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THE MIGRANT

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STATUS OF THE RUFFED GROUSE IN TENNESSEE

By VINCENT SCHULTZ

Data are scarce on the former and present range of the Ruffed Grouse (*Bonasa umbellus*) in Tennessee. Bump, Darrow and others (1947) have attempted to delineate the present and former range of the species in Tennessee (Figure 1). As reported by Darrow (correspondence, 1953), the present range was established on the basis of a letter received from the Tennessee Department of Conservation which indicated grouse as being present in "all (counties) east of (and including) Pickett, Overton, Putnam, DeKalb, Warren, Grundy and Marion, **except** Union, Grainger, Knox, Loudon, McMinn, Meigs, and Bradley which were noted with question marks. In addition, the counties of Sumner, Davidson, Cheatham, Dickson, Humphreys and Hickman were also (indicated as having grouse). With respect to the original range, there unfortunately were no specific records for grouse in Tennessee beyond the territory noted above and (the writer) did not indicate what the former limits may have been. (The former range) in Tennessee was estimated by inference from the situation in the two adjoining States." Rhoads (1895) made no reference to grouse west of the East Tennessee Valley and believed the bird was rare in all localities. According to Ganier (1928), Ruffed Grouse were formerly abundant in Middle and East Tennessee, being scarce in 1928 on the Cumberland Plateau and in the Unaka Range. In 1933 he reported grouse as "still to be found in much reduced numbers on the Cumberland Plateau and in the mountains along the eastern boundary," and by correspondence (1953) reported unsuccessful attempts to observe the bird in the western Highland Rim. Although presenting no references, McClanahan (1940) indicates the original breeding range of the species as all of Tennessee except the tier of counties on the Mississippi State Line; the present range is shown as all of Tennessee lying east of a line from Dale Hollow Reservoir to a point slightly north of the southeastern edge of the Cumberland Plateau. The lack of references and non-agreement with other sources casts doubt upon the validity of this report. Caldwell and others (1947), in a publication for school children, state that "The grouse occurs throughout the Cumberlands and Great Smoky Mountains." Undoubtedly, the distribution as presented by Bump and others (1947) is the most reliable available in the literature. The former and present range in Tennessee as determined by these writers agrees in general with current findings in Tennessee; but verification and a few revisions should be made.

TABLE 1 STATUS OF THE GROUSE IN TENNESSEE AS DETERMINED BY PERSONAL INTERVIEW OF HEADS OF FARM HOUSEHOLDS

Farming-type_____	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	TOTAL
Number of Respondents _____	27	97	489	69	131	261	200	139	118	538	306	137	57	862	131	3560
Relative Sampling Error† _____	16.35	7.57	4.97	6.73	6.76	4.58	5.90	6.66	8.82	3.20	5.66	7.69	10.21	2.96	6.53	1.51
Number Reporting Grouse on Farm _____	0	0	0	0	0	1	2	2	1	5	13	65	1	127	62	279
Per Cent Reporting Grouse on Farm _____	0	0	0	0	0	0	1	1	1	1	4	47	2	15	47	8
Relative Sampling Error† _____						96.34	69.76	66.43		43.74	34.17	14.70	96.60	10.35	14.52	6.75
Number of Respondents‡ _____	16	78	341	58	94	184	158	120	95	417	239	116	45	724	122	2807
Number Reporting Grouse on Sampling Area _____	0	0	0	0	0	2	2	1	2	4	23	87	3	171	97	392
Per Cent Reporting Grouse on Sampling Area _____	0	0	0	0	0	1	1	1	2	1	10	75	7	24	80	14

† Computed by use of analysis of variance

‡ Includes only respondents that have lived on area, or not over 2 miles from area, during the last five years.

The western limit of the original grouse range in Tennessee is of particular interest as the true picture is all but obliterated in this area. Ridgeway and Friedman (1946) state that "The western limit of the range of this race is ill defined because of the fact that the species has been extirpated over much of the Mississippi Valley region where it formerly occurred. *Bonasa umbellus moticola* integrates with *mediana* in central southern Michigan, eastern Indiana and western Ohio, and probably also formerly in western Kentucky and Tennessee." Bump and others (1947) report Audubon as indicating the occurrence of grouse south of Tennessee along the Mississippi River; however, they decided to omit this report on their map. Because of the uniqueness of the flora on the "Mississippi Bluff", the writer believes that it is entirely possible that Ruffed Grouse existed along the bluff, although reports from this region are not available.

Lack of information on game animals of Tennessee made it imperative that the Tennessee Game and Fish Commission conduct a state-wide wildlife survey. Primary field work for this project was begun in September, 1950 and completed approximately 13 months later. The survey procedure (Schultz, 1952) included a method of sampling known as "area sampling" which permitted the computation of reliable sampling errors (Table 1). In brief, the method consisted of the random selection of 1000 "sampling areas" in Tennessee which contained, on the average, five dwellings per area. Farmers dwelling upon these areas were interviewed concerning wild animals existing on their farm and the "sampling area." Data collected on the Ruffed Grouse are presented in this report (Table 1, 2 and Figure 1). Sampling errors indicate the adequacy of sampling for all interviewees and all respondents reporting Ruffed Grouse on their farms. The latter is an indication of the relative density and dispersion of the bird within the farming type; i.e., the smaller the sampling error, the greater the dispersion and relative density of the Ruffed Grouse population in the farming-type.

In addition, notes were taken (Table 2) on personal observations and hearsay reports of Ruffed Grouse from all respondents dwelling west of the Cumberland Plateau, a region of grouse scarcity. Such reports for the Cumberland Plateau and eastward were not obtained as it was rather common knowledge that the bird was present in this region.

