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AUTOMOBILE AND COMPLETE SURETY PROTECTION

VOL. V.

JUNE, 1934

NO. 2

Published by the Tennessee Ornithological Society, to Record and Encourage the Study of Birds in Tennessee. Issued in March, June, September and December.

THE MOCKINGBIRD'S IMITATION OF OTHER BIRDS By GEORGE R. MAYFIELD.

For the past ten years I have been listening to the song of the Mockingbird throughout the entire year, and making notes on such of them as seemed of special interest. In this article I shall give some conclusions based on this study.

In the first place, I should like to say that these observations have convinced me that the Mockingbird inherits his repertory from many generations back and that, from time to time, each individual will pick up some new songs, or calls, from his environment. This can be seen when the mocker chirps like a young chicken, calls like a turkey, imitates the whistle of a human being, or gives an echo to some musical sound that he hears from his surroundings.

To make a complete study of the Mocker's powers of imitation, one would need to know: First, songs and calls of birds now extinct in this section of the world, which may have been imitated by the ancestors of the present Mocker; second, songs and calls of all contemporary species in this part of the United States; third, the songs and calls of all Mockingbirds now singing. The writer knows nothing of No. 1. He knows the songs and call of about 175 species, of which fewer than 100 may be strictly classified as song birds, and as for No. 3, he has listened to some 35 Mockers in different localities around Nashville and has tabulated some of the results. From these notes he has divided the songs of the Mockingbirds into three classes:

First: Songs unlike those of any species now extant. These songs may be original with the Mockingbird himself, or may be inherited imitation of birds now extinct. The power to inherit song has been demonstrated by young birds raised in isolation from others of their kind.

Second: Songs and imitations of species from other sections of the South. A striking example of this is found in the imitation by the Mocker of the Brown-headed Nuthatch. This latter species is not found within 100 miles of Nashville, so far as we know, and the question arises, how can the Mockingbirds we have here imitate so closely the songs and calls of this and other birds which are not in this section. Several theories have been advanced to explain this phenomenon. First, that this imitation is accidental. To this I would reply that too many Mockingbirds closely imitate this song of the Nuthatch for the imitation to be a mere accident. Another theory is that this Nuthatch was once to be found in this section. To this theory I would reply that since conditions in Middle Tennessee are probably as conducive to the presence of this species at present as in centuries past, it is absurd to maintain this idea. A third theory is that the Mockingbird migrates to the south of us and learned these notes by hearing the Nuthatch in his native haunts. Recent investigation by our Nashville observers indicates that the females and young do migrate southward into the territory of this Nuthatch and it is reasonable to suppose that the young males there learn the notes of that species. The fourth theory is in my judgment the best one of them all, namely, that the Mockingbirds in those sections of Mississippi, Alabama

and Georgia, where the Brown-headed Nuthatch is found, hear the calls of this bird and imitate them. The Mockingbirds adjacent to this group catch these notes, find them pleasing to their ears and imitate them, and so from Mockingbird to Mockingbird the signal calls are relayed until they reach this section of Tennessee.,

Third: The Mockingbird has songs and calls imitating many of the species that are to be found breeding in Tennessee. Eighty per cent or more of the songs of most Mockers are imitations which may be recognized. In the case of others, as low as 30 per cent of their songs would be traceable to imitations of birds now existing in Middle Tennessee. It is significant that almost no winter birds are imitated as far as my records show, and also that few, if any, purely transient birds are imitated. This may be partially at least explained by the fact that Mockers do very little singing in the winter, and therefore do not take the opportunity to rehearse the winter notes of Northern visitants. We are then limited in our study of this mimicry to permanent residents and to summer residents.

Before taking up a list of the birds imitated, I should like to call attention to the differing songs of the Mocker at different seasons of the year. The most remarkable song from the standpoint of imitation is the spring song. It would require a good many adjectives to do justice to this song, and it is the one most often described by those who have named him the greatest of singers. Suffice it to say here then that this song is loud and ecstatic and is designed to win and hold a mate. Then comes in late summer a song which is less imitation and more improvisation. Usually the first week in September marks the beginning of this second period. Later in the autumn period we have a musing rhythmical song, low, sweet and expressive, in which practically no birds are imitated. He seems to be dreaming of the past or planning dimly for the future. This song can be heard in October and early November. The mating urge being no longer present, he apparently sings for his own pleasure alone, and frequently while hidden within the foliage. In midwinter the Mockingbird occasionally indulges in a song quite similar to that of late summer. It might be added in this connection that the night song of the Mockingbird is the most rapturous of them all and is marked by an unusual degree of imitation. This is most commonly heard in the month of June. In addition to the song of the Mockingbird, we should remember that he has certain calls which indicate various emotions, such as danger, protest, fighting, the presence of its young, and other feelings, the notes for which may be interpreted by those who know these calls.

We now come to a list of birds that are most imitated by the Mockingbird. I am placing the Carolina Wren, the Blue Jay, and the Cardinal at the head of the list. It might be said that the Mockingbird has stolen all the songs and many of the calls of the Carolina Wren and this is to a large extent true for the Blue Jay and the Cardinal. All of these birds are common in summer and may be heard frequently. In the next group I shall place the Bluebird, the Titmouse, the Purple Martin, the Red-headed Woodpecker, the Flicker and the Sparrow Hawk. Nearly all Mockingbirds imitate these species regularly and accurately. In the third group I shall include the Bob White, Towhee, Kildeer, Woodthrush, Maryland Yellow Throat and the Crested Flycatcher. Most Mockingbirds imitate these species regularly and accurateyl. In the fourth group I shall place the Wood Pewee, Red-eyed Vireo, Kingbird, Chat, Whippoorwill, Thrasher, Catbird, Baltimore Oriole, Summer Tanager, White-eyed Vireo and the Bewicks Wren. Many Mockingbirds imitate these species and do so fairly well. In the fifth group I would place the following species as represented in the repertory of many Mockingbirds, but not so frequently imitated, the Robin, Warbling Vireo, Red-winged Blackbird, Mourning Dove, Indigo Bunting, Crow, Yellow-billed Cuckoo, Bronzed Grackle, Kingfisher, Meadow Lark, Orchard Oriole, Screech Owl, Carolina Chickadee, Phoebe, Chipping Sparrow, Field Sparrow, Chimney Swift, Louisiana Waterthrush, Kentucky Warbler, Hairy Woodpecker and the Barn Swallow. There are some other birds where doubt should be expressed as to the imitation on the part of the Mocker: the Cowbird, Acadian Flycatcher, Goldfinch, Redshouldered Hawk, Nighthawk, White-breasted Nuthatch, Ovenbird, Migrant Shrike, Song Sparrow, Scarlet Tanager, Yellow-throated Vireo, Black and White Warbler, Hooded Warbler, Sycamore Warbler and the Downy Woodpecker.

