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FALL AND WINTER BEHAVIOR OF MOCKINGBIRDS

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The unique habit among Mockingbirds (*Mimus p. polyglottos*) in Tennessee of choosing territory in autumn, their extraordinary song performance, and their behavior during that period, were described only briefly in previous papers on color banded birds observed at the banding station. There are two reasons for this, the most important one being that the garden had been occupied for several years by the birds which furnished such interesting data for the studies. Both of the males, designated as *B* and *Y*, had already established their claims to territory at the banding station when research by means of colored bands was started in 1932. Also on account of obscuring vegetation in early autumn, it is much more difficult than in early spring, when trees are bare and leaf growth sparse, to identify birds by their bands and to determine the source of calls and songs. Thus it took a longer period of time to gather data and to piece together the bits that gave an understanding of what was taking place.

In a previously published paper ("A Territory and Mating Study of Mockingbirds", *Migrant*, September, 1933) a description was given of the defense of winter territory and the spring song and courtship performance of *B* and *Y* in 1933. The second paper ("Mockingbird Life History Studies", *Auk*, October, 1935) was a continuation of the history of the same individuals, correlating the singing of the males with the nesting cycle and showing the effects of temperature variations on the spring singing. Individual characteristics of the two males were described. The songs and behavior in 1934, when both remated early with their respective mates of 1933, were contrasted with the performance of the previous year. Nesting data for two seasons were given for both pairs. Some conclusions were reached relative to Mockingbird migration movements here, based on observations of banded birds at the home station and at other points in Nashville.

Almost 400 Mockingbirds have been banded during a period of about four and a half years. Three substations are operated at the

homes of friends; one four miles southwest, one three miles northwest, and the other almost a mile southwest. In addition, observations of banded individuals have been made at two homes in the more closely built section of town nearer the business district.

For sight identification, colored bands were used in addition to the numbered aluminum Biological Survey bands on all Mockingbirds except the fall transients. At first only one colored band was used, the male being banded on the right tarsus and his mate with the same color on the left tarsus. The pair banded with blue were called *B* and *Bf*, the yellow banded pair became *Y* and *Yf*. However, as the numbers of birds and size of areas studied increased, it became necessary to use combinations of two colors. Three bands were placed on one leg and three letter designations indicated the position, thus *GAG* is banded with two green bands with the aluminum band between them.

TABLE 1. Record of the individuals mentioned in this paper.

Name	Sex	Date Banded	Place	Last Seen	Status
B*	♂	Aug. 27, 1931	Home station	March, 1935	Permanent resident
Bf	♀	April 14, 1933	Home station	Dec., 1935	Permanent resident
Y†	♂	Oct. 12, 1931	Home station	June, 1934	Permanent resident
Yf	♀	April 16, 1933	Home station	July, 1934	Sum. res. (2 sea.)
L	♂	Sept. 15, 1933	Home station	Feb., 1936	Permanent resident
ABA**	♂	May 8, 1935	75 yds. N. E.		Permanent resident
R2	♂	Nov. 30, 1934	Home station	Jan., 1936	?
AA	♂	May 29, 1935	300 yds. south	Now home station occupant	
GAG	?	Sept. 2, 1935	Home station	March, 1936	?
AYG	♂	July 11, 1935	90 yds. N. E.	June, 1936	?
BAB	♂	March 29, 1936	Home station	April, 1936	?
R	?	Nov. 8, 1932	Home station	March, 1933	Winter resident
X	♀?	Nov. 1, 1934	Home station	March, 1935	Winter resident
YAY	♀	March 31, 1936	Home station	Now home station occupant	

**B* and *Bf* mated 1933 and 1934. The 1935 courtship in progress when *B* disappeared.

***ABA* was then joined by *Bf* from March, 1935, to August, 1935.

†*Y* and *Yf* mated 1933 and 1934. She migrated for the winter.