To insure a complete coverage of "wilderness areas" which were inadequately sampled by the sampling method, interviewees contacted persons other than those on "sampling areas"; these data are not included in the tables and figure. Interviewees made a special attempt to obtain information concerning grouse in Perry, Stewart and Wayne Counties which are located on the western periphery of the Ruffed Grouse range in Tennessee.

A questionnaire was also sent to conservation officers requesting information on the status of the Ruffed Grouse in their assigned county. Officers were requested to indicate the ruffed grouse as common, rare or absent in their county. An additional request for localities of occurrence

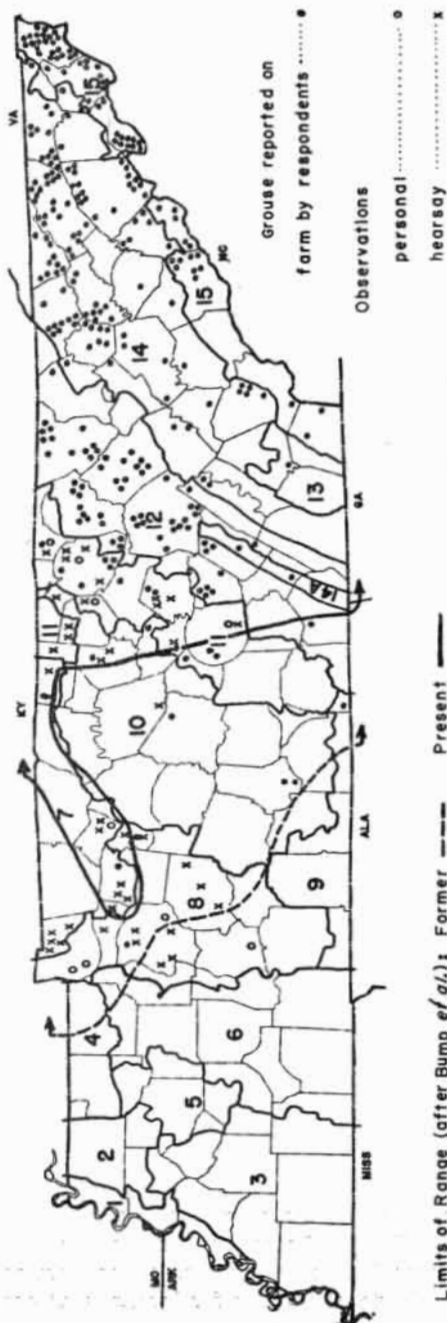


Figure 1. Distribution of Ruffed Grouse reports in Tennessee, from respondents reporting Grouse on farm, and from personal observations and hearsay reports on other areas.

Physiographic regions and farming type numbers: Mississippi Bottoms, 1; Plateau Slope of W. Tenn., 2, 3, 4, 5, 6; Highland Rim, 7, 8, 9, 11; Central Basin, 10; Cumberland Plateau, 12; Valley of E. Tenn., 13, 14,; Sequatchie Valley, 14A; Unaka Range, 15.

was sent to officers listing Ruffed Grouse as rare. The reports are summarized in a later paragraph.

Although the data collected do not permit delineation of ranges of subspecies, they do establish the present range of the Ruffed Grouse in the State. The data obtained by personal interview have been tabulated on a farming-type basis (Table 1 and Figure 1). The farming-types (revised from Luebke and others (1947) represent physiographic regions as shown in Figure 1. The distribution of 279 (or 8 percent) of the respondents reporting Ruffed Grouse on their farms is presented in Figure 1 and the per cent reporting Ruffed Grouse on their farms and "sampling area" in Table 1.

The primary Ruffed Grouse range in Tennessee consists of: (1) Cumberland Plateau, (2) upper Valley of East Tennessee, and (3) Unaka Range. The comparatively few reports in the southern Cumberland Plateau and Unaka Range is the result of relatively few farmers being contacted in these regions. Additional field work in these two areas disclosed that the Ruffed Grouse is fairly common in both regions; however, the northern portions apparently have heavier populations.

The western edge of the original range of the species in the State was probably slightly west of the West Tennessee River with the southwestern boundary being located in Perry County, then running diagonally southeastward across the State to the southwestern edge of the Cumberland Plateau. Ruffed Grouse still occur in isolated localities in this western range; but their number is small. An attempt was made to obtain information on grouse south of this western area in Hardin and Wayne Counties but respondents were unable to furnish reports of grouse either past or present. It is interesting to note that these counties, particularly Wayne, are heavily forested and superficially appear to be ideal grouse habitat. Perry County, lying directly north of Wayne County, also appears to be ideal grouse habitat, but only one grouse report was obtained in this county, this report being a visual observation on Hurricane Creek by a game technician. Respondents north of these counties reported quite frequently the occurrence, and even abundance, of Ruffed Grouse during past years, but reported that currently only a few exist. This general area, which is known as the western Highland Rim, is heavily forested and, with proper restocking and protection, may again maintain a huntable population. The reports obtained in the Central Basin may actually be misidentification on the part of respondents, but it should be noted that they were from typical regions in the Basin. Although some writers have made reference to the past presence of grouse in the Basin, they have not listed references, making it difficult to establish the original range as being throughout this region. The bird probably occurred originally in various localities throughout the Central Basin, but nowhere as abundant as in the surrounding Highland Rim.

The hearsay reports and personal observations of Ruffed Grouse in localities west of farming type 12 (Figure 1) assist in establishing the range

TABLE 2. PERSONAL OBSERVATIONS AND HEARSAY REPORTS OF RUFFED GROUSE WEST OF FARMING-TYPE 12.