As I have already indicated, the extent of imitation depends largely on the individual bird and the season at which he is singing. The average Mockingbird will imitate from 25 to 30 species of birds and some of these species are imitated with different notes. This is true with respect to the Carolina Wren, the Jay, and the Cardinal, to an unusual degree. In rare instances do we find a Mockingbird which imitates more than 35 species. One individual located on the Lebanon pike, near Mt. Olivet Cemetery, was found to have a repertory of 38 species. Since there are only about 70 species of permanent residents and summer residents in this section that can be classed as singing birds, one can see that he has learned a very high percentage by his vocal prowess. I have noted in all about 50 different songs or calls which were imitations of other birds, due to the fact that some were mimicked in two or more different ways.

The writer is now engaged in making a more complete study of this subject, and will welcome any notes or suggestions from bird observers who have been listening to the Mockingbird with a view to recognizing the various notes which this master songster makes as he imitates his fellow birds.

Nashville, Tenn., June, 1934.

UNORTHODOX PROTHONOTARIES By BENJ. R. WARRINER.

1

It is not at all unusual for migrating birds to return to the same neighborhoods, and frequently to the identical spots where they had their nesting places the preceding season. It would appear that a bird in his travels of two thousand miles to Central America would forget his way back to the exact place where he had made his summer home the year before, but as a matter of fact this does not appear to be the case. An unerring sense of direction and place leads him surely to his goal. An illustration came recently under my own observation and justifies recording, especially when there must be added to the account a further description of a bit of extraordinary conduct on the part of the Prothonotary Warblers involved. The case, all told, is one of the most interesting bird stories I know.

The Prothonotary Warbler. a gay little fellow who wears a brilliant yellow hood and cape, and who sings the sweetest of songs, builds his nest along streams or about lakes and swampy places, in small cavities found in dead limbs that overhang the water. He is instinctively a bird of the lowlands and swampy wooded bottoms. An abandoned woodpecker's hole in a dead willow stump protruding from the water is the sort of ready-built house that he prefers. His passion for the water and his love for sylvan solitude, lead him always to the deep recesses of creek and river bottoms.

In the spring of 1932 a pair of these birds accidentally discovered a huge hornet's nest that hung on the wall on the front porch of a farmhouse situated some ten miles from my home, and only a stone's throw from the Mississippi-Tennessee line. Fortunately the people who lived there were deeply interested in the birds and their preservation, otherwise this incident would not now be related. The hornet's nest had been found in the woods the year before and kept intact because of its unusual size. It was pear-shaped and about as large as a three-gallon bucket. It was made of the same parchment-like substance that is found in common wasps' nests. A very small opening had been left at the bottom. The interior was a framework of thin partitions, made of the same material as that found in the outer walls. The warblers having discovered this big, abandoned and inviting domicile, and having duly explored its interior, decided to claim it for their home. Certainly. however, it was not located in the right place for them and for the satisfying of an age-old instinct that was supposed to guide them to an entirely different environment. It was fully half a mile to any sort of stream or pond; the house was on a wooded hillside, high and dry. Nothing about the locus suited the nesting habits of the Prothonotary Warblers-nothing except that luxurious ready-built palace which evidently possessed an appeal for the birds as strong as instinct itself. They moved in and started housekeeping and homemaking at once. They raised their brood there and in the fall all the family flew away to the far south.

The next spring the pair came back and sought out the hornet's nest. They found it in the same place. It had been torn by some intruder during their absence, and rendered unfit for their use. But a human friend discovered the predicament of the birds and came to their assistance by putting the nest into a good state of repair. Then again the Prothonotaries took possession. When I was told about the strange little yellow fellows and their unusual attachment to the hornet's nest, I went out to see them. That same day the fledgelings came, in fact, were still damp when I peered into the cavity. At the moment the old birds were away in search of food. I hid in the bushes to await their return, for I was puzzled about the identity of the tenants of the hornet's nest. Directly the mother bird came and immediately afterward the beautiful male joined her. I was a bit startled to see them, for Prothonotaries had no business there. They had violated every Prothonotary tradition I had learned in ten years of study and observation, but the proof was there before my eyes.

This experience serves as an interesting illustration of the fact that no amount of study will reduce the habits of birds to a mathematical formula, and that they will often depart from their orthodox modes of living.

CORINTH, MISS., 1934.

STATE OFFICERS

200

The following State officers were elected to serve the T. O. S. for one year, beginning July 1, 1934: President, George R. Mayfield of Nashville; vice-president for West Tennessee, Ben B. Coffey of Memphis; vice-president for East Tennessee, Bruce P. Tyler of Johnson City; vice-president for Middle Tennessee, H. S. Vaughn; curator, Albert F. Ganier; secretary, Mrs. F. C. Laskey, and editor-treasurer, George B. Woodring, the last four from Nashville.

SUMMER BIRDS OF SHADY VALLEY By ALBERT F. GANIER and BRUCE P. TYLER.

Some years ago, while studying the detailed maps of the mountains in northeast Tennessee, there was noted a high and extensive mountain cove in Johnson County, called Shady Valley. As shown on the map (Abingdon Sheet, U. S. G. S.), the broad flat floor of this valley is 2,775 feet above sea level, over a mile in width and about five miles long. Killebrew and Safford's Resources of Tennessee, written in 1874, gave the following interesting pen picture of the valley as it was at that time. "Shady is an interesting place. It has a much greater elevation than the Johnson valley (to the west), but is of limited extent. It is a delightful retreat in the hot summer months. The little basin was formerly noted for the excellent iron made at a forge within its limits. It is so elevated that its flora is Canadian in character. Within it, cranberries grow wild and Northern pines and balsams flourish. It is encircled by the Holston Mountain on one side and Iron Mountain on the other (the southeast). Portions of it are swampy and unfit for grain raising. It produces fine grass and considerable quantities of hay are raised. But its remarkable feature is its astounding adaptability to the raising of cranberries. These berries grow wild in every portion of it, and are of the largest species. There are not less than 10,000 acres that would produce them and perhaps this entire surface is now covered with them. Here they have grown from time immemorial without any cultivation. . . . The natives pay but little attention to them, although hundreds of bushels could be gathered at a nominal cost. Now and then the women gather a few bushels and exchange them for coffee, sugar, etc."

