

A JOINT NESTING OF CARDINALS AND SONG SPARROWS

BY HERVEY BRACKBILL

IN Catonsville, Baltimore County, Maryland, in May, 1950, a single nest was used simultaneously by a pair of Cardinals, *Richmondia cardinalis*, and a pair of Song Sparrows, *Melospiza melodia*. Informed of the nesting during its final week, I then succeeded in making observations on three days—for periods of 1 hour on May 24, 1.5 hours on May 26, and periods of 2, 2, and 1.75 hours on May 27—and after the young left the nest I spent 3.5 hours on three days checking upon developments.

The nesting occurred at the home of Mr. and Mrs. Charles P. Wall. I owe thanks to their son-in-law, Harold W. Smith, for word of it, and to them for most obligingly making possible my study of it. Thanks are also tendered to Charles W. Purcell, Jr., for his interest and patience in getting the photographs that accompany this account, and to Mrs. Margaret M. Nice for reading the manuscript and making suggestions.

THE NEST, EGGS, INCUBATION, AND CARE OF YOUNG

