

AN ORCHARD ORIOLE COLONY IN ARKANSAS

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SINCE 1936, the Orchard Orioles (*Icterus spurius*) from an area of at least 10 acres have come to the garden of my home near North Little Rock, Arkansas, to drink from small jars of sugar- or honey-sweetened water. The habit started when a mature male oriole followed a Ruby-throated Hummingbird (*Archilochus colubris*) to a wide-mouthed vial around which a piece of wire had been twisted to form a perch. The next day, a female oriole drank at the vial, and I then provided a cold-cream jar as a larger cup, giving it a ruffle of red ribbon, fastening it to a wooden arm, and nailing this to a cornerpost of the garden's low picket fence. Soon two other pairs of Orchard Orioles were coming to the new cup. In subsequent years, it has often happened that the first oriole to return (nearly always a mature male, arriving between April 10 and 16) has gone at once to the cup. Later arrivals, some new to the neighborhood, have followed him. In June and early July, fledglings have accompanied parents, and still later groups of independent juveniles have come to drink. At the height of the season, I have kept two cups in the north garden, which was the original feeding area, and another in the side yard, and re-filled them several times a day. The orioles, with the other species that drank, notably Eastern Mockingbirds (*Mimus polyglottos polyglottos*), Brown Thrashers (*Toxostoma rufum*), Summer Tanagers (*Piranga rubra*), Catbirds (*Dumetella carolinensis*), Red-bellied Woodpeckers (*Centurus carolinus*) and Tufted Titmice (*Parus bicolor*), have consumed about a quart a day.

In the early years, there were round rails above the garden's picket fence, and the orioles would alight on the rails, spring over to the "arm," and sidle out to the cup. Early in 1943, I removed the rotting

TABLE I

MALES PRESENT EACH SUMMER (1937-45)

Year	New Arrivals		Returns, banded as		Total Mature	Total 1 yr.	Total Males
	Mature	1 yr. old	Mature	As Juvenile			
1937	3	3			3	3	6
1938	4	1	1	1 (1 yr.)	5	2	7
1939	7	2	2		9	2	11
1940	2	0	3		5	0	5
1941	5	1	5		10	1	11
1942	3	3	3	2 (1-1 yr.) (1-2 yr.)	7	4	11
1943	0	3	0	3 (2-1 yr.) (1-2 yr.)	1	5	6
1944	2	1	1	1 (2 yr.)	4	1	5
1945	4	0	1	1 (3 yrs.)	6	0	6
	30	14	16	8	50	18	68

*My thanks are due Mrs. Margaret Morse Nice for advice in the preparation of this paper.

fence, leaving only the corner post with the "arm." On the orioles' return, they would not fly straight to the cup, but hovered, looking for the rails on which they had been accustomed to perch, and then flew off. When I nailed short rails to the post, the birds came in their old way.

For nine summers (1937-45), I have used one of the cups as bait to trap and band the orioles. The first summer, time was lost in discovering that they would enter only a top-opening trap, and that season's catch probably does not represent even the total of males present. Although later seasons proved the orioles among the most difficult species to trap, the figures are more nearly representative of the birds in the area. Some individuals may be caught in the pre-nesting period, while others are wary, and though drinking at the cup in the first weeks of their arrival, may nest at a considerable distance, and at the onset of extremely hot weather, stop coming to the garden. After the start of incubation, both males and females are cautious. Males feeding fledgings may be tempted by the bait, but many females remain afraid of the trap the whole summer, and this fact accounts, in large part, for the disparity in the numbers of the sexes caught. A striking fact is that rarely have I caught more than two orioles on any one morning. It appears that others, seeing the fluttering captives, take warning for that day at least.

The garden is on the ridge of a low, thinly wooded hill, most of the trees being oaks, stunted because of the poor, rocky soil. North of our boundary there was, up to the end of 1942, better land, watered by a creek and several smaller streams, with maples and sweet and sour gum trees growing to great heights. This was not only a favorite nesting area of the orioles, but a feeding place for many independent juveniles because of the blackberries that flourished in the open spots. In the autumn of 1942, all this area was cleared and filled in with earth to make a government coal yard, and the change in environment affected both the composition of my oriole colony and the time the birds stayed in the neighborhood.

TABLE II
FEMALES AND JUVENILES, 1937-45

Year	Females		Total	Juveniles Banded
	New	Returns		
1937	5		5	5
1938	2	1	3	38
1939	4	3	7	9
1940	2	1	3	7
1941	3	1	4	20
1942	4	3	7	46
1943	5	1	6	1
1944	2	1	3	1
1945	3	0	3	1
	—	—	—	—
	30	11	41	128

Table I presents the males, and Table II the females and juveniles known to be present each summer. For the nine-year period, the actual number of breeding males (30 matures, 14 yearlings and six banded as juveniles) was 50, and the number of females (30 banded as adults, two as juveniles) was 32. Taking the grand totals, which include all returns and thus repeat the individuals that were present for more than one season, there were 68 males and 41 females, a preponderance of 27 males. While some of these males may not have had mates, it seems probable that in most cases the females were trap-wary, or brooding young at distant nests, and simply evaded capture. If we assume that each male represents a pair, there were never fewer than five pairs, and for three years there were eleven pairs that came to the garden cup to drink.