Personal Observations:

Year	County	Location	Year	County	Location	Year	County	Location
1950	Cheatham	—Marrowbone Hills	1930	Overton	—Vicinity of Howard	1936	Stewart	—Ft. Henry
1916	Humphreys	—Vicinity Bold Spring	1952	Perry	—Hurricane Creek	1952	Stewart	—Blue Spring Creek
1948	Jackson	—Vicinity of New Hope	1949	Pickett	—Vicinity of Byrdstown	—	Warren	—Ben Lomond Mountain

Hearsay Reports:

Year	County	Location	Year	County	Location	Year	County	Location
—	Cheatham	—Vicinity of Sycamore	1910	Humphreys	—12 Miles West of Waverly	1944	Macon	—Long Fork Creek
1890	Cheatham	—Vicinity of Kingston Springs	—	Humphreys	—	—	Overton	—Vicinity of Wirmingham
1911	Cheatham	—Vicinity of Sycamore	1900	Humphreys	—	—	Overton	—Vicinity of Wirmingham
1949	Cheatham	—Cheatham Wildlife Mgt. Area	1915-16	Humphreys	—15 miles north of Waverly	—	Overton	—Vicinity of Alpine
1945	Clay	—Vicinity of Cellna	1925	Humphreys	—	1925	Overton	—Vicinity of Dwindle
1926	Coffee	—	1931	Humphreys	—Duck River Bottoms	1949	Pickett	—Vicinity of Bloomington
—	DeKalb	—Vicinity of New Home	1935	Humphreys	—	—	Smith	—East of Carthage
—	Dickson	—	1935	Humphreys	—White Oak Creek	1911	Smith	—
1850	Dickson	—Ruskin Cave	1935	Humphreys	—White Oak Creek	1949	Smith	—Vicinity of Edgefield
1910	Dickson	—Vicinity of Van Leer	1951	Humphreys	—Vicinity of Trinity	—	Stewart	—Shelby Creek
1910-15	Dickson	—Vicinity of Van Leer	—	Houston	—Vicinity of Erin	1915	Stewart	—Vicinity of Bumpus Mills
—	Hickman	—Lick Creek	1920	Houston	—Vicinity of Salem	1930	Stewart	—Vicinity of Bumpus Mills
1911	Hickman	—	1916	Jackson	—Vicinity of North Springs	1930	Stewart	—Vicinity of Bumpus Mills
1921	Hickman	—Vicinity of Beaverdam Springs	1948	Jackson	—Vicinity of New Hope	1931	Stewart	—Vicinity of Indian Mound
1926-31	Hickman	—Vicinity of Centerville	1951	Jackson	—Vicinity of North Springs	—	Sumner	—
—	Humphreys	—Vicinity of Kentucky Lake	—	Lawrence	—	1951	Warren	—Ben Lomond Mountain
—	—	—	—	Lawrence	—	—	White	—Vicinity of Walnut Grove
—	—	—	—	Macon	—Vicinity of Cross Roads	—	White	—Vicinity of Walnut Grove
—	—	—	1940	Macon	—Vicinity of Galen	—	White	—Vicinity of Walnut Grove
—	—	—	—	—	—	1935-38	White	—Vicinity of Walnut Grove
—	—	—	—	—	—	1950	Wilson	—Vicinity of Coinsville

of the species over this area and verify the range as described by Bump and others (1947).

Information on population trends was requested from respondents reporting Ruffed Grouse as present on "sampling areas." Population trends were requested only from persons residing on or within two miles of the area during the last five years. Of 398 persons interviewed, 60 (or 15 per cent) reported the population up during the last five years; 62 (or 16 per cent) reported down; 3 (or 1 per cent) as fluctuating; 116 (or 30 per cent) reported no change; 148 (or 38 per cent) reported trend as unknown. Similar relationships in the reports occurred in the primary grouse range farming types 12, 14 and 15. The small sample from other farming-types prevented the drawing of accurate conclusions concerning population trends.

The status of the Ruffed Grouse in the different counties in Tennessee, as reported by conservation officers, is as follows. Grouse were reported to be common in the counties of Anderson, Blount, Campbell, Carter, Claiborne, Cocke, Cumberland, Fentress, Grainger, Greene, Hawkins, Putnam, Scott, Sevier, Unicoi, and Van Buren. They were reported to be rare, location unknown, in Dickson, Johnson, and Roane Counties, and rare over the entire county in Grundy. In the following counties grouse were reported to be rare, present at the specified locations: Bledsoe—Cumberland Mountains, Walden Ridge; Bradley—White Oak Mtn.; Hamilton—Walden Ridge; Hancock—Clinch River Bluff near Sneedville; Humphreys—Richland Creek area, Little Richland Creek; Jackson—New Hope community; Jefferson—"The Rocks" between Talbot and White Pine; Knox—House Mtn., Roaring Springs, Clinch River, Hickory Creek; McMinn—wooded knobs near Englewood and Chilhowee Mtn.; Marion—Foster Hall area; Meigs—Concord; Monroe—Tellico Wildlife Management Area; Morgan—western part of county near Rugby; Overton—Crawford; Pickett—Pickett State Park; Polk—Cherokee National Forest; Sequatchie—tops of mountains and gulfs; Sullivan—Bays Mtn., Reedy Creek Bluff; Union—Point No. 19 on Norris Lake; Warren—Harrison Ferry Mtn.; Washington—Clarks Creek; White—Bon Air Mtn. From all other counties, no grouse were reported.

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THE ROUND TABLE

MEADOWLARKS "INVADING" A CITY BOULEVARD—It has been reported that several thousand Meadowlarks landed on Rossville Boulevard, Chattanooga, about midnight, Sunday, April 5, 1953. The Boulevard is a well-lighted, six-lane thoroughfare with stores, businesses, and some houses along its length, and is the main highway from downtown Chattanooga to Rossville, Ga., about five miles away.

Policeman Jerry Perry's attempt to disperse the birds along a two-mile stretch were not too successful, because they flew up unwillingly for each passing car and immediately settled back to the pavement. The aftermath of the event is not known because Mr. Perry was forced to return to his regular duties.