Other known females have been color banded but are not included in this table as they appeared only one nesting season and did not winter here.

During midsummer of 1935, for the first time since banding activities began in 1931, the situation seemed to indicate that it might be possible to observe an entirely new group of territory occupants in the fall at the home station. *Y* had been found dead in June, 1934; *B* had presumably fallen victim to a predator in March, 1935, soon after rejoining *Bf* for the third mating; *Bf* had left immediately to mate with *ABA* at a neighbor's about seventy-five yards northeast. The territory vacated by the *B*'s was immediately monopolized by *L* and his mate but they had left after their first brood fledged and then

nested about 150 yards south. Their departure in May, 1935, had left one young male *R2* in possession of the front section where *L* had wintered in 1933-34. *R2* did not win a mate until late May, and at the end of June when her chicks were about ten days old, she and her family mysteriously disappeared. *R2* still frequented the station until July 10 but was not found in the neighborhood during midsummer.

Much as the disappearance of *B* was regretted, the new season was awaited with much interest for it seemed the desired opportunity was at hand to see territory selection and defense from its beginning.

Mockingbirds have a marked preference for the habitat of man and nearly all suburban and country homes are chosen by one or more of these sprightly songsters as a suitable place to rear a family. Particularly in the fall is it noticeable how territories are chosen close to dwellings in this area. The food supply is an important item of consideration.

Our lot, located one mile beyond the city limits and five miles from the central business section of Nashville, has a north frontage of 200 feet and is 300 feet deep. It is bordered on the sides and rear by dense clumps of shrubbery, trees, and vines, and across the front, by a clipped hedge. The vine covered house has foundation plantings of shrubs at front and sides and a group of young hackberry trees at its rear. In front of the house and at the extreme rear of the lot are lawns. Inside the shrub and tree borders are informal plantings of flowers and a small pool. Dividing the lot is a "wet weather" creek that goes dry in summer. With the exception of a few old silver maples and numerous young hackberries, all plantings have been made within the past nine years and with the aim of attracting birds to the garden. Fruit bearing trees, shrubs, and vines were used, including wild and cultivated cherry, peach, plum, and apple trees, amoor river privet, *Ionicera*, dogwood, *pyracanthus*, *nandina*, bittersweet, rose vines, and others, which, with the popular hackberries, furnish food and nesting places. Although this section is changing rapidly through real estate projects, there is still considerable vacant property adjacent to the banding station, but most of it is cut over at least twice in summer and burned in spring. This vacant property contains old maples, hackberries, and some underbrush along the creeks with a few blackberry and elderberry bushes. In addition to the natural food thus provided, a halved apple or two are placed daily where the pieces may be seen easily. In season fresh pokeberries are kept in and near the traps. Water in summer, suet, and small quantities of raisins and dried pokeberries in winter are also provided. It will be seen that

the banding station offers little more than a very favorable natural setting and background for Mockingbird study. In other words, the amount of food provided is not in such quantity that it would create an abnormal situation by attracting unusually large numbers of this species.

Each year there has been a rhythmic rise and fall in numbers of Mockingbirds at the station which may be illustrated by Table 2.

TABLE 2. Showing number of Mockingbirds banded at Home Station.

	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1932	0	0	1	0	1 im.	1 im. 1 ad.	0	3	4	0	1	0
1933	0	0	2	3	3 im.	5 im. 5 ad.	1 im.	36	41	0	0	0
1934	0	0	0	0	4 im.	1 im. 4 ad.	1 im.	3	7	2	2	0
1935	0	0	0	1	2 ad.	4 im.	2 im. 2 ad.	7	30	9	0	0
Total 4 yrs...	0	0	3	4	10	21	6	49	82	11	3	0

This table shows the relative number of new arrivals at the home station with one exception. In August and September, 1934, the frequent rains and lush vegetation made trapping difficult and the low figure of banded birds that year does not give a true picture of their relative abundance that autumn.