Further study of the maps showed no similar area, nor did subsequent inquiry reveal any, so here apparently was a locality which, due to the peculiar ecological conditions which had prevailed through many years, gave promise of yielding certain species of nesting birds that might not be found elsewhere in Tennessee. We realized, of course, that the influx of new settlers and their ceaseless efforts to drain and tame the bogs for plow and pasturage had wrought vast changes and so we found it as on the morning of June 5, 1934, we viewed it from the road-gap on Holston Mountain. Having located ourselves comfortably at a farm house we set about making an intensive four-day survey of the birds to be found in the valley proper, giving special attention to the several hundred acres of swampy, partially wooded bogs. We did not investigate the high ground surrounding the valley, feeling that our survey would be of greater value if confined to the low areas, where unusual vegetative conditions prevailed.

Drainage ditches have, within the last few years, been cut in every direction through the areas in which water formerly stood, yet so great is the seepage of water from the mountains around that this area still remains damp and boggy. At the time of our visit, these ditches were running with water, although the weather had been quite dry. The cleared bog, into which stock had been turned, was rankly grown with many varieties of sedges, including patches of "bull rushes," cinnamon fern and Carolina rose, while black alder and dwarf willows lined the streams or clustered about the springs. The small cranberry plants of which Killebrew wrote are now practically all gone. Two areas of virgin timber are still intact, being of about fifty acres each, and belonging to Mr. J. E. Cole, an old settler. One of these lies in front of his home, in the bog proper. and the other lies some thirty feet higher in elevation on a gentle slope. In both tracts the most striking trees are the red spruce, hemlock and white pine. The first named is very unusual at an attitude as low as this. Hemlock, poplar and white pine were found growing as large as four feet in diameter. Under such growth is a

"jungle" of rhododendron, mountain laurel and associated plants, arising from a thick carpet of sphagnum moss, all yielding a combination found only elsewhere, in this State, at much higher altitudes. Usnea moss was abundant on the trees throughout the bog area, and this doubtless accounted for the fact that the Parula Warbler was the most abundant bird in this environment. The considerable area of wet bogs grown with rank sedges, etc., would seem well adapted to the Short-billed Marsh Wren, Swamp Sparrow and the rails, but none were seen. Other birds, regularly occurring in the large valleys to the east, were conspicuous here by their scarcity or total absence. A large Hawk and a Kingfisher were described to us as having been seen by others during our stay, but we did not observe them. However, a hawk's nest, apparently that of the Broad-wing, was found in a large beech, and a native told us that both birds had been shot at this nest the previous summer.

The valley is a unit in itself, being surrounded on all sides by mountains rising to 4,000 feet. Even at the lower end, the valley closes in and its stream, Beaver Dam Creek. escapes through a narrow gap. The lack of a continuous approach valley has doubtless prevented many typical valley forms from working their way up into Shady. Old settlers told us that many beavers were here during the early days, and that their dams formed a series of shallow lakes all about the valley floor. A colony of muskrats still live in the small pond below Landau's spring. Farms now entirely surround the low bog area, and it is only a matter of years until this unique upland swamp, with its interesting plant and animal life, will pass out of existence as such. A vegetative study of the valley is being made by Mr. J. K. Underwood of the University of Tennessee.

The list of 59 species of birds, briefly annotated, follows. The names are those used in the A. O. U. Checklist, 1930. Sub-species given are those assigned to this area by the Distributional List of the Birds of Tennessee, 1933. Those of which specimens were collected are denoted by an asterisk.

Eastern Green Heron. One seen daily at Landau's pond.

Turkey Vulture. Noted daily, six seen on one occasion.

Eastern Bob-white. A very common bird. Two nests, 1 egg in each.

American Woodcock. Noted on three occasions, about the pond.

Kildeer. Noted at two localities.

Eastern Mourning Dove. Common about the open lands.

Yellow-billed Cuckoo. One observed in Cole's swamp woods.

Eastern Whip-poor-will. One to three heard each evening.

Chimney Swift. Fairly common. Nest found with parent sitting.

Ruby-throated Hummingbird. Fairly common, especially in low woods. Northern Flicker. Common in swamp land deadenings.

Northern Pileated Woodpecker. One or two pairs were found in Cole's low woods.

Red-headed Woodpecker. Only one noted, in a swamp deadening.

Eastern Hairy Woodpecker. Noted at three locations.

Eastern Phoebe. Fairly common. Nests in barns, under bridges, houses, etc. Acadian Flycatcher. Fairly common in low woodlands.

Least Flycatcher.* Fairly common, chiefly in the woodlands along the creek. This was the first time we have been able to record this species as a summer resident in Tennessee.

Eastern Wood Pewee. Fairly common in the woodlands.

Barn Swallow. Six pairs were nesting in the Garland barn. In some were fresh eggs; in others, large young.

Northern Blue Jay. Only five were noted in the valley.

Eastern Crow. Only a few seen, perhaps three pairs.

Tufted Titmouse. Six or more noted at two locations.

Carolina Chickadee. Observed at two lowland locations. Bewicks Wren. Several pairs were located.

Carolina Wren. Fairly common and uniformly distributed.

Catbird. About 10 seen at two locations along the creek.

Brown Thrasher. Five pairs were noted.

Southern Robin.* Abundant, many young birds about. A male collected and sent to Dr. H. C. Oberholser of the U. S. Biological Survey, brings the opinion from him that it "is intermediate between the northern and southern races, but since birds from Roan Mountain are nearer Turdus migratorius achrusterus (Southern Robin) it will probably be better to consider this specimen the same." Wood Thrush. Fairly common in all woodlands.

Eastern Bluebird. Fairly common, chiefly in the deadenings.

Cedar Waxwing. Three observed near Landau's pond.

Starling. Common everywhere.

White-eyed Vireo. Noted at six locations. Mountain Vireo.* Four males were observed in Mr. Cole's two woodlands, feeding in pine and spruce. Their penetrating, distinctive song in this valley recalled to us our past experiences with them on the mountain tops.

Red-eyed Vireo. Common in all woodlands.