It is possible that this large flock were migrating Meadowlarks coming to roost for the balance of the night in what appeared to be a sizeable and smooth field, and being tired and ready for rest, they were unwilling to depart in spite of their poor choice.—MRS. E. M. WEST, Clayton Ave., Chattanooga (4) Tennessee.

BLUE GROSBEAKS NEAR CHATTANOOGA—On June 3, 1953, while observing birds in Chickamauga Park, Ga., about four miles from the Tennessee line, I saw a male and female Blue Grosbeak (*Guiraca caerulea*) feeding on the edge of a field of ripe wheat. I was accompanied by Mrs. Frances Barnwell and Mrs. June Hall, but the species was a stranger to them. We watched the pair at close range on opposite sides of the large field for about 30 minutes. I was out of the State and unable to return to the site until July 9, but found the pair at the same location obviously carrying food to nestlings. After a five-minute wait, the female was seen to go to the nest. Anxious not to disturb them, I went only close enough to confirm the location of the nest with young but did not lower the branch to count them. The nest was located about six feet from the ground in honeysuckle vine entwined in a small winged elm tree. On July 15 this pair was feeding at least two young out of the nest.

Also on July 9, another pair was seen about one-half mile distant from the first and just a few minutes later. They allowed close approach and the male sang almost continuously. This pair could not be located on July 15, but on August 12 they were found feeding young, one out of the nest and one standing on the rim of the nest. This nest also was in a small winged elm tree at eye level, and there was much paper entwined in the under side.

On July 15 a third pair of Blue Grosbeaks was found about a mile or so from the first, feeding at least two young out of the nest.

Two nests were located a few feet from the edge of a large wheat field. There are ten such fields in the park, and it is thought that a close check might produce even more nesting Grosbeaks.

On July 23, a singing Grosbeak was heard on N. Moore Road, on the northeast edge of the city, in Tennessee. I was accompanied by

Mrs. Barnwell and others. We crossed a pasture in the direction of the sound and found it was bordered by a cut-over wheat field. We did not, however, see or hear this bird again. On August 4, while visiting a fish hatchery a few miles east of Chattanooga, I heard and saw another pair of Blue Grosbeaks. They were across a brook, and it was impractical to approach closely enough to see if there were young in the area.—MRS. E. M. WEST, Clayton Avenue, Chattanooga (4) Tennessee.

SONG SPARROW EXTENDING NESTING AREA WESTWARD—While leading a group of bird students on May 14 at Cookeville, Tennessee, I was greatly surprised to hear a Song Sparrow in full song. We looked for the nest along a small stream but were not successful. Professor Richmond of Tennessee Tech, reports a pair in the spring of 1952 which nested near his home, a short distance from the area occupied by this 1953 pair.

This writer also found a pair of these birds at Tracy City in July 13 (?) (or earlier) of 1953 in the thicket near a small stream in the town. This seems to indicate that this species is moving westward from the Tennessee River Valley along the Cumberland Plateau. Should any reader have similar records they will be appreciated.—GEORGE R. MAYFIELD, "Nashville Banner", Nashville, Tenn.

THE SEASON

MEMPHIS—Spring was relatively mild but with much rain in early March and early May, followed by a drought interrupted briefly in mid-July. As last year, a record-breaking June gave us an extremely early and hot summer. Spring was marked by average shore bird arrivals (contrasting with winter stragglers and very early arrivals last year) and by early arrivals of the first smaller transients. The only noticeable peak was about April 19 in Overton Park, while on April 26 moderate numbers of Orchard Orioles, Indigo Buntings, and Dickcissels were noted in open situations in the county. The latter was a week after the first wave was noted in southwest Louisiana. The Golden Plover was present Mar. 7-Apr. 26, chiefly Mar. 14-Apr. 5. As last spring, it was about one-third of past maximum with 646 near Crawfordsville, Ark., Mar. 14, and 952 near Walls, Miss., Mar. 28. The Apr. 26 record was an individual in winter plumage. A cotton field slough near Walls furnished most of our other shorebirds, the highlight being Greater Yellowlegs, 48 on Apr. 12 and Apr. 19, and 28 still present Apr. 26. The flock was 4 to 5 times the largest number ever seen here in the last 25 years. A more western species was represented by two Rough-legged Hawks seen near there Apr. 5 and like the only previous record, just south of the Tennessee line. A Broad-winged Hawk at Spring Lake S. P., Miss., on Mar. 29 (E. Barbig, King, and Julia) and one in Overton Park, Apr. 1, are our earliest local records. Nine Blue-gray Gnatcatchers on Mar. 21, Overton Park (Peyton, BC), were our second earliest (6 on 3-19-33). At the Penal Farm, Apr. 17, three

male Bobolinks were about a week early but flocks of the species showed late. Of interest (normally uncommon) were a Cape May Warbler, May 1, Overton Park (the Wm. Hearn and Ellen Stringer) and a Lark Sparrow at the Penal Farm Apr. 17. We might add: Golden-winged Warbler, 2, Apr. 28, Overton Park; female Wilson's Warbler, May 1 & 2, and a Golden-winged on May 17, by Leah Torti at her home. Lincoln's Sparrows continued uncommon, but 25 Rose-breasted Grosbeaks, May 3, were more than the total for the last seven Spring Field Days combined.