In studying this table, it must be kept in mind that there were at least two, but usually more, residents at or adjacent to the banding station each year until midsummer of 1935. In an indirect way, this table therefore illustrates the relative degree of pugnacity displayed by these residents in defending territory. The low number of transients banded after early October is significant because there are still large numbers moving about elsewhere in fall. Resident birds then reassert their claims to territory and are very active in driving away all visitors. This pugnacity is strong throughout the winter and early spring when they are particularly vigilant in guarding definite areas where they feed, roost, and begin their spring singing and courtship.

During the months of December through February of the four-year period tabulated, it will be noted that no birds were banded, because there were three or four resident individuals each winter, holding territory at the station or extending into the station, the boundaries of which they defended with much zeal. The seven birds banded in March and April all proved to be females which came when there were unmated males advertising themselves by loud and

persistent singing. In May, June, and July of this same period, there were twenty-three nestlings and young birds banded and only fourteen adults. Some of those adults are known to have been birds breeding in the neighborhood, and who came for food for themselves and their young.

August, September, and the first few days of October are remarkable for the numbers of visiting groups of birds in which immature plumage and gray eyes predominate, although it has been difficult to determine the ages of some individuals. During the fall period of 1932-1935, the number banded was 142, a sharp increase. During this period adult Mockingbirds are molting and residents are inconspicuous. However by the end of September, the molt is almost complete and visitors are no longer allowed the freedom of the banding station. They are scolded, pursued, and sometimes fought by those that had previously held territory there and by prospective territory holders. Therefore in October, it is seldom that a new Mockingbird is allowed to get into a trap. But transients are still numerous for a month longer in the Nashville area as proven by observations and banding at the substations.

After June in 1935, no nest was built in or immediately adjacent to the garden although Mockingbirds continue nesting activities into August here and young had been banded from about twenty nests in this section during July and August that year. On July 26, the *L's* brought two full-grown chicks to the station for a day or two and on August 14, *L* again visited the garden with some "whining" young. At that time the pokeberries, elderberries, redtwigged dogwood berries, peaches, and plums were ripening and also attracted *Bf* with her chicks. An unmated male, *AA*, that had been singing until late summer and very often at night, came at least once from his territory 300 yards southeast.

On September 7, 1935, a group of four or five started the fall influx of transients which begin to arrive each year about that time or a little earlier. These groups, composed mostly of young birds, flew about, pursuing each other and giving staccato calls that sound somewhat like *chi-chi-chick* and can be imitated by smacking the tongue against the roof of the mouth. In addition, sharp *chucks*, a warning *whe-u*, and an occasional harsh *chy-uk* were prevailing sounds from all sides. Occasionally a bird with flight feathers still partially sheathed would be seen perching, squatting on a limb, or feeding, which usually proved to be an old bird. It is very unusual to hear a song in August or early September although there are home station

records in 1933 for August 21, 25, and the days following. At dusk in the latter part of this period the loud *chucks* became common again as the birds settled for the night separately in dense roosting places of shrub or vine. These relayed answering *chucks* from near and far in every direction are typical of fall and winter as the chill of evening darkness envelopes the out of doors.

On September 11, 1935, it was with much surprise *R2* was found entrapped on the front lawn. His wing and tail feathers were still partially sheathed. On the 18th, a moderate toned song came from the shrubbery where he perched low. His tail was still short. That was the first of the daily concerts by him and others through the lovely warm days of September. The pokeberry patch in the middle west border of the lot was the center of activity those days; almost daily more unbanded birds appeared. On the 18th, a new singer, with some of the exuberance of the mating season, sang loud and fast as he performed some of the actions that had previously been observed only in spring when a female stopped near territory of an unmated male. This new arrival sometimes flew while singing and several times ran with spreading wings into tree forks or flew into shrubs in song. Once he tried to pull off a twig, but when it did not break, he made no further effort to break off others. His song included imitations of a Martin, a Catbird, and a Towhee. He chased other Mockingbirds from the station. He was trapped and his plumage indicated he was a young bird. Although he stayed several days, his performance lacked the zeal of that first day and his songs became shorter and moderate toned like those of *R2*. Continuing through September, the garden was lively with Mockingbirds feeding on pokeberries and privet berries, flying in little pursuits, giving the smacking sounds and *chucks*, and singing lovely songs interspersed with imitations of other birds. *L* was often seen then as he sat on a low limb of the big maple above the pokeberries, quiet and undemonstrative. Often he flew down into the meadow beyond for insects.