Each year except two (1937 and 1943) the mature males in black and chestnut plumage outnumbered the yearling males that resemble females except for a black throat patch. As already mentioned, the record for 1937, three mature males and three yearlings, may not have been the true total. However, I believe that in 1943, which was the summer following the destruction of the north woods, I caught all males that nested near by, and the total was then five yearlings to one mature, the latter a return banded as a juvenile. Early in the season, mature males were seen hovering above the place where the fence rails had been (described above) but they did not remain in the neighborhood.

Table III gives the returns for the nine-year period, and Table IV summarizes the totals and percentages. The percentages are based on the numbers banded up to 1945, since this is written before the season of 1946 when the last-banded birds will have their first chance to return. Of the 26 males banded as matures before 1945, nine, or 34.6 per cent, returned. (One was present for six consecutive seasons, one for four seasons in six years, one for three consecutive seasons, two for two seasons in three years, and the other four for two straight seasons.) Since all nine of these orioles were banded in the years 1937 to and including 1941, it would be fair to base the percentage on the total of 21 banded in this period, which would be 42.8. It should be kept in mind that the clearing of the woods at the end of 1942 undoubtedly accounted for the failure of some birds to return thereafter.

Of the 14 males banded as yearlings in the eight years up to 1945, none returned (or was trapped) in a later year. Of the six males banded as juveniles and returning to nest, there were three that returned in the yearling year but not in later years, two that did not return until they were in mature plumage, and only one that nested here in his yearling year and also the next two years, when he was two and three years old.

All this suggests that with few exceptions males do not return to the first-year breeding area, but in their second season seek a new area

TABLE III

Band Number	Date Banded	Males in mature plumage	RETURNS				Age yrs.
			Dates of Recapture				
37-139995	7-11-37	4-25-38	6. 3-39	5. 5-40	5-27-41	5-22-42	7
37-162257	4-18-38	7-27-39					3
138-109077	4-18-39	7-19-41			(Absent or not captured in 1940)		4
138-109091	5- 2-39	6-12-41			(Absent or not captured in 1940)		4
138-109096	5-12-39	5-13-40	6. 3-41				4
39-167703	6- 2-39	5-13-40					3
40-143569	7-10-40	6-28-42	5. 6-44	5-11-45			7
			(Absent or not captured in 1941 and 1943)				3
40-143570	7-13-40	7-19-41					3
40-180341	5-26-41	5- 5-42					3
							1
							3
							1
							2
							1
			4-23-44	5- 8-45		..	3
							7
							2
							2
							2
							2
							1
							1

*Identified by sight, as last survivor of 1937, banded on left tarsus.

to which they may return year after year. Possibly mature males take the more desirable areas, crowding out the yearlings, but when the yearlings are mature, they move to the preferred areas, taking the places of matures that have lost their lives in the interval. Note again (Table I) that each year up to 1943, from two to seven new males had come, but in 1943, when it may be assumed that the destruction of the north woods made the area less attractive to the species, no new mature males came, and there was only one mature male, banded as a juvenile, while five yearlings nested in the area. Our hilltop, that is, the land immediately surrounding the garden, had not been changed, but apparently the clearing of the woods made the section as a whole a second-choice place, and the mature males that returned did not stay to nest. However, in 1944 and 1945, new mature males arrived and outnumbered the yearlings. It is probable that these mature males had not known the area before the clearing of the woods.

AGE OF RETURNS

Looking at Table III, we see that two males were at least seven years old at the time of their last capture. Three were four years old, and four were three. Two males banded as juveniles were three years

at the last capture, one was two, and three were one year. Seventeen of the 26 males banded as matures were not trapped in subsequent years, but of course it cannot be concluded that every failure to retrap meant the death of the individual.

Of the four females banded as adults that returned, one was at least seven years old in 1943, when she was identified by sight only, and the other three, returning only one season, were then at least two years old. Twenty-three of the 27 females banded up to 1945 were not recaptured.