The extreme summer heat slowed avian activity and field work but several consecutive week-end trips were made along the state line east to state parks near the Tennessee River. High points were visited, some where Whip-poor-wills have been found, in a search for Scarlet Tanagers, and we tried for Blue Grosbeaks in West Tennessee. Two new colonies of Cliff Swallows were found on the Tennessee River. Each May on our return from the annual meeting we run to make the Johnsonville bridges before dark. On May 10 we found the species nesting low on easternmost piers of the NC&STL RR bridge there. About 50 nests, we believe, with 24 lined across the recess facing us. On June 21 we counted about 60 nests under a concrete balcony to the control building at the east end of Pickwick Dam. In previous years we had checked the lock and dam from the west shore. The largest colony, at the Perryville bridge, had about the same number of nests, July 12, but the Savannah colony appeared to be smaller and the nearby Snake Creek group larger, May 9. At Natchez Trace S. P. on July 12, Mrs. Coffey and I watched a pair of Worm-eating Warblers feed three young, capable of short flights, in the same ravine where I watched one sing June 8, 1944 (1944:26). We have hunted for the species here meanwhile. A new site for the Swainson's Warbler was one mile southeast of Shiloh Park on June 21, where one was found. We have occasionally checked the small creek bottom there for the local Cerulean Warblers, missing these latter then but finding two singers earlier that morning in Shiloh's only good ravine. The Prairie Warbler seemed much below normal in areas where previously found and Killian Roeber reports the same in the Jackson area. The Orchard Oriole seemed also low in numbers, considering Shelby County where it is more common than eastward. The Towhee has been found, especially in 1952 and 1953, to be a fairly common summer resident in eastern sections and suburbs of Memphis (RDS, BC, the Chas. Seahorns, Oliver Irwin, Leah Torti, Nelle Moore). It is still local and has been found in certain pockets eastward, being absent from large areas. Reports on all summer Towhees in the Mid-South are solicited. A rare summer species was again listed,—the Lark Sparrow, on July 12, 3 miles west of Clarksville (Lexington area). One bird was an adult, the other with it may have been an immature.

Early transients returning were 8 Upland Plovers at the Penal Farm on June 21, a lone Pectoral Sandpiper there July 17 and two Spotted Sandpipers on Aug. 1. Mud Lake's edge moved out of the cypresses and on July 25 I counted 17 scattered Solitary Sandpipers and saw a flock of

11 Least Sandpipers. Added on Aug. 2 were 85 Pectorals, a Lesser Yellowlegs, 3 Black Terns (one immature), and on Aug. 8 (Peyton & BC) a Western Sandpiper and a Semipalmated Plover. The small flocks of herons included some Snowy Egrets. Mud Lake was "just right" on Aug. 8 but it went fast and on Aug. 23 there were only two very small shallows of water left, with the last visitors,—80 Pectorals.—BEN B. COFFEY, JR., Memphis, Tenn.

NASHVILLE—It is difficult to recall an exceptionally cool, rainy July in the midst of a severe August-September drought but whatever influence weather may have on the activity of birds those are the two forceful aspects of the past and current seasons.

In general breeding populations are reported as normal except for Dr. Mayfield's impression of a low population at Idlewild Wood. The number of breeding Black-crowned Night Herons on White's Creek Pike was somewhat increased with 35 or more nests in May. The pair of Yellow-crowned Night Herons observed in Buena Vista Marsh in early May were recorded in June and as late as July (DO) but no nest was found. Mr. Ganier found an American Egret in Cumberland Bottoms May 17. There was a Snowy Egret in the South Harpeth Valley April 26. Recently sheared-off feathers of a Great Blue Heron were found, June 26, strewn along Bedford Creek Road and into the farm at Basin Spring in such a way as to indicate the heron had been dragged by a predator (ARL, KAG, Bill Crouch). An artificial "lake" at the head of Bedford Creek might make the area attractive to a Great Blue at this late date.

Locations of 5 pairs of Wood Ducks have been reported for the nesting season. At Buena Vista Marsh and the South Harpeth Valley pairs were seen regularly during the season. Eddie Gleaves and others watched a brood of 7 young ducks and their parents at Craigie Hope; Gene Ruhr saw a black snake take one of a brood of 5 ducklings at Dale Hollow Lake; he also watched a brood in Franklin County.

Nesting records of Warbling and Yellow-throated Vireos are always of interest. Johnnie Ogden watched a family of recently fledged Warbling Vireos being fed in his yard June 5-8; Mr. Ganier saw a Yellow-throated Vireo building May 2.

Larry McLean reports Killdeer nesting on the gravel-topped roof of a one story business building here in Nashville. It is an unusual occurrence and we would like an observation on the same roof next year. Henry Todd reported a similar instance in the MIGRANT 1935, p. 72. Al Mayfield watched Baltimore Orioles feed fledglings on larvae from a wasp nest. The Yellow-billed Cuckoo has seemed an unusually conspicuous species to the writer during the past season both in rural and urban areas.

Breeding birds at Basin Springs were of usual interest. The Sharpshinned Hawk nested again in the pines there. Green Herons had 4 eggs in a nest in the pines May 16, 4 downy young in the nest May 24; young were last seen near the nest June 22. Two Prothonotary Warbler nests were active May 26; young left one nest June 3. Two pairs of Worm-eat-

ing Warblers fed fledged young June 28 and July 4 respectively. A Red-start incubated on a nest in a Sycamore May 30.

H. C. Monk had 2 Dove nests active on Sept. 18 in the Centennial Park area.

It is a regular pattern for gregarious species to flock to summer roosts after nesting duties are completed. Such a roost was active in mid-June in Buena Vista Marsh and had built up noticeably by Sept. 4. Starlings in the main along with a few Grackles and Robins occupied the roosts. Another roost on Charlotte Pike, composed chiefly of Grackles with Starlings, a few Robins and Cowbirds, built up from mid-June to mid-August and later.