The chill evening of September 28 brought the first real waves or relays of "good night" *chucks* at dusk, giving the listener an idea of the number roosting nearby, although the attempt to locate *L's* roost was unsuccessful. Apparently he never participated. On the 30th, he dropped his indifferent attitude and began to chase several species of birds from the pokeberries although the crop was abundant and he ate them only sparingly. He used the characteristic *chuck* and the staccato *chi-chi-chick* calls when chasing the birds. His plumage appeared complete except for the outer pair of rectrices which were still

short. He stayed in the rear half of the lot and mostly on the west side. *R2* spent his time on the front section where privet berries and orange fruit of the pyracanthus bush furnished food. Both spent much time catching moths and other insect food on the lawns. Although *R2* had comparatively few visitors in his section, he was seen chasing birds September 30.

October 1 was an interesting day for *L* sang his first song of the autumn. He started with a few harsh notes which brought to mind similar short metallic sounding songs heard other years in October from resident birds. It was with much surprise *Bj*, in 1934, had been heard repeatedly using it on her own territory, furnishing the first record here of a female Mockingbird song. *L*'s song did not stop with the few harsh notes but he sang at length in pleasing melody, alternating moderate tones with very soft notes. He also became more aggressive then toward all birds coming to the pokeberries or to the water near them. All flew away at his approach except a Flicker later in the day that stopped on a branch near him. *L* made a movement toward the larger bird but stopped suddenly, faced him, and puffed out his feathers. When the Flicker ignored him, there were no further signs of hostility, both remained quietly perching and were soon joined by a Cardinal that was allowed to remain only a few feet away in the same tree. On this day (October 1, 1935) *Bj* was located on the rear of the lot but in the east border directly opposite *L*'s favorite perch above the pokeberries. She was in a bittersweet vine which proved to be a favorite spot to her while the berries lasted. She was in full new plumage but was rather difficult to locate being rather quiet and frequenting a densely leaved thicket. But on October 4, as she concealed herself in the bittersweet foliage, she provided a delightful surprise—a lovely whisper song—the first Tennessee record of a female singing other than the rather harsh fall song of three or four notes. It was a lengthy song and the performance was repeated many times during the first half of October, affording numerous opportunities to listen, although it took much time and patience to identify her bands. On October 6 for the first time in the 1935 fall season, she was heard giving the very short metallic song just mentioned. This will be called the territory song because it was associated with the early manifestations of territory defense. It seemed like a proclamation of vested interests and it was noted in the days that followed that each occupant of neighboring territory used it and it was relayed at times by several individuals. Excepting the territory song, the singing of this old female bird was not like that of *L* or *R2*. It was always

the muted type, a whispering of call notes of her own species, interspersed with notes of other birds and all uttered in the suppressed manner of the Catbird's song. One note says: "The song of *Bj* began with a series of soft *whe-us*, then many variations of whistles, a few notes like the Towhee, and some like a Canary or a Goldfinch." Many of her songs could be recognized as alarm notes but in this rendition, the effect was always as pleasing as the softest strains of a violin.

During the early part of October, *L* also sang some whisper songs but *R2* was never heard to sing that type. They both gave imitations of other birds.