Northern Parula Warbler.* Noted in all woodlands and common in Cole's low woods. An old nest was found 9 feet up, in this location, built in usnea moss, which was here abundant.

Eastern Yellow Warbler. Six or eight were recorded.

Blackburnian Warbler. Four males were observed in Cole's low woods, feeding in the spruce. A beautiful male permitted inspection at twenty feet. Except high in the Great Smoky Mountains, we had not recorded it before as a summer resident in the State.

Chestnut-sided Warbler. Eight or ten seen and at one location-the mouth of a small valley on the west side.

Ovenbird. Fairly common in upland woods.

Louisiana Water Thrush. Several pairs noted along Beaver Dam Creek in woodlands, and old nests were found. Diligent but fruitless efforts were made to collect a specimen to ascertain if the form might not be the northerly subspecies S. n. noveboracensis.

Maryland Yellow-throat. Quite common in the bogs. While searching such locations we were surprised to find neither the Blue-winged nor Goldenwinged Warblers present.

Yellow-breasted Chat. Fairly common in cut-over land.

Hooded Warbler. A male observed in Cole's low woods.

English Sparrow. Common, about the farms.

Eastern Meadow Lark. Common, in the open fields.

Eastern Redwing. Fairly common, in bogs and Landau's pond.

Purple Grackle. Eight or ten pairs were present.

Scarlet Tanager. Fairly common in the woodlands.

Eastern Cardinal. Common and universally distributed.

Indigo Bunting. Common; found in all locations.

Eastern Goldfinch. Fairly common, usually in small flocks.

Red-eved Towhee.* Fairly common.

Eastern Grasshopper Sparrow. Two males seen in hay fields.

Eastern Vesper Sparrow. About six pairs were located, two of which were feeding young out of the nest.

Eastern Chipping Sparrow. Abundant. A nest held young.

Eastern Field Sparrow. Common. A nest held three eggs.

Mississippi Song Sparrow.* Abundant in the low ground. Several nests found. Two specimens which were collected have been tentatively referred to this race, Melopiza melodia beata, by Dr. Oberholser.

NASHVILLE, (A. F. G.) AND JOHNSON CITY (B. P. T.), June, 1934.

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BIRD BANDING BREVITIES. NO. 1

By MRS. F. C. LASKEY,

Juncos have been abundant about the banding station this past season, 152 having been banded as compared with 98 and 4, respectively, the previous two years. This should not be construed to indicate their relative abundance locally, but more likely indicates they have learned that millet is plentiful around the traps. There were 8 Junco returns. The first spring migrant of the Field Sparrows appeared at the station on March 7. 1934. Its bright, clean plumage distinguished it from the wintering group in their dull gray garb. The peak of the Field Sparrow migration came this year in April, instead of March, as in 1932 and 1933. The delay was probably due to the cold, stormy weather of early spring. As usual, there were more of this species handled than any other. White-crowned Sparrows* increased in numbers about the station this year. Three returned for the third year. Repeat records indicate a group of 15 remained close to the station throughout the winter, while about 50 transients stopped in fall, spring or both. Savannah and Lincoln's Sparrows have been trapped only during the month of March, April and May for the past three years, which may be an indication they use a different migration route in the fall. A few Savannah Sparrows, of course, may be found about Nashville during the winter months. Six Lincoln's Sparrows were banded between April 22 and May 22, 1934, with a repeat on May 23. Of particular interest was the remating of the resident Mockingbirds known as "B" and "Y" (banded in 1931), with their mates of last year.** One of the females wintered at the banding station; the other migrated, returning March 27. Bluebird No. B 176077, a male, banded as an adult April 16, 1932, is known to have chosen the same nest box four times in three seasons, assisting in the raising of at least four broods with a different mate for each brood. Brown Thrashers appear to be loval to their homes, for 8 returned to their respective places of banding this spring and early summer. One is back for his fourth known season and has a different mate from last year; two for their third seasons; one banded in Belle Meade in 1932 was again taken this year. Of the 191 banded since August, 1931, 22 have been heard from as returns or recoveries; 16 returned to place of banding, 4 were reported locally, I was recovered in Fayette, Ala., and 1 was recovered in Cypress, La. Three Chipping Sparrows returned this spring for their third seasons. One adult made Indigo Bunting banded October 9, 1933, returned May 19, 1934. A Robin recovery was reported by the Bureau of Biological Survey from Hanceville, Ala., killed by a boy. It had been banded by me as an adult October 15, 1931. Reports have just been received of a Bronzed Grackle banded at Belle Meade substation April 1, 1932, killed in Centerville, Ala., November 27, 1933. A Mourning Dove banded April 8, 1933, was shot in September at Lewisburg, Tenn. The total number of birds banded from August 1, 1931, to May 31, 1934, is 3,734, representing 69 species; the return and recoveries number approximately 300, but the repeat records run close to 3,000.

NASHVILLE, TENN., June, 1934.

*White-crowned Sparrow return dates and Brown Thrasher return and recovery dates appear in July, 1934, Bird Banding.

**For previous history of these Mockingbirds, see The Migrant, Sept., 1933.

SPRING FIELD DAYS

The annual Spring Field Day of the Tennessee Ornithological Society was held Sunday, May 6. near Nashville, and in spite of a rainy start, about forty students of bird-life were in attendance. The site of the outing was Idlewild Wood, on Stone's River, where several members of the Society have summer homes and have created a bird sanctuary on the bluffs above the river. Stops were made at several points en route, including Shelby Park, Knapp Farm and ponds at which migrating shore birds were found stopping briefly on their way northward. Braving fitful showers, the group fallied forth on arrival, in several parties, jotting down on bird-listing cards the various species as they met them. At one o'clock, the farm bell at Dr. Vaughn's camp summoned the searchers to a bountiful repast provided by the lunch committee and experiences of the morning were exchanged during the meal. At a short business session, a report of the nominating committee was heard and State officers for the coming year were elected, as shown on another page. A resolution was made and adopted, thanking the officers of the past year for their During the afternoon the members visited the wild flower garservices. dens on the bluff or fared forth to add new birds to the already auspicious list. The warbler migration was found to be in full swing and no less than twenty-one species of this family of birds were found. At a final gathering, lists were compared and it was found that ninety-seven different kinds of birds had been seen during the day.

