoln's Sparrow was identified by Howard Barbig.

NASHVILLE, TENN. (same area as covered in previous years). Dec. 26, 1955; 6:30 a.m. to 5:30 p.m. Weather "perfect". 27 observers in 9 parties. 77 species, about 10,800 individuals. Albert F. Ganier (compiler), 2112 Woodlawn Drive, Nashville 12.

The Greater Scaup Duck was identified by John Ogden and Mrs. Bell on Bush's Lake at a distance of 40 feet and apart from about 90 other ducks. The Ring-necked Pheasant was a wild bird. The Red-backed Sandpiper has been present since October. The number of Starlings reported was 6,700.

LEBANON, TENN. (radius of 6 miles from Lebanon). Dec. 31, 1955; 6 a.m. to 4:30 p.m. Fair; temp. 20 to 45 degrees; wind N. Ten observers. 51 species, 1,280 individuals. Dixon Merritt (compiler), Lebanon. The Green Heron was reported by Miss Martha Campbell and her sister; they say that the bird had been on and around a pond on the Campbell farm four miles west of Lebanon all winter, but has apparently gone since the

count. Mr. Merritt writes, "I found the Lark Sparrow west of my home toward the Gladeville area where Lark Sparrows have been unusually numerous in summer for several years. I was watching a flock of Purple Finches when I spotted the sparrows. I had a close view of him and was able clearly to observe the tail pattern, the breast spot, and the ear patches."

CHATTANOOGA, TENN. (Same area as in previous years). Dec. 31, 1955; 7:45 a.m. to 4:45 p.m. Clear; temp. 20 to 45 degrees; wind 0-3 mph. 9 observers in 3 parties. Total party-hours 18 (14 on foot, 4 by car); total party-miles 124 (8 on foot, 116 by car). 61 species, about 2,500 individuals. Mrs. Eugene M. West (compiler), 1625 S. Clayton Ave., S. E., Chattanooga 11.

GREAT SMOKY MOUNTAINS NATIONAL PARK, TENN.-N. C. (same as 1937 and subsequent years). Dec. 26, 1955; 6:30 a.m. to 5:30 p.m. Mostly overcast; temp. 32 to 48 degrees; wind light, NE, under 10 mph; ground bare in lowlands, some snow in shade at high altitudes. 27 observers in 10 parties. Total party-hours 80 (70 on foot, 10 by car); total party-miles 188 (81 on foot, 107 by car). 56 species, 3,040 individuals. Arthur Stupka (compiler), National Park Service, Gatlinburg, Tenn.

A total of 251 Black-capped and Carolina Chickadees was reported. The Catbird, reported for the first time on a Christmas Count in this area, was observed at close range by Dorothy MacLean; it has been present in Gatlinburg for several weeks previous to the Count. A flock of 45 Evening Grosbeaks was observed by Stupka four miles east of Gatlinburg and was approached to within 20 feet while feeding on sumac fruits; Stupka observed another flock of 30 birds in red spruce and yellow birch trees at Collins Gap, elevation 5,700 feet.

GREENEVILLE, TENN. (Same area as in previous years). Dec. 27, 1955; 7:15 a.m. to 5 p.m. Clear; temp. 31 to 45 degrees; wind 2 to 10 mph. 7 observers in 5 parties. Total party-hours 30, total party-miles 47 (10 on foot, 37 by car). 57 species, about 5,493 individuals. Mrs. Richard Nevius (compiler), Route 1, Greeneville. The number of Crows reported was about 2,000, of Starlings about 1,800.

KINGSPORT, TENN. (Same area as last year). Dec. 26, 1955; 7:15 a.m. to 5 p.m. Cloudy and windy; temp. 30 to 50 degrees. 18 observers in 10 parties. Total party-hours 50. 51 species, 7,580 individuals. Thomas W. Finucane (compiler), 1434 Watauga Street, Kingsport. The Herring Gulls were observed by Ann Switzer, the Palm Warblers by George Rodgers, who observed their tail-wagging, etc. An estimated 1,000 Starlings were reported.

ELIZABETHTON, TENN. (Same area as in previous years). Jan. 1, 1956; 5 a.m. to 5:30 p.m. Clear; temp. 20 to 45 degrees; wind 0 to 5 mph. 8 observers in 6 parties. Total party-hours 47 (28 on foot, 19 by car); total party-miles 187 (28 on foot, 159 by car). Total species 55, about 3,053 individuals. Lee R. Herndon (compiler), 1533 Burgie Place, Elizabethton. Three new species were added to the Christmas Count list for this area: Common Loon, Great Blue Heron, Wood Duck. They have all been observed before at this season of the year.

	Memphis	Reelfoot	Johnsonville	Nashville	Lebanon	Chattanooga	Great Smokies	Greeneville	Kingsport	Elizabethton
Common Loon	---	---	---	---	---	1	---	---	---	*2
Horned Grebe	---	---	---	---	---	1	---	---	---	2
Pied-bl. Grebe	2	1	3	2	---	---	---	---	1	8
Db.-c. Cormorant	---	29	500	---	---	---	---	---	---	---
Grt. Blue Heron	2	57	299	2	---	---	1	2	1	*1
American Egret	---	*1	---	---	---	---	---	---	---	---
Green Heron	---	---	---	---	*1	---	---	---	---	---
Black-cr. Nt. Heron	---	---	---	1	---	---	---	---	---	---
Canada Goose	40	*	*	---	---	8	---	---	3	---
Blue Goose	---	---	11	---	---	---	---	---	---	---
Mallard	25	*	*	38	---	200	---	57	402	3
Black Duck	---	340	450	3	---	150	1	80	50	2
Gadwall	---	*	*	---	---	---	---	---	---	---
Baldpate	---	212	90	4	---	---	---	---	---	---
Pintail	15	24	*	---	---	---	---	2	---	---
Grn-wg. Teal	---	24	4	1	---	---	---	---	---	---
Blue-w. Teal	---	1	---	---	---	---	---	---	---	---
Shoveller	---	781	---	---	---	---	---	---	---	---
Wood Duck	---	3	3	---	---	---	---	---	1	*1
Redhead Duck	---	3	---	---	---	---	---	---	---	---
Ring-nk. Duck	2	*	12	62	---	300	---	---	---	---
Canvasback	2	*	---	20	---	---	---	---	4	---
Grt. Scaup Duck	---	---	---	*1	---	---	---	---	---	---
Lsr. Scaup Duck	180	*	---	22	---	---	---	---	48	2
Am. Golden-eye	---	18	---	7	---	---	---	---	---	1
Bufflehead	---	2	7	---	---	---	---	---	---	9
Ruddy Duck	---	41	---	---	---	---	---	---	---	---
Hood. Merganser	---	*	16	2	---	1	---	---	---	---
Amer. Merganser	---	---	---	1	---	---	---	---	---	---
Turkey Vulture	3	---	---	---	---	---	6	17	6	1
Black Vulture	6	20	2	11	6	---	---	5	8	---
Sharp-sh. Hawk	*1	---	---	---	---	---	---	---	---	---
Cooper's Hawk	3	2	---	1	1	---	2	3	1	1
Red-tld. Hawk	27	11	29	8	3	4	1	1	---	1
Red-shld. Hawk	9	1	3	---	---	---	---	---	---	---
Rgh-legd. Hawk	*2	---	---	---	---	---	---	---	---	---
Bald Eagle	---	19	13	---	---	---	---	---	---	---
Marsh Hawk	4	4	21	5	---	1	---	1	---	---
Duck Hawk	---	1	---	---	---	---	1	---	---	---
Sparrow Hawk	40	6	6	13	2	9	2	9	4	6
Ruffed Grouse	---	---	---	---	---	---	5	---	---	---
Bob-white	154	1	20	24	---	15	8	9	---	---

	Memphis	Reelfoot	Johnsonville	Nashville	Lebanon	Chatanooga	Great Smokies	Greeneville	Kingsport	Elizabethton
Rng-n. Pheasant				* 1						
Coot	2	150								
Killdeer	79	8	40	80	18	53	40	14	18	8
Wilson's Snipe				2				1		
Red-b. Sandpiper				* 1						
Herring Gull	2	2	9			3			* 2	
Ring-bil. Gull	250	141	*	1		50				
Mourning Dove	266	34	207	100	30	71	45	144	91	179
Screech Owl	1		1		1	1				
Gr. Horned Owl	1	3		2	2		1			
Barred Owl	2	3	1	2						
Sht-eared Owl				1						
Blt. Kingfisher	12	7	4	10		3	7	2	4	8
Flicker	152	35	14	34	15	6	4	16	7	18
Pil. Woodpecker	1	6	3	16	12	1	14	2	4	7
Red-bel. Wdpkr.	72	39	19	28	14	4		6	3	
Red-hd. Wdpkr.	88	2	1			1		6	1	
Yl-bl. Sapsucker	11	3	6	2	5	1	4	2	2	4
Hr. Woodpecker	20	2	1	9	9	1	9	1		3
Dn. Woodpecker	74	29	16	98	19	9	34	14	14	26
Phoebe	2	2	1	2	3	2	10	6	8	3
Horned Lark	392	2		190	30		65	35		
Blue Jay	534	38	47	22	6	57	20	50	35	50
Raven							5			
Amer. Crow	76	210	*	280	97	65	246	*	104	369
Crln. Chickadee	186	63	59	196	21	41	*	108	150	47
Tuft. Titmouse	122	41	30	134	41	48	61	45	58	45
Wh-b. Nuthatch	3	2		1	2	11	2	3	4	
Rd-b. Nuthatch							77			
Brown Creeper	12	5	3	12	7	1	16		1	4
Winter Wren	9	3	1	6	3		10	3		1
Bewick's Wren	1	2	7	17	22	1		1		
Carolina Wren	138	29	30	81	17	12	40	66	33	49
Mockingbird	166	13	30	80	34	35	12	47	35	55
Catbird	* 1						* 1			
Brn. Thrasher	42	1				1				
Robin	975	8	21	143	63	6	425	18	18	52
Hermit Thrush	25		3	5	1		29	3	2	3
Bluebird	32	25	92	184	22	28	83	36	79	56
Gld-cr. Kinglet	59	14	8	9	1	3	73	4		6
Rub-cr. Kinglet	9	1	2	3	1	3	3			4
Pipit			8	9						
Cedar Waxwing	98		20	128	1	10	20	50	1	300

	Memphis	Reelfoot	Johnsonville	Nashville	Lebanon	Chattanooga	Great Smokies	Greeneville	Kingsport	Elizabethton
Lgr-hd. Shrike	40	23	10	10	6	6	3	6		9
Starling	*	*	830	*	204	160	89	*	*	600
Blue-hd. Vireo	*1									
Myrtle Warbler	118	3	2	49	1	3	28	27	51	162
Pine Warbler						1			3	1
Palm Warbler				3					*3	
House Sparrow	544	20	42	160	147	15	83	100	250	251
E. Meadowlark	395	19	132	147	21	237	45	53	9	78
W. Meadowlark	*3									
Rd-w. Blackbird	*	*	*	47				8		
Rusty Blackbird	18					310		86		
Purple Grackle	*	*	*	17		3		2	60	
Cowbird	*	*		18	10					
Cardinal	700	269	211	324	137	72	93	118	160	154
Even. Grosbeak							*75			
Purple Finch	76	25	14	11	41	27	21	13	4	20
Pine Siskin				2			346	2		
Goldfinch	161	46	255	410	15	69	144	154	111	80
Red Crossbill							57			
Rd-ey. Towhee	136	1	12	41	23	42	19	16	21	12
Savan. Sparrow	55	2	39	5		20				1
Grshp. Sparrow		*1								
Lecont. Sparrow	*4									
Lark Sparrow					*1					
Sl-cl. Junco	750	92	302	324	78	134	200	55	61	144
Tree Sparrow		1			2					
Chip. Sparrow		*3				1				
Field Sparrow	163	23	114	43	43	37	70	43	33	51
Harris Sparrow	*6									
Wh-cr. Sparrow	142	2	62	87	4	2		39	10	16
Wh-thr. Sparrow	*	183	106	140	5	135	62	60	76	56
Fox Sparrow	76	5	18	6	9	1	1	1		4
Lincn. Sparrow			*1							
Swamp Sparrow	122	68	303	53		4				1
Song Sparrow	474	40	222	88	23	46	70	37	25	76
Lapl. Longspur	99									
Smith Longspur	*1									
Total Species	81	86	73	77	51	61	56	57	51	55

## The Round Table

SOME RECORDS FROM THE MEMPHIS AREA — The following birds have been recorded by me along the Mississippi River near Memphis:

BONAPARTE'S GULL—Six immature and two adults in winter plumage were first observed at close range on November 19. They possibly arrived with the severe cold wave on November 17. On November 27 the temperature dropped to 15 degrees. My last of these gulls was one immature bird seen on December 2.

SHORT-EARED OWL—My only record came on November 26, but others saw this owl in October at the blackbird roost.

LECONTE'S SPARROW—One individual was at the blackbird roost at dusk on November 27.—OLIVER F. IRWIN, 1798 Glenview Avenue, Memphis.

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A LATE NEST OF YELLOW-BILLED CUCKOO.—On August 22, 1954, a nest containing two eggs was found at "Rivercliff" on Stones River near Nashville. It was seven feet up in a forsythia bush growing in the garden of my summer cottage. The incubating bird flushed when I approached to within 10 feet. On August 30, the bird was still on the nest and I did not disturb her. A very severe drouth had prevailed and the surrounding woods were exceedingly dry. On Sept. 6, when the thermometer registered 104.8 F., I again visited the nest. There were one small dead nestling and a live one about 5 days old. The latter had its head and neck stretched upward to full extent. The dry conditions still prevailed and the parents probably had difficulty in finding food. I was away attending the A.O.U. meeting the following week and on my return the live young one was not present.—ALBERT F. GANIER, Nashville 12, Tenn.

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A CARDINAL'S WINTER ROOST — On the Vanderbilt campus, Nashville, on the night of December 13, 1954, I observed a male Cardinal roosting on the inside of a lighted porch of the old residence at the south end of the campus. It had been roosting there for some time, so I was told by Mr. Ed Bryan who lived in the house. The roosting perch was the top of the moulding over the arched entrance, which stands eight feet from the front door. A ceiling light, a bulb suspended from the high ceiling, burned four feet away from the roosting bird and the white ceiling above made the enclosed porch space as light as day and no doubt also, a bit warmer at night. Mr. Bryan leaves the light on all night, and he told me that the bird sometimes fluttered against the bulb as though to warm itself. On several winters in the past I have had one or more Cardinals roosting in my garage, on electric wires near the peak of the roof.—ALBERT F. GANIER, Nashville 12, Tenn.

**CRESTED FLYCATCHER EVICTS STARLING.**—On June 10, a pair of Crested Flycatchers finally decided to nest in the cavity of a locust tree in my back yard, but a Starling that had like intent flew in and refused to be evicted. Sizing up the situation, I trimmed a piece of old galvanized iron to fit over the opening and nailed it on after cutting a hole of a size that I thought would admit a Flycatcher but exclude the larger Starling. The next day the Starling was seen to try entry but without success, and a few days later one of the Flycatchers went in to inspect. I felt the problem had been solved and made no examination for the time being. A week later, both Flycatchers were in the tree making considerable complaint and watching them I saw one go in. It reappeared at the hole, flew downward at an angle and dropped from its beak a Starling's egg as it neared the grass, then flew on into a tree. When they left, I picked up the egg finding it fresh and unbroken. Examining the nest cavity, I found no more eggs and only a few straws that had been brought in by the Starling. Considering the three-quarter inch diameter of the egg, it is remarkable that the Flycatcher could have carried it unbroken in its beak. The Flycatchers visited the site frequently for a week or so longer but did not nest, nor did the Starlings try.—ALBERT F. GANIER, Nashville 12, Tenn.

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## News and Notes

### CELEBRATION OF FORTIETH ANNIVERSARY OF T. O. S.

The Nashville Chapter observed the fortieth anniversary of the Tennessee Ornithological Society with a special program on October 10, 1955, honoring the founders of the society and some of the early members. Three living founders were present: Albert F. Ganier, George R. Mayfield, and Dixon Merritt. A son of A. C. Webb, another founder now deceased, was also present, Dr. Hanor A. Webb.

Vernon Sharp, one of the early members, described some of the early history of the society and introduced the individuals to be honored with brief accounts of their accomplishments. Each of the three living founders gave short talks to the club, and each received a badge. All of the early members present at the meeting were given badges to wear that told the number of years each had belonged to the T. O. S. After the meeting refreshments were served to the 61 people that attended.—JOHN OGDEN and EDWIN D. SCHREIBER.

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### FALL FIELD DAY AT ELIZABETHTON

The Elizabethton Chapter, T. O. S., Roby D. May, Jr., President, held a fall field day on October 9 which was attended by birders from Kingsport, Knoxville, Maryville, Bristol, Johnson City, Greeneville and Oak Ridge.

Field trips led by members of the Elizabethton club left the covered bridge in Elizabethton each hour from 7 a.m. to noon. Some of the areas covered were Roan Mountain, Backwoods Lake, Wilbur Lake, County Farm, Roan Creek and Watauga Lake.

At 1:30 the entire group of more than sixty met for lunch at Watauga Overlook, a picnic area where there was a magnificent view of Watauga Lake and the surrounding mountains wearing their brilliant fall dress. Each person brought his own lunch and the Elizabethton Chapter provided coffee, soft drinks and cookies. After lunch a bird list of 80 species was compiled.

Members of the Elizabethton club consider this a successful and very enjoyable activity, and plan to make this an annual event. Enthusiasm and fellowship are contagious, and the local group feel much enriched by a day of sharing a common interest with members of other clubs. MRS. D. E. BASHOR, Publicity Chairman.



#### OUR NEW EDITOR

Dr. Lee R. Herndon, of Elizabethton, will begin editing THE MIGRANT with the March 1956 issue. Dr. Herndon has long been active in the T. O. S. He was president of the Society from July 1946 thru June 1949. He was active in organizing chapters in Elizabethton, Greeneville, Kingsport, and Bristol. Recently he has served as chairman of the Society's Finance Committee.

Dr. Herndon is a chemist, his Ph.D. degree being in that field. At present he is head of the chemistry laboratory of the North American Rayon Company at Elizabethton. His hobby of bird study began before coming to Tennessee, and he did a lot of field work around Buffalo, N. Y., when living there. Most of his field work in this State has been in the northeastern part. Largely as a result of this he published in THE MIGRANT for December 1950 an annotated list, "Birds of Carter County." He has prepared other short articles or notes and has been a regular contributor to "The Season." Mrs. Herndon is also an active bird student; she has held different offices in the Elizabethton Chapter of the T. O. S., and despite the many demands of their large family, has taken part in many field trips.

Dr. Herndon's address is 1533 Burgie Place, Elizabethton, Tennessee. All material for publication in THE MIGRANT should from now on be sent to him.—J. T. T.

## THE MIGRANT

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Knoxville, Tennessee

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### IN RETROSPECT

"To record and encourage the study of birds in Tennessee," the purpose of THE MIGRANT, has been my aim in editing our journal during the past nine years. To this end, many articles, reports, and notes have been published. Some of these stand out in my memory because of their thoroughness, or the cooperative effort behind their preparation, or some other features, but it would be pointless to try to choose the more important or more valuable. All of them have contributed something of worth.

Members of T. O. S. have benefited most from all the work that has gone into THE MIGRANT, for they all have been helped in learning more about the birds of our State. The more advanced bird students have been provided with an incentive for undertaking and completing special projects, in that the results of their work could be published and made available to others. But the value of THE MIGRANT extends far beyond this, for it is wanted and received by a great many individuals and libraries outside of Tennessee.

THE MIGRANT stands in the front rank of similar ornithological journals. Common sense tells one that the worth of anything written depends on what is written, and that depends on the author. The credit for the excellence of THE MIGRANT must go to its many contributors. They also deserve my thanks for their cooperation in preparing material, frequently under pressure when the deadline was near. The names of all of these people will be found in THE MIGRANT'S printed pages.

I have enjoyed the associations and friendships formed in connection with this work and have profited greatly from the nature of the work itself for it has brought to me many and varied bits of knowledge about birds and their lives. I hope that the new editor, Dr. Lee R. Herndon, will, with the cooperation of all T. O. S. members, likewise enjoy his editorship.—JAMES T. TANNER.

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