Once more, as in previous years, the advent of October disclosed the banding station divided into territories. The three occupants that announced and defended their respective areas were all former residents of the garden! It was no longer possible to trap Mockingbirds at the home station. The only one that did succeed in making a landing came in on October 18 while several hundred Bronzed Grackles monopolized the front lawn and distracted the attention of *L* and *R2* for a brief time. When the grackles rose in flight, *R2* was discovered on top of a small trap, worrying the imprisoned intruder. After the first few days of October there were no more visiting Mockingbirds or other species feeding among the pokeberries for they were driven off before even a hurried meal could be snatched. Many were flying about elsewhere and numbers were being trapped at the Green Hills substation less than a mile southwest. Among those trapped there were two Mockingbirds banded earlier that fall at the home station, two returns from previous years, one immature bird that had been banded at its nest July, 1935, about three and one-half miles north. Forty-two Mockingbirds were banded there between the 2nd and the 17th of October. Why were the fruit-laden bushes at the home station no longer being visited when the few bunches of berries placed in and around the two or three small traps at the substation were attracting numbers of Mockingbirds as well as others? Subsequent observations indicated a systematic campaign in which each of the eight or ten resident Mockingbirds in the neighborhood had a definite part and which diverted arrivals before they could alight on the feeding grounds of territory holders. At that time, in addition to the songs, which in the case of *L* and *R2* had become more zealous and louder by the middle of October, sharp *chuck* calls, numerous variations of harsh squawks sounding like *chy-uk* and a guttural *che-ar* were given. The smacking *chi-chi-chick* calls were most frequently heard and they usually seemed to be a call to alertness. When a bird in the garden

used it, the others became attentive, turned in the direction of the call, answered, and were ready to fly at an intruder if one appeared coming to their boundaries. Sometimes it was not possible to determine what caused the first call but it was very obvious that the answers were given in response. These answers were often in kind but they also included the numerous variations of *chuck* calls, and the others described. Often the alarm was given when a Mockingbird was seen flying over, the other residents each answered while flying to the boundary line nearest the intruder, either waiting there to head off the visitor or going to the assistance of the resident of adjoining territory to chase this unwelcome bird who always changed his course suddenly. As he disappeared in the distance, other alarms were heard from that direction where doubtless he was treated similarly in territories already occupied.

After October 15, *Bf* had discontinued her interesting whisper songs and she had retreated from the bittersweet vines (then denuded of fruit) to a small thicket containing some fruiting hackberry trees on vacant property about forty yards southeast. From there she participated in the community defense like *L*, *R2*, and the neighborhood Mockingbirds. However, she was not so aggressive as the two males and did not fly beyond her territory boundaries in pursuit of strangers as *L* did. He made the longest flights of the three in driving them away. Her territory was about three-fourths of an acre but the two males had one and one-half acres each, the latter area being much larger than those of residents at the station in previous years during fall and winter. *L* remained in the rear, *R2* at the front, each using adjoining vacant property also.

The next two weeks were spent in the established daily routine; the morning hours were the busiest in defense. The males sang at length on warm days in a calm manner, with decreasing zeal on the chilly days, and had ceased entirely by November 11 although a few songs were heard elsewhere later. Once a territory song of the female was heard that sounded like "*towhee, towhee*". All were alert to keep off intruders but in previous years, this period of late fall had been marked by some fights and dances between the territory holders and also between the residents and new arrivals seeking to establish territory. *Bf* had been seen in several dances and one fight on her boundary line in 1934. In the 1935 season, only one similar encounter was seen. On December 11 *R2* met his neighbor (to the north) on a hedge, then on the lawn, where they fought and danced. This dance occurs frequently among Mockingbirds as a territory

boundary maneuver. The participants face each other, with heads erect; they step forward, backward, sideways, in a dignified manner for a moment or several minutes. Sometimes the sidestepping may continue for twenty-five yards with each bird remaining on his own side of the boundary line. It terminates usually by each turning suddenly to his own side to fly away or to feed on the ground. It may end in a fight or follow one. Once in late November, 1935, *L* and *R2* were noted in the first stages of an encounter when they met in a tree on their boundary line but they separated without fighting and without meeting on the ground for the characteristic dance. On December 2, 1935, one of the neighborhood birds fought his reflection in the windows of a parked automobile. This had been a habit of *Y* in previous winters, starting in November and continuing spasmodically through February. He dashed at his own reflection in windows of both house and garage.