The next step in the season and we find migration slowly moving into the Nashville area. H. C. Monk heard the first North-South moving migrants as Upland Plovers flew over at night. He has records of flights on August 1, 2, 5, 6, 7, and later. Unusually early Waxwings were 3 observed by Johnnie Ogden Aug. 18. One was immature. Mrs. Laskey banded a Chestnut-sided Warbler Aug. 21. Mrs. Goodpasture recorded a "wave" of Canada Warblers from Aug 22-Sept. 1 at Basin Spring. With these were a Parula Aug. 22 and a Blackburnian Aug. 23. Next were a Black-throated Green and 4 Northern Water-thrushes Sept. 1 at Radnor Lake (JO, KAG). There was a Nashville Warbler at Buena Vista Sept. 4 (JR, JO, KAG). The first group of warblers seemed to move out on a strong wind and cold front Sept. 4. Since then a few Chestnut-sideds and Black-throated Greens continue to come in. Mrs. Laskey banded an Olive-backed Thrush Sept. 6; Misses Riggs, Castles and Chamberlain had a Bay-breasted Warbler and an unidentified Tern at Radnor Sept. 7. A "wave" of Ovenbird records fell on Sept. 12-13. Four or five were found on Pond Creek Sept. 12 (AFG, RC, JC); one flew into a business house on the same day, was caught and given to Mrs. Laskey for banding and release. Mrs. Bell noted one at home Sept. 13. Additional later records make this a good Ovenbird season. Two other records of interest made by the group at Pond Creek were an adult Wilson's Warbler and a late Yellow Warbler Sept. 12.

A drop in temperature and rain early Sept. 19 broke a drought extending from July 8 and another wave of migrants was in evidence wherever TOS members went Sept. 19-20. One early morning group not only got soaking wet on the 19th but a list of 75 species of birds in the Radnor area. Notables were 4 Wilson's Warblers, a Tennessee, and both Olive-backed and Gray-cheeked Thrushes. Two additional Wilson's Warblers at Basin Spring make a total of 7 individuals on 3 days in 1 week which is an exceptional if not unique record. This added to an unusual number of Northern Water-thrushes and Ovenbirds converts an otherwise dull warbler season into an especially interesting one.

Conspicuously absent from local records are the shore birds. Dr. Mayfield saw one Spotted Sandpiper on Stone's River Aug. 28 and 30; Gene Ruhr saw one at Dale Hollow. A solitary and an early Wilson's Snipe were at Jackson's Lake Sept. 19 (TOS).

When gaps exist in what we SEE of migration we might fill in with

what we HEAR of it, were our ears well enough trained. If the migrating movement is bound by time, it seems to transcend space and weather; for regardless of weather, calls of birds passing overhead can be heard night after night, sometimes almost continuously, sometimes in flock-like groups of calls. Sometimes there is a homogeneous quality of sound, at other times the quality is varied as though coming from mixed species. If you want to be intrigued listen some night.—KATHERINE A. GOODPASTURE, 408 Fairfax Ave., Nashville, Tennessee.

KNOXVILLE—Spring, summer, and early fall have been about average, as far as bird observations around here are concerned. With minor exceptions, described below, migration dates and numbers of birds have been the usual.

On a field trip to the Roaring Springs area, just north of Knoxville, on June 21, the following species unusual to this area were found: Parula, Worm-eating, and Cerulean Warblers, and Scarlet Tanager; no nests or young were found.

J. C. Howell saw a flock of 50 Black Terns on Norris Lake on Sept. 3. A Scarlet Tanager on Sept. 17 at my home (JTT) was apparently an early migrant.

On the night of Sept. 21-22 members of the Knoxville Chapter kept an all-night telescopic watch for migrants silhouetted against the full moon. Over 700 were counted in nine hours, the greatest number being seen between 8 and 11 p.m. when the count averaged 2.6 birds per minute. This large migration was apparently started by a cold front which passed over on the previous afternoon.

A Fall Field Day was held on Sept. 27, and a total of 90 species was recorded. Unusual records were two Sora Rails and three Short-billed Marsh Wrens. Chimney Swifts, Blue Jays, and Mocking Birds were seen in unusually large numbers.—JAMES T. TANNER, Knoxville, Tenn.

GREENEVILLE—On June 20 a male Scarlet Tanager, two male Rose-breasted Grosbeaks, and a singing Veery were located about the wooded edges of Camp Creek Bald. These species, including a second Veery and a Winter Wren in song, were seen on a return visit to the Bald on July 4 (J. B. Smith). Previously the latter two species had not been found; the presence of the four species on these dates suggests their possible nesting.

Nest watching in the lowlands was made more interesting by a Shrike nest with four young (Irvine, Shanks), reported in "The 1953 Spring Field Days" (THE MIGRANT, June, 1953). Presence of a pair of Horned Larks from March 30 through June made a nest of this species likely. Six pairs of Dickcissels occupied parts of Lick Creek Valley visited the first week in June. Two pairs moved into Roaring Fork bottoms July 1, possibly as farming operations disrupted their activities elsewhere. A third male, whose arrival date on Roaring Fork was not learned, sang through June 25, when his clover-seed field was cut. Of

possible interest is a singing male Dickcissel seen June 14 along a Jefferson County roadside three miles from the Knox County line. Mr. and Mrs. White found the House Wrens in early June, at the peak of their nesting activities, to be abundant in town. Mrs. White on a two-block walk counted six singing males. Mr. White located about 20 pairs about town. A Red-headed Woodpecker pair at Tusculum lost out twice to the Starlings in competition for a nesting hole (Shanks). Mr. Shanks during a week at Sewanee, on the Cumberland Plateau, noted the greater abundance of Red-headed Woodpeckers there.

Th partial silence of birds during late August and early September was shattered by the noisy young of Goldfinches being fed as family groups visited thistles and weed patches. Late nesting individuals of other species were a pair of Cardinals, as on September 20 the male continued to feed a large offspring. September 2 a young Towhee was appealing to an adult male for food. On August 29 a tractor, idle for a week, had acquired beneath its fan a Carolina Wren nest with two eggs. A farm truck August 26 contained a similar nest without eggs.

A Bewick Wren resumed infrequent song August 23.