NUMBER OF YOUNG BANDED

Table II shows a great variation in the number of juveniles banded each summer. The highest record was 46 in 1942, while in three years only one was caught. The low figures do not necessarily reflect a poor success of the breeding season, as in a year of high success fledglings may leave soon after attaining independence, without having been trapped. When extreme heat and drought occur at about the time several families of young become self-supporting, they vanish from the neighborhood, or at any rate do not come to the garden cup. Time of fledging also influences the length the young stay, and thus my chances to trap them. Those out of the nest in mid-June may stay until mid- or late July, while those out in July (the parents' first nesting attempts having failed) may leave as soon as they are strong fliers. Probably the chief cause of early disappearance of juveniles in the last three seasons was the destruction of the woods. Before that time, I often saw groups of orioles, either a male with four or five young, or a group of young only, fly over from the woods, drink at the cup and then return to the woods. That many juveniles had fed on the blackberries there was shown by the stains of juice on their beaks.

TABLE IV

	PERCENTAGE OF RETURNS					
	Total Banded up to 1945	Yearly Returns Number	Per cent	Individual Returns Number	Per cent	
Mature Males	26	16 or 20*	61.5 76.9	9	34.6	
	*Includes the four years orioles were known to be alive but not taken					
Yearling Males	14	None returned				
Adult Females	27	9	33.3	4	14.8	
Juveniles, both sexes	127	10	7.8	8	6.2	

NEST LOCATION AND TERRITORY

In the early years, several pairs had nests close to garden and house. In 1933, which was before the orioles had begun to drink at the sweetened cup, I found seven nests in an area of about two and a half acres. In recent years, the hilltop is less favored for nesting sites, usually only one pair building close to the house. Possibly the development of

the garden as the communal feeding area resulted in the moving farther away to nest.

I have observed no defense of territorial boundaries, comparable, for instance, to that of Eastern Mockingbirds or Eastern Bluebirds (*Sialia sialis sialis*.) Frequently a male nesting near the garden has driven another male from the cup, but this is not unmistakable defense of territory. Probably there is mutual respect of the nesting tree by neighbor-males, as I do not recall ever having seen one male in another's tree except when he has gone to assist the nest-owner in an attack upon a Blue Jay (*Cyanocitta cristata*). Usually, the male oriole tolerates other species to alight in the tree; in 1945, a pair of orioles built in the top of an oak in which Eastern Robins (*Turdus migratorius*) had a nest, with young, in a low crotch. On the other hand, some yearling male orioles drive away any small bird that ventures into the oriole's nest tree. I have never found nests of two pairs of orioles closer than 30 yards. Forbush (1929:441) quotes Audubon, "The sociality of the Orchard Oriole is quite remarkable, and in this respect that bird differs widely from the Baltimore, which will not suffer any other of its species to build a nest, or to remain within a considerable distance from the spot which it has selected for its own, whereas many nests of [the Orchard Orioles] may be observed in the same garden or orchard, and often within a few yards of the house. I have counted as many as nine of these nests on a few acres of ground, and the different pairs to which they belonged lived in great harmony."

Apparently Orchard Orioles tend to be colonial in their nesting habits where great numbers are congregated. Kopman (1915:22) wrote of the species in Louisiana: "Its abundance as a breeder in the southeastern portion of the State . . . can scarcely be comprehended by those whose acquaintance with it is confined to its appearance in more northern localities. In one live oak in a plantation yard where there were many more trees of this kind I once counted nearly twenty nests of this species."

SUMMARY

1. Orchard Orioles nesting in an area of about 10 acres have come to the garden of my home in central Arkansas to drink from cups of sweetened water. For nine summers, 1937-45, as many of the orioles as could be trapped were banded.

2. The number of pairs present each summer ranged from 5 to 11. Each year except two, mature males outnumbered yearling males.

3. Nine out of 26 mature males banded up to 1945, or 34.6 per cent, returned in later seasons. Four out of 27 females, or 14.8 per cent, and eight out of 127 juveniles, 6.2 per cent, returned. One male banded as a juvenile in 1942, returned in 1943, 44 and 45. *None of the 14 males banded as yearlings were ever recaptured.* It is suggested by these records that the male in his second breeding year seeks a new area, and

it is to this area, rather than the place of his first nesting, that the individual returns.

4. From the study of the whole period, it is believed that mature males take the more desirable areas, crowding out the yearlings. From the fact that most years' matures outnumbered yearlings in the study area, it is assumed that this was a preferred area. In the year following destruction of nearby woods, no former resident mature males returned and no new mature males arrived, but there were five yearling males and one mature male banded as a juvenile.

5. The ages of the mature males that returned ranged from three to seven years. One female was known to be seven years old, and three were at least two years old.

6. The number of young banded each summer varied greatly, ranging from one to 46. A small number of captures did not mean an unsuccessful breeding season, because special circumstances might cause the young to leave the area before they could be banded.

7. In this section, no two pairs of orioles were known to nest in trees closer than 30 yards. Although no defined territorial boundaries are apparent, the males do not as a rule trespass in or near each other's nest trees. Kopman's observation of the species in Louisiana indicates that there they are colonial, many pairs (nearly 20) nesting in one live oak.

REFERENCES

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