The annual Spring Field Day of the Knoxville Section was held on April 29, in the vicinity of the Island Home bird sanctuary above Knoxville, on the Tennessee River. The weather was cold, windy and threatening, so hopes for a record list were abandoned at an early hour. In all, there were about thirty participants in the listing, including several members from a distance. Scouting parties were detailed to search the river and out-of-the-way places, and at the end of the day the list had been built up to ninety-three species. This was seven short of the list of last year. A camp-fire lunch was served at 1 o'clock, under the pines on the premises of Harry P. Ijams, perennial host. At this time a preliminary check was made of the lists and the collection of mounted birds owned by the Knoxville section was looked over. A further search during the afternoon netted several more species, including a Lincoln's Sparrow. No birds of unusual rarity were listed, but the total included eighteen members of the warbler family. Officers of the Knoxville Section are John Bamberg, president; Dr. O. H. Wiles, vice-president; S. A. Ogden, curator, and Miss Mary Ruth Chiles, secretary-treasurer.

The Memphis Section held its annual Spring Field Day on May 6, south of Memphis, near the State line. where Lakeview, on Horn Lake, was used as headquarters. An excellent turnout of members and a diversified region made it possible to build up a list of one hundred and fifteen species of birds before the day closed. This number exceeded any one day listing that is known for the State. Mr. Coffey's notes, which follow in The Round Table, give the most interesting birds observed during the day, as well as a list of the localities visited. The present officers of the Memphis Section are Miss Mary Davant, president; Earl Henry, vice-president, and Miss Alice Smith, secretary-treasurer. An election of officers for the coming year will be held in October.

NOTE: Due to lack of space we are not printing the consolidated spring field lists this year. The species found closely parallel the lists printed in our June numbers for the two years past.—Editors.

THE ROUND TABLE

THE SEASON AT MEMPHIS: Records from Mud Lake and from the Horn Lake barrow pits, at the Mississippi State line continue to be of interest. On March 18, about 19 Blue Geese and 5 Lesser Snow Geese, 4 to 6 Shovellers, and a female Bufflehead were seen. Earl Henry noted 2 Gadwall on March 22. On March 25 a pair of Canvasbacks, 19 Shovellers, and 2 Blue Geese were seen. Over 20 Shovellers were seen there on the 31st and 2 on April 15, while on April 20 we saw 29 flying overhead, north of town. The Bufflehead was seen up through April 8. From 800 to 1,000 L. Scaup were on Horn Lake March 25, while about 40 on the barrow pit to the south dwindled down to 3 by May 6. On the latter date 18 Coots and 6 Blue-winged Teal remained, and a female Hooded Merganser was seen, trailed by 8 young ones about 4 weeks old. On March 31 five Upland Plover were seen on the Mud Lake Levee; this is the second Memphis record. On April 8 a Loon was seen on Horn Lake (my first personal record). No unusual shorebirds were noted this spring-the common ones, the Lesser Yellowlegs, the Solitary, Pectoral, Least and Semipalmated Sandpipers arriving March 11, 18, 22 and April 15 (the last two) respectively-the less common ones, the Greater Yellowlegs, March 11, and Spotted Sandpiper, April 8. As high as 12 Greaters were seen on April 22 and 9 on May 6. The Semipalmated Plover was often seen in small groups and arrived April 20.

The main blackbird roost at Lakeview was found to be in a heavy growth of young willows about a half mile long and 50 yards wide, with about a guarter mile of open water beyond the west end. The Shovellers and most of the other ducks noted above were seen here. The willows, extending 8 to 12 feet above water, were in water 1 to 5 feet deep and over. A better estimate of the number of birds present, as given in the March Migrant, was made at the roost on March 20: Bronzed Grackles, 200,000; Red-wings, 200,000; Cowbirds, 100,000; Rusty Blackbirds and Starlings, 100,000. The Starlings diminished in number first, and the Rusties also become less common, although some were seen and banded as late as April 11. The Grackles also decreased in number so that the flock had a ratio of about 3 Red-wings to 1 Grackle and 1 Cowbird as summer opened. At the last of March the total number was estimated as 300,000, at which time a banding expedition failed on account of too much moonlight. Another quest failed on April 11, due to the fact that the flock apparently had dwindled to about 5,000. A large number of Red-wings are nesting here in this roost, likewise 4 or 5 pairs of Warbling Vireos. Two Least Bitterns were seen here on June 3 and 1 to 3 Soras also up to that time. The Pied-billed Grebes evidently did not nest in this vicinity this year, due to shallow water caused by lack of rainfall.

Three record-breaking field trips were made this spring, despite the fact that on the two best ones several hours were lost, due to rain. On April 22, 109 species were listed, including 3 Prairie Horned Larks (Municipal Airport), 1 Grasshopper Sparrow, 1 Lark Sparrow (first record within 40 miles), 1 Prairie Marsh Wren, 1 Anhinga, 300 Double-crested Cormorants (moving northward), 1 Osprey, and 16 species of warblers. A Starling, last of the winter horde, was noted. An April 29, 100 species were listed, including 25 Kingbirds, 17 species of warblers, and nearly all the species of waterbirds noted in the first paragraph. On the annual field day of the Memphis chapter, May 6, 115 species were noted, all but the Painted Bunting (No. 4) being seen at our regular tramping grounds—Lakeview, Miss., north on the Y. & M. V. R. R. into Tennessee, and the woods, back for lunch, then a visit to the levee and the barrow pits. The list included 100 Bobolinks, a few thousand of Red-wings, Cowbirds, and Grackles coming in to roost, 2 Ruby-crowned Kinglets (late), 42 Nighthawks, 3 Wilson's Snipe, 2 Yellow-bellied Sapsuckers, 2 Savannah, 5 Swamp, 6 Lincoln's, and 7 White-crowned Sparrows, 20 species of warblers, including 1 Mourning Warbler, 1 Fish Crow, 5 Double-crested Cormorants, 10 Common Terns, 7 Black Terns, and most of the waterbirds previously mentioned, including the Hooded Merganser. On the April 22nd trip our first and, so far, only "flight" of hawks was noted. We were seated on a small rise near Nonconnah Creek, north of the Municipal Airport, and from 12 to 12:15 we saw the following hawks flying eastnortheast in groups as indicated: Cooper's Hawk, 6, 4, 22, 5, 1, 2; Broadwinged Hawk, 5, 10; and Marsh Hawk, 1, 1.