In previous years several instances also are on record when the short territory songs were heard from *B*'s section occasionally between the hours of midnight and 3 A. M. on bright nights between October 2 and December 1. There are also records of the staccato *chi-chi-chick* being heard then, but in 1935, except for one territory song during the night of October 12, these calls were the only night time sounds heard and they probably indicated a predatory creature had disturbed them for Cardinals joined in the alarm with a series of *chips*.

By December, Mockingbirds were conspicuous only at dusk when the various sharp calls were heard as they went to roost. Unusually cold weather had descended upon us and during the day only occasional *chy-uk* or other calls were heard and they sat hunched in sheltered places or greeted the first falling snowflakes with harsh *chucks* seemingly to show their disapproval. They continued to scold the Robins and Starlings, flew at the Cardinals, consumed halved apples, suet, hackberries, and on the milder days, probably found a little insect food as they searched on the ground. However, this proved to be the most disastrous winter to resident birds in the five winters of banding. The extreme cold and frequent snows not only denuded shrubbery that usually retained foliage to provide roosting places but it also deprived Screech Owls and Sparrow Hawks of food so that they were unusually predacious at the banding stations. At intervals during the winter months the three resident Mockingbirds and the pair of resident Cardinals disappeared when nights were bright and both cats and Screech Owls had been seen.

Bf was the first bird to be missed early in December. A thorough search for her remains yielded only the feathers of a freshly killed quail on her territory. The following day her section was occupied and defended by another Mockingbird wearing only an aluminum band.

On January 2, 1936, the snow melted and mild temperatures prevailed for the first half of the month. A Mockingbird elsewhere was reported singing during that period but none of those about the station sang. In 1935 *B* sang during two weeks of mild weather in January. That year for a few days, temperatures typical of our normal April weather prevailed when he not only came into song but also began to court *Bf* and they used their combined territories together. She showed interest in him also. A sudden drop in temperature sent each back to its own territory until the normal mating season here in early March. However, during the mild weather of 1936, the males, *L* and *R2*, again met on their boundary lines in a tree but after hopping after one another a brief time, they parted, each flying to his own side. They almost ignored the apples and suet as insect food was again available on the lawns; *R2* enjoyed the holly berries on the discarded Christmas wreath which he had previously attempted to get as it hung outside of a window. One morning as traps were being set below his perch on a wire, he gave a squawk, *L* answered immediately; then others near homes in the neighborhood responded with squawks or *chucks*. But on the night of January 12, a cat was seen prowling in that shrub border. On the 13th, it was a surprise to see *L* in a prolonged fight there with a Mockingbird. *R2* was gone. A new bird was seen feeding on the privet berries daily. *L* would appear on the west part of the former territory of *R2* and watch this other bird while he fed on the east section. It took some time to identify the new arrival which was also wearing bands. By the 18th, the severe weather and snow had come for another long siege. On the 20th, the new arrival would not permit Robins to roost in that east shrubby clump although he came there apparently only to feed. He was fond of raisins and made quick flights for the few outside of the traps in the front section. On the first of February he was seen flying to the traps at the rear for at that time *L* also disappeared and there was no territory defender to keep him away from any of the raisins. He announced his coming by alighting near a group of traps or a feeding place, giving a number of *chucks* before flying down to eat. He was finally trapped on February 8 and proved to be *ABA*, the 1935 mate of *Bf* whom she had joined at a neighbor's after the death of *B* in

March, 1935. He now had a feeding range of at least 300 yards in length for he visited traps all over the station but seemed to use it mostly to feed on the coveted raisins, returning to the neighbor's garden. He would come to the window sill if raisins were there and continued to announce his coming with *chucks* even though no other bird of any species was feeding.