An American Egret was seen on Cherokee Lake the last week of August (Shanks). Chimney Swift flocks on late afternoons of September 11 and 12 were large over Greeneville and Tusculum; a cold front occurring then seemed to have brought them in on heavy migration, as following afternoons found only small groups of Swifts (Shanks). Nighthawks in groups of 30 and 35 flocked down Lick Creek valley late afternoons of September 16 and 20. Blue-gray Gnatcatchers were present daily through September 10, one on the 13th, two on the 19th. A Parula Warbler was seen August 13, a Canada Warbler on September 11 (Wilma Irvine) and Magnolia Warbler on September 10. Redstarts have been present daily September 10 through the 20th. A Rose-breasted Grosbeak was seen September 13 and 16. Two Marsh Hawks had arrived September 18. On September 20 a Migrant Shrike reappeared in a roadside location where a Shrike has come to be expected.—MRS. RICHARD NEVIUS, Greeneville, Tenn..

KINGSPORT—Unusually warm weather in the middle of May with continuing periods of unrelieved heat marked the season in Kingsport from our spring field day to our fall count. The heat was accompanied by drought even worse and more prolonged than that of 1952. The rainfall recorded for August was .57 in. compared with a normal of 4.67. I cannot say what effect this weather had on the birds, but it did not inspire much activity among our bird watchers.

Our summer census was conducted during the week of July 12-19 with a low count of 63 species. Warblers were conspicuously missing. The status of two species as residents was in question, Baltimore Orioles and Scarlet Tanagers. Scarlet Tanagers were seen but no Baltimore Orioles, altho their abandoned nests have been found in two localities. A Baltimore Oriole was seen by the McHorrises August 9 and by the author

August 10. In this summer census nesting House Wren were also noted, a total of 24 in two residential areas in the northeast section of Kingsport. As was mentioned in the comment on our spring census, Phoebes and Brown Thrashers continue in plentiful numbers, to which I would add White-eyed Vireos. We have received no reports this season of immature Little Blue Herons which were seen frequently last year.

It seems to me that some species have nested late. I observed a brood of Field Sparrows coming off the nest Sept. 1, and a brood of Goldfinches leaving Sept. 5. Mourning Doves also nested late. In view of this and our failure to note any increase in numbers of Doves around Kingsport, it seems the lengthened Dove hunting season starting Sept. 1 was probably a mistake.

Because there was only one rain during August, we had only one opportunity for further observations of the terns and gulls reported for the first time in this area last summer. Then they appeared at the local private fish hatchery several times the last of August during severe storms. This August fifteen Common Terns appeared briefly during a hard shower, our only rain. With them were some unidentified birds.

The fall migration is so far notable for what has not been seen. Up to the present, Sept. 20, we have no records of the following which ordinarily appear from the first thru the third week of September: Solitary and Least Sandpipers, Semipalmated Plover, Cape May, Blackburnian, and Bay-breasted Warblers, and Rose-breasted Grosbeak. We have only one record of an early arrival, a flock of 12 Blue-winged Teal seen Sept. 5, two days earlier than our previous record. — ANN HARNEY SWITZER, Kingsport, Tenn.

BOOK REVIEWS

A GUIDE TO BIRD FINDING WEST OF THE MISSISSIPPI, By Olin Sewall Pettingill, Jr. 733 p. 1953. Oxford University Press, N. Y. \$6.00.

Users of "A Guide to Bird Finding East of the Mississippi", which preceded its brother volume by about two years, will need no introduction, nor recommendation, to this book. Bird watchers used to recognize each other by their binoculars, then by binoculars plus "Peterson", and now they meet at good birding spots directed there by their copies of Pettingill.

This book covers the States west of and including Minnesota, Iowa, Missouri, Arkansas, and Louisiana. It follows the same plan as the earlier volume for the eastern states. There is an introduction describing and explaining the book. Then follows a section on each state, consisting of a general description of the habitats and birds of each within the state, and under locality names alphabetically arranged, detailed directions to the best areas to find birds. A nice feature is that correct pronunciations to names like "Huachuca" are given. There is an index which includes localities and birds, so it would be possible to sit down with this book and plan a trip to see the kinds of birds one wishes.

The book is decorated with attractive line drawings by George Miksch Sutton.

The descriptions introducing each state are worth reading for themselves, for they were written with the help of individuals with wide knowledge of the areas and succeed in giving a brief general picture of the land and the birds.—James T. Tanner.

THE CALIFORNIA CONDOR. By Carl B. Koford. 154 p. 1953. Research Report No. 4, National Audubon Society, 1130 Fifth Ave., New York (28) New York. \$3.00.

Koford estimated sixty Condors to be living in an area of California roughly 100 by 100 miles. The conspicuous nature of Condors and their small number combined to make this a unique study in at least one respect: Koford was able to see or obtain information on a large percentage of all the individuals of the species he was studying.

This report is based on the fourth study of rare and vanishing birds supported by the National Audubon Society with the aim of discovering ways of conserving the species. Each study was certain to be valuable, for if the species were to be saved from extinction, success would be complete; if not, a careful study of the species would have been made before the opportunity was lost forever. Another gain is that from such studies conservationists acquire knowledge and experience which can be applied in the preservation of other animals.

The report presents in detail the known history of the California Condor population. Within historical times the species was confined to within a hundred miles of the Pacific coast from the Columbia River to the northern parts of Lower California, living mostly in the mountains of this area. The report suggests no explanation of why Condors could not inhabit other areas of the western mountains. During these times Condors may well have been most abundant when the rough methods of early California ranching produced large numbers of sheep and cattle carcasses. Since then there have been several changes adversely affecting the Condors: reduction in number of sheep and cattle being grazed; more efficient methods of reducing the loss of stock and thus the number of carcasses on the range; replacement of range by grain fields, orchards, and oil fields.