The Red-shouldered Hawk nest mentioned in the March Migrant contained two young hawks about a week old on April 29. On the same date no Mississippi Kites were seen in the Ensley bottoms. but on May 13 two were seen. On May 27, Mr. Ganier joined us to make a further investigation of the old nests found in these bottoms last winter. On climbing the first two, he reported them in fine condition, with new lining, including green leaves. Kites were observed at each nest, but due to not having laid yet, they offered no protest. The third nest tree was covered with poison ivy. They will be revisited at a later date. Eight of the Kites were seen soaring together a half mile away. Two Kites have been seen over Vance Woods, inside the southern city limits. An Osprey was seen at Mud Lake, April 22, May 13, and two on May 19, but none have been seen since. Lincoln's Sparrows were more common than usual-though still relatively uncommon-being seen in many places from April 26 to at least May 6. I am now sure of the identification of 5 of this species seen on December 25, 1933, at Lakeview, Ark, A few Vesper Sparrows were recorded March 20 and 31. On April 29, at Mud Lake, we watched for some time a Wood Pewee with white outer tail feathers and a white tip to the tail. On a trip eastward along the southern edge of Tennessee, on April 1, several pine woods were searched for Nuthatches and Pine Warblers. Only the latter were found and they not until we had nearly reached Shiloh. Mrs. Coffey noted 2 Brown-headed Nuthatches on April 15 at their usual place, at Hickory Flat, Miss. A Blueheaded Vireo was seen in Overton Park on April 5 and again on May 1. These are our first local records. An Orange-crowned Warbler (rare) was seen there April 12 and 2 Cape May Warblers on April 29. Cerulean Warblers were common from April 15 to 19 .- Ben B. Coffey, Memphis.

BROWN-HEADED NUTHATCHES IN NORTHEAST MISSISSIPPI: A group of these interesting little birds seem to have settled permanently in the small patch of pines at Waukomis Lake, in Alcorn County, Miss., ten miles due south of the Tennessee line. This particular woods covers an area of about two acres, while in close proximity there are other spots thickly covered with pines. Elgin Wright and I found the birds the first time this year, the middle of February. There were only three of them. On March 10th, I located them again, but it was too dark to make an accurate count. On April 20th, I found a flock of nine. Most of them were young birds, grown in size, but still depending on their parents for food. The old birds were warbling soft but distinct notes as they searched for food for their babies. Interspersed with their song there was the usual metallic call.— Benj. R. Warriner, Corinth, Mis.

ANOTHER VISIT TO "CRANETOWN:" On May 13, 1934, a trip was made to Reelfoot Lake to visit the large heronry there, often called "Cranetown." The trip was made by Dr. H. S. and Will Vaughn, A. F. Ganier, Vernon Sharp, and myself. We crossed the lake by motor boat from Samburg to the head of Bee-Tree Basin, then waded through swampy woods (passing over Black Bayou) for approximately a mile to the nesting grounds. The bulk of the nests were placed high in huge cypress trees with the water varying at the base from two to three feet deep. It was estimated that there had been no great change in the population during the past year, there being about 400 pairs of American Egrets, 200 pairs of Cormorants, 200 Wards (Great Blue) Herons, 50 Anhinga, and 12 Black-crowned Night Herons nesting there. An unsuccessful search was made for nests of the Little Blue and Yellow-crowned Night Herons, also the Snowy Egret. The larger trees held from ten to thirty nests; several of each species in every tree. About seven Black Vultures were noted sitting on dead limbs throughout the nesting colony. On this date nearly all of the nests of the Great Blue Heron contained young, some as old as four weeks; the American Egrets either had young or eggs that were ready to hatch; the Black-crowned Night Herons were building in the young cypress trees, only a few nests containing fresh eggs. The Cormorant nests held eggs, but some held young a week old, while the Anhinga nests contained eggs. The Prothonotary Warblers, Coots and Red-shouldered Hawks were very conspicuous about the lake, while the Least Tern, a Mississippi Kite, an Osprey, and a mature Bald Eagle were the outstanding ones on the list. For a more detailed description of "Cranetown," see The Migrant, Vol. IV., page 13.-George B. Woodring, Nashville, Tenn.