On February 28 he began to sing a soft toned song near the front east clump of shrubs and it was thought he had decided to claim that territory at the station. On February 29, another arrival was trapped at the rear which also proved to be a former acquaintance, *GAG*, banded in September, 1935, and which had repeated until October. The plumage was sooty as a wintering bird and the measurements and markings seemed to indicate it was either a young bird or a female. It remained unobtrusively in the rear until March 23. *ABA* was found in the rear trap on March 6. On March 8 another banded bird arrived but this one was conspicuous as he sang from various perches in the front section of the lot. He was *AYG* that had been banded at the neighbor's when nesting there in July, 1935. His territory there had been just beyond that of *ABA* and *Bj* during that summer. He was singing gayly in the mate calling manner; his songs were richly interspersed with brilliant imitations of quail calls, Summer Tanager, Cardinal, and other songs. Females came to visit. *ABA* apparently did not resent his coming and retired to his former territory at my neighbor's where he too sang zealously.

March 19 was an exciting day, for several unidentified Mockingbirds appeared on the front lawn. There were courtship flights, much song, and a female that remained with *AYG* and was banded. This pair spent most of their time on the front section, but even then *ABA* came at least once for raisins entrapping himself on their territory. On the morning of March 28, *AYG* was seen limping as if his right leg or foot was injured. His songs ceased. Attempts to trap him were not successful. Late afternoon of the second day an unbanded male arrived, which he was seen fighting on top of the drop trap, while his mate stood nearby. He could not be found after that and his mate also disappeared the next day. It was thought at the time that he may have died as he was not seen anywhere in the neighborhood. However, in June of 1936, he re-appeared at the station for one day and in full song, and came to the front for apple. His injured leg seemed almost normal but again efforts to trap him met with no success. After the March disappearance of *AYG*, the new bird took possession. fed on the apple and was soon banded *BAB*. The same day that *AYG*

was noted limping (March 28, 1936) another Mockingbird had appeared in full song on the rear territory which *GAC* had apparently deserted. This new bird was soon identified as *AA*, another acquaintance of 1935. His outstanding imitation was the call of a Sparrow Hawk. He is the one previously mentioned as the bachelor bird that sang until mid-July and often far into the night on his territory some 300 yards east of the banding station. This spring he quickly secured a mate; an unbanded hen joined him on March 30 and they occupied the rear half of the lot where *L* was the early occupant in the winter of 1935. *BAB* sang on the front section that *R2* and the others had used in turn this winter but left in early May of 1936 without winning a mate. *AA* and *BAB* met on their boundary line on April 7 (the same place *R2* and *L* had met). They fought and performed a few dances while the mate of *AA* remained on their side as a spectator or looked for food in the grass about a yard away. These dances were common occurrences during previous winters and early spring between the resident birds on their boundary lines but in the winter just passed, it was seen only the two times mentioned in this paper at the banding station and only a few times elsewhere. It has been noted that many of the performances in the past occurred on the milder days, so perhaps the very cold weather as well as the frequent changes of occupant on a territory may account for the difference.

The events of the past winter again show the importance of distinctive banding for sight identification in order to acquire an accurate understanding of daily occurrences in bird life. Otherwise it would have been impossible to know how many different birds in turn occupied the garden this winter, how different the situation was from previous winters, or how quickly neighborhood birds fill vacancies in favorable locations. During the winter of 1931-32, *B* and *Y* were the occupants and they remained for nesting. In 1932-33 *B*, *Y* and *R* spent the winter but *R* left in March and did not sing. In 1933-34 *B*, *Bf*, *Y*, and *L* wintered but *L*, unable to win a mate that spring after singing several weeks, left in April. He was found mated that summer a few hundred yards south. In 1934-35 *B*, *Bf*, *R2*, and *X* wintered, the latter leaving in March without ever singing. But in 1935-36 the winter territory holders, *Bf*, *L*, and *R2* had all apparently met death by the first of February and their territories were occupied in turn by five individuals, not counting the two females that joined the male occupants. All but one of the eight 1935-36 territory holders had been located in the neighborhood previously. Only one of the eight remained for nesting in the 1936 season and *ABA* was still singing for

a mate in mid-June spending most of his time at the neighbor's, but sometimes coming to the front section of the banding station to sing and feed on apple (no raisins were placed at the traps in summer).

Observations made at other places in Nashville yielded some unusually interesting data that revealed situations existing within a few miles of the home station that had not been observed in the several years study of the birds there.

At the Belle Meade substation, four miles southwest, the mated pair did not separate in the fall as other pairs studied had done. This pair remained together in a companionable manner, following one another to perch in the same tree, stopping to drink at the same pool, and apparently on the same friendly terms with each other as Chickadees, Tufted Titmice, and Cardinals are with their winter companions. A tragedy in late December unfortunately brought this interesting observation to an end when the male bird fell victim to a Screech Owl one bright night when the ground was deeply covered with snow. His cry of distress brought the Tompkins family outdoors in time to see him carried off from his roost in an evergreen at their living room window.

At the home of Mrs. K. Jordan, close to the business section of Nashville, another pair was watched in the season just passed that had remained together all winter. They came to the feeding place together during the cold weather. One waited while the other fed and on the very cold nights, both roosted in a garage, the door of which was purposely left open until they had gone inside. Their roosting places in the building were separate, and the garage was not used on mild nights. This pair began their nest in a large rose vine when the weather was still cold in March and the set of four eggs was being laid and brooded in the well made deep nest the first week of April when a belated snowstorm and freezing temperatures damaged vegetation. When the four nestlings were only a few days old, the mother bird was eaten by a cat. Although the male fed them, he did not brood them and they died the second night after the death of the mother bird. This male bird immediately began to sing again and in a few days had secured another mate which seems rather interesting when birds in the suburbs seemed to have much difficulty in getting mates.

Another interesting but mysterious observation was recorded in late February last year (1935) near another substation. On the 24th, a mild sunny day when the mean temperature for the month had been above normal, a hillside thickly grown with bushes and small trees

was found to be teeming with Mockingbirds in late afternoon. Between 4 and 5 P. M., thirty-nine were counted in this area of 440 by 200 yards. They flew about, perched, sang, and pursued each other in what appeared to be a playful mood. A few of the hissing *cha* notes were heard in some of the pursuits which seemed to indicate some females were present. Sometime as many as six perched at one time in the same tree—a most unusual sight in many years of Mockingbird observation here. They were not feeding. There was no fighting, no serious courtship pursuits, nor plumage display. They were all dark colored, sooty birds, typical of wintering birds in Nashville, which seems to eliminate the migration theory. No banded birds were sighted in spite of the fact that it was near a substation. A visit at dawn eliminated the roosting theory also as only five could be located in the leafless shrubbery when Jack Calhoun searched. At 1 P. M. four or five were found but at 4 P. M. there appeared to be as many as on the previous afternoon, and they behaved as on that day. The following day a heavy rain fell, freezing, and turning into a snowstorm. With driving too dangerous to attempt the six-mile round trip over the hills, it was not until the fourth day later (March 1, 1935) that the thicket could again be visited. There was one bird at each end of it, where on March 30, Jack Calhoun found nests, both of which contained their complete sets of three eggs. What could be the meaning of those mysterious gatherings on at least two successive days in late afternoon?

Study of individual birds by the color banding method becomes more interesting each season and the student is convinced that nothing should be taken for granted in bird study; that in bird life individuals do not conform to a set behavior pattern; and that the subject is inexhaustible.

NASHVILLE, TENNESSEE.