Some key facts are presented in the brief chapter "Population and Survival". Condors are immature for at least five years. With an estimated annual survival rate of between 90% and 95%, about two-thirds of the population would be adults, six years old and older, or about 40 of the estimated total of 60 Condors, a maximum of 20 pairs. Adult Condors nest only every other year and then lay only one egg. On the average, only ten eggs could be laid in one year. No figures on nesting success appear to be available. With this low reproductive potential, the Condor population is in a precarious position; a little change one way or the other

could make a big difference. By way of contrast, imagine what could be done with 60 guinea pigs, or even 60 cattle!

Another striking contrast between California Condors and our more familiar birds is the length of time devoted to one brood; beginning with an incubation period of about 42 days, a pair of Condors requires over a whole year from egg-laying to the time the juvenile is independent.

A program for the conservation of Condors is recommended. It includes adequate protection against shooting and against disturbance of nesting and roosting Condors, education, and suggestions for increasing the food supply.

The report contains much detail on the behavior of Condors in flight, when roosting, when feeding, and during the reproductive period. Food habits and food supply are well described. There are many good photos of the birds and their habitat. A person who reads the report can feel as tho he knows something about Condors; Koford, the author, certainly did.—James T. Tanner.

THE LIFE OF THE ROBIN. By David Lack. 240 p. 3rd ed., 1953. Penguin Books, Inc., 3300 Clipper Mill Road, Baltimore (11) Maryland. 65 cents.

The author of this book has written many technical papers about birds, and he has established a reputation among professional ornithologists. Besides being a good ornithologist, he can write well, and this book proves both.

It is about the English Redbreast, which David Lack studied by watching in the field, color-banding to mark individuals, organizing a few experiments, and reading a great deal that had already been written about the "most popular British bird". The book was written for the layman, and tells about all phases of the Robin's life: food, year-round activities, survival, behavior, and so on exhaustively. Despite the non-technical language, many modern aspects of ornithology, such as the significance of a bird's territory, are discussed in detail, and there is a large bibliography at the end of the book.

An American reader may not be especially interested in Robin Redbreast, but he will find much about birds of general interest in this book. It is one of the best studies of a single species, interwoven with up-to-date theory, ever written, and as such has become a minor classic.

The first edition of "The Life of the Robin" was published in 1943, and a revised edition in 1946; this Pelican edition differs from its predecessors in a 21-page "Postscript" describing the work done since the second edition on food, habits, clutch size, nesting growth, and geographical variations.—J. T. T.

NOTES HERE AND THERE

OFFICERS OF T. O. S. CHAPTERS—The following is a list of the elected officers of the eight local chapters of the T. O. S.; most of the elections were held last spring.

MEMPHIS. Pres.—Demett Smith; V. Pres.—Alice Smith; Treas.—Rev. William Hearn; Corresp. Sec.—Nell Coleman; Rec. Sec.—Patricia Moore; Curator—Ben Coffey; State Directors—Edward King and Brother Leo Thomas.

NASHVILLE. Pres.—Mrs. William F. Bell; V. Pres.—Eugene Ruhr; Sec.-Tr.—Ruth Castles.

LEBANON. Pres.—Millard C. Kent; V. Pres.—Mrs. Henry Waters; Sec.—Dixon Merritt.

KNOXVILLE. Pres.—J. B. Owen; V. Pres. Mrs. E. E. Overton; Sec.-Treas.—Mrs. R. A. Monroe.

GREENEVILLE. Pres.—Alfred H. Irvine; V. Pres.—J. B. White; Sec.-Treas.—Mrs. Alfred H. Irvine; Statist.—Mrs. Richard Nevius; Director—Mrs. Willis Clemens.

KINGSPORT. Pres.—Ed Gift; Sec.—Mr. W. C. McHorris; Treas.—Mrs. Al Harris; Statist.—Mrs. Robert Switzer.

ELIZABETHTON. Pres.—Dr. L. R. Herndon; V. Pres.—J. C. Browning; Sec.—Mrs. Hugh L. Taylor; Treas.—Mrs. Ruth D. Hughes; Historian—Mrs. F. W. Behrend; Director—Mrs. F. W. Behrend.

BRISTOL. Pres. Mrs. Judith A. Abbott; V. Pres.—C. E. Lovett; Secy.-Treas.— Mrs. Patsy Loving; Statist.—Wilson Lovett.

ERROR IN NAMING STATE OFFICERS—In the June 1953 issue of THE MIGRANT, where (p. 44) officers elected for 1953-54 were listed, the Vice President for East Tennessee, Mrs. E. M. West, was mistakenly called "Mr."

FALL MEETING OF THE KENTUCKY ORNITHOLOGICAL SOCIETY—Oct. 9-11 are the dates on which the Kentucky Ornithological Society is meeting at Cumberland Falls State Park, Corbin, Ky., for its Thirtieth Annual Fall Meeting. Members of the T. O. S. have been invited to join this meeting and celebration especially because the T. O. S. helped found the K. O. S.

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

THE ELEVENTH INTERNATIONAL ORNITHOLOGICAL CONGRESS

—The 11th International Ornithological Congress will be held in Basel, Switzerland, from May 29th to June 5th, 1954. During the week of the Congress, five days will be devoted to meetings and two to excursions. Before and after the Congress (May 25-28 and June 7-19) excursions will be arranged to enable members to become acquainted with the Swiss avifauna, especially of the Alps. The Congress fee is 30 Swiss francs.

Copies of the prospectus, containing registration form and detailed information, are available from James T. Tanner, Dept. of Zoology, Univ. of Tennessee, Knoxville.

OBSERVATIONS OF HAWK MIGRATION—A cooperative effort to observe fall hawk migration is again being made this fall, the first date being Sept. 20. Any person observing hawk flights this fall should send a summary of his observations to Fred W. Behrend, 607 Range St., Elizabethton, Tenn.

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