SPRING NOTES, NASHVILLE: The male Cardinal at my home, now at least eleven years old, is being kept busy teaching the ways of the world to two of his offspring, while his mate is brooding a second set of two eggs. The first brood of young left the nest on May 8, but one of them disappeared. This first nest was at the south window in the same crotch they have used for six years past. On April 15, with Calhoun and Hayes, we examined the mile of high cliffs overlooking Bell's Bend of the Harpeth River. Two young Great Horned Owls flew from a ledge more than a hundred feet above the stream and in a cave in the cliff a Black Vulture flushed from two fresh eggs. A half mile away a Red-tailed Hawk was seen sitting on her nest in the top of a large beech; the nest was found to contain but one egg. Along the river, two Solitary Sandpipers and an Osprey were seen. A trip to Lewis County on April 22, returning via Columbia, netted me my earliest record for the Bob-o-link; four were seen in a clover field and there may have been A Solitary Sandpiper, a Lesser Yellow-legs, and a Wilson's Snipe more. were seen at small ponds en route. At a Hohenwald church, at noon, a flock of 200 Swifts were warming themselves in the heated air which came from a chimney. The weather was chilly and a drizzling rain was falling. A breeze blew the heat off to one side and the Swifts would circle until they felt it. They would then drift slowly along through the current of warm air until they passed over the top of the chimney. This was repeated many times while I watched. Carolina Wrens often choose queer places to nest. On May 6, at my place on Stone's River, a pair built in the bottom of an empty ash can which had been placed on the ground in an open place. There was no top on the can. Later, one young was drowned inside after a heavy rain, but the others got off all right. Their next nest was on a shelf in the kitchen, entering the house through an actic window. Visited Reelfoot Lake on May 13; for notes, see Woodring's writeup above. On May 19, waded the marsh 7 miles north of Springfield with Calhoun, where we found and photographed two nests of the King Rail, containing 11 and 13 eggs, respectively. These are the first nests with eggs to be found of this species in Middle Tennessee. A Sora Rail was flushed in this 8-acre marsh; probably a transient. Redwings, Green Herons and Prothonotary Warblers were the other marsh-loving birds present. Returning, at sundown, we stopped to observe a large bird roost in two dense sugar maples in a roadside yard. Entering the thick foliage were Purple Martins, Robins, Grackles, Cowbirds, English Sparrows and Redwings, in the order given to the number of several thousands. The Buena Vista slough in North Nashville has produced some good wading bird records this spring, as follows: Solitary Sandpiper, April 25 (1 noted); Spotted Sandpiper, May 6 (1), 17 (1), 22 (2), 23 (2); Least Sandpiper, May 6 (6), collected one of them on May 8; Semipalmated Sandpiper, May 22 (6), 23 (30), collected one; Semipalmated Plover, May 17 (9), May 23 (5); Wilson's Snipe, April 25 (1); King Rail, May 23 (1); Lesser Yellowlegs, April 25 (12); May 5 (19), and Greater Yellowlegs, April 28 (4 reported here by Mayfield). On May 20, with Mayfield and Campbell, revisited Mingo Swamp and Long Pond in Franklin County (see The Migrant, September, 1933). In a marshy meadow, grown with rushes, broomsedge and briars, we found a Short-billed Marsh Wren which played hide and seek with us at a distance of only 6 or 8 feet. This species may possibly breed here, but we could find no nest nearby. The small open pond in Mingo was without birds except for a few Redwings, a pair of Green Herons, a Great Blue flying over, and a pair of Red-shouldered Hawks. Two nests of the Harvest Mouse were found here containing young. They were round balls of grass, built in the sedge above water standing three inches deep. At a small pond in the north end of the swamp we found a Yellow-crowned Night Heron, it being the first summer record for this section. Prothonotary Warblers were seen and heard nearby. At Long Pond, 3 miles southeast, we heard an American Bittern "pumping." Wading into the two-acre arm, thickly grown with button bushes, willows and wild rice, I as unable to find its nest. Two nests of the Green Heron each held 5 eggs and there were many nests of the Redwing Blackbird just finished. After finding two lastyear's nests of the Pied-billed Grebe, I was much pleased to wade into an occupied nest containing 5 fresh eggs. The bird had not covered them when it left the nest, as it usually does. This is the first nest with eggs of this Grebe to be found in Tennessee. May 27 was spent at Memphis; see notes by Mr. Coffey, above. On May 30, at Craggie Hope, I visited the Sharpshinned Hawks which I first found nesting there in 1919. They were found to have nested in a pine by a used pathway, and the nest, still covered with down, was empty. I concluded that some one had shot the female and that crows had carried off the eggs. A second pair, located last winter two miles away, was found incubating a beautiful set of 5 eggs. Not 50 feet away was the nest of a Hooded Warbler, containing 4 young. This pine woods had been visited by a March fire which killed the undergrowth, so the warblers had built their nest in dead vines, 4 feet up, and entirely exposed to view. On May 1 and 2 Adams of Alpine and the writer visited a number of upland marshes in Putnam and Overton Counties. I regret to say that some of the best of these marshes had been drained recently. Our only waterbird find of interest was two pairs of Least Bitterns in a 2-acre pond covered with cat-tails and a nest of one of them containing 5 eggs. We did not visit Little's Pond, 7 miles north of Livingston, heretofore reported on as a breeding place for several species of waterbirds. June 10 was spent in Fentress County. Four days of field work, June 5-8, inclusive, in Johnson County with Tyler, is described on page 21 of this issue .- Albert F. Ganier, Nashville.

EARLY NESTINGS: The following "first nests" were found this spring about my home in the suburbs on Graybar Lane. Towhee. April 8, 4 eggs, nest in a tuft of bluegrass at rear of lot. Bluebird, April 8, brooding 4 eggs in nest box. Cardinal, April 11, began incubating a set of 3 eggs in nect at breakfast room window. Bewicks Wren, April 10, laid first egg of set in gourd on garage. Mockingbird, April 12, found brooding a set of 4, in nest placed on exposed root of tree under overhanging creek bank—same situation as first nest of this yellow banded pair used last year. Mourning Dove, April 12, noted building. Brown Thrasher, April 12, laid first egg of a set in young cedar. Robin, April 13, laid first egg of a set in dead wild cherry at garage. Flickers nested in one of my nest boxes.—Mrs. F. C. Laskey, Nashville.

OWLS, HAWKS AND VULTURES: On February 4, I found a nest of the Great Horned Owl containing two fresh eggs. It was located forty feet above the ground in a broken-off dead oak in the Radnor lake hills. Two nests of the Red-tailed Hawk were visited on March 4 and the owners were at each nest. Climbing to one of these, which was situated on the border of an open field in plain view of a farmhouse, I found one fresh egg; a week later the bird was found sitting on three eggs. On this same day, March 11, a third Red-tailed Hawk's nest was found with the bird sitting on it. The first Red-tailed Hawk's nest found on March 4 was one-half mile distant from the other two, which in turn were one-quarter mile apart. These nests were near Vaughn's Gap. Fifty yards from the hawk's nest of March 11, a Black Vulture's nest on March 4 held two eggs that had been incubated several days. They had been laid under the limbs of a fallen tree on top of a ridge in thick woods. Because of the markings the eggs were taken for my collection. Passing here on April 14, I found that the birds had laid a second set which appeared to be well incubated. This time the nest was situated in a stump fifteen yards nearer the hawk's nest. In spite of the fact that February and March were much colder than normal, the nests of the hawks were as early as the earliest I know of here and the Vulture within four days of the earliest .-- Jack Calhoun, Nashville.

A TWICE USED NEST:—Near my home this spring a White-eyed Vireo used the same nest in which she had reared a brood last year. This nest was in a hawthorn tree about three feet above the ground, and was attached to the limb on three sides instead of the usual two. It was protected overhead by a thick mat of vines and was noted in the early spring to be in good condition. It was so well preserved that the birds had only to add a little lining material. Four eggs were laid which hatched May 18 and the young birds left the nest successfully. The old nest is still in good condition. I have never before heard of a vireo using an old nest.—Jack Calhoun, Nashville.

RAISING A COVEY OF QUAIL: My opinion of raising Bob-white in captivity is that is is a most interesting experience for one but a serious and dangerous course of training for the birds. In June, 1933, a nest of eleven eggs was brought to me, it having been cut over while mowing hay I placed them under a sitting Buff Cochin Bantam hen and they all hatched in a few days. She mothered them well, losing only three. The other eight became very tame-for wild things-and would come shyly at a certain call we made. They roosted with their foster-mother in a coop made proof against small animals until they were seven weeks old, after which the little hen left them and went to roost in the hen house. The little Bob-white returned each evening for some time to roost in the coop, which I closed carefully each night. In roosting, they arranged themselves in a circle, with heads out, after the manner of old quail, doing so instinctively, for they had no old birds to teach them. Finally they ceased to come to the coop to roost but would appear early in the mornings and feed with the chickens and guineas about the barn. They showed no fear of man, dogs or cats. When seven weeks old, on July 25, they were banded with bands A462336 to A462343. Late in August they began to disappear, one by one, until finally only four came to feed. I found number 339 dead in the pasture next to where it was raised but no indication of what killed it. Number 337 was killed by a negro man with a rock, as it entered a neighbor's chicken yard. What became of the rest of them I do not know, but it would seem they had never learned the art of taking care of themselves and of avoiding danger.

On April 26, 1934, four Bob-white entered my yard from where I had raised those last year. They walked about as though they felt at home and may have been the remnant of my little flock of last year. I could not see if there were bands on the legs due to the long grass, nor did I attempt to trap them for fear of frightening them away.—Mrs. Sandford Duncan, Nashville, Tenn.

FORSTERS TERNS AT KNOXVILLE: On the afternoon of May 11, Mr. H. P. Ijams noted a flock of ten terns on the Tennessee River at the mouth of Williams Creek, opposite the municipal water plant above Knoxville. He called the writer and on close examination we were certain that they were either Common or Forsters Terns, so one was collected to establish positive identity. The flock of ten had been there since the afternoon of the 10th and they were very tame. As we paddled up to them they were resting on a large rock on one of the jetty bars and presenting a very pretty picture. Their tameness made the job of collecting one difficult, as they were in a compact group and did not fly until approached to with about twenty feet; however, one soon separated himself from the others and was collected. Upon being picked up and examined, it proved to be a Forsters Tern, *Sterna forsteri*. After the one was shot the other clustered around, uttering excited cries for a few moments, then flew off down the river and were not seen again.—Jim **Trent, Jr., Knoxville**.

Note: There are two previous records of this species at Knoxville. On April 27, 1922, a tern was shot at Hodges Pond, 10 miles west of Knoxville, and mounted. It was later identified by Dr. H. C. Oberholser as the Forsters Tern. Another specimen was taken April 30, 1933, on the Tennessee River above Knoxville and was identified by the U. S. Biological Survey. Data on these two birds was furnished by Messrs. Adams and Ijams of Knoxville. In certain plumages, this species very closely resembles the Common Tern, but the latter has not as yet been recorded in East Tennessee.—A. F. G.

A BACHMANS SPARROW NEST: A nest of this species was found near Johnson City on May 18, 1934. This sparrow lives in proximity to woodlands and, true to its reputation, the nest was found in an abandoned field overgrown sparsely with sedge grass, daisies and various weeds, on a hillside facing the west and about three hundred feet distant from heavy woods. It was built in a clump of grass and held a full clutch of five white eggs, nearly fresh. There was no arched over covering to this nest as is so often the case with this species, but the eggs could be plainly seen from above.

The Bachmans Sparrow has been known to nest here for many years, but it is generally overlooked on account of its inconspicuous plumage and retiring habits. The nest is of very interesting construction, being high on the back and sides and low in front where the bird enters. It is built upon the ground usually in a clump of dead grass. We have found these birds to return with regularity to their accustomed breeding grounds.—Bruce P. Tyler and Robt. B. Lyle, Johnson City.

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The Tennessee Ornithological Society has recently become affiliated with the Tennessee Academy of Science and in that capacity will co-operate with the Academy in matters pertaining to ornithology. Our Society has for some years been affiliated with The Wilson Ornithological Club, a national organization and publishers of *The Wilson Bulletin*, one of the leading journals of bird life.

THE MIGRANT

A quarterly journal, devoted to the study of Tennessee birds. Published at Nashville, Tenn., by The Tennessee Ornithological Society. Editor-Treasurer, George B. Woodring, 1414 Stratton Ave., Nashville. Associate Editor, Albert F. Ganier, 2507 Ashwood Ave., Nashville. Regional Editors: Ben B. Coffey, Memphis; George R. Mayfield, Nashville; Harry P. Ijams, Knoxville; and Bruce P. Tyler, Johnson City. Business Manager, Vernon Sharp, Jr., 220 Capitol Blvd., Nashville.

A complete list of officers is published annually in the June issue. Subscription price, sixty cents per year, free to members.

Dues for Active and Corresponding Members, \$1 per year; for Juniors, 60c.

All remittances should be sent to the Editor-Treasurer.

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

SUMMER PROBLEMS

There is no idle season for the student of bird life. As the sparkle of spring gives way to the humdrum days of summer, some of us who have been on our toes to record the migrants and to peek into the nesting affairs of our feathered friends are inclined to feel that, in a way, the big show is over for the time being. Not so, however, for the true student; every season in a bird's life is an active one and if we would know their life histories, we must follow thru. The larger birds, with few exceptions, raise but one brood each year, for guarding their offspring from dangers and teaching them to shift for themselves consumes many weeks of the parents' time after the young have left the nest. With the smaller birds, however, two broods is the usual thing and some, such as the wrens, finches and doves, essay a third and occasionally a fourth brood. To what extent are these late broods successful, what percentage of our birds indudge in them, are not late summer drouths disastrous to the young? There is much that is yet to be learned about late nestings. In the matter of song-so universal in the early spring-how is it affected by the advent of Summer and when does it cease for the various To what extent do the family groups cling together, and do the species? males continue to defend their territory after the breeding season is over? During late Summer, birds are apparently scarce; why is it we see so few at that season? Are our birds as a whole decreasing, as some claim? Then there are the gregarious species, which begin to form roosts by midsummer. The location of these roosts may be ascertained by "sky-trailing" the birds at sundown. Their study is an absorbing subject during the late summer and early fall. In addition to Robins, Grackles, Cowbirds and Purple Martins, there are many other strange "bed-fellows" which tag along and drop in for a safe night's rest. For those who would aid the birds about their homes, nothing quite equals a supply of water for drinking and bathing. Home birds too will appreciate the maintenance of a feeding shelf and will bring their offspring along, thus affording one an opportunity to learn more of the family life of the birds about us.

Bird-banding can be profitably followed during the summer months, thus securing a more accurate check on their movements at that season and tagging them for future observations. We would conclude by saying that such experiences as you may have that interest you will doubtless interest others as well and you can hardly count yourself "square with the world" unless you write these up for publication. Your observations then will not only afford reading for the present but reference for the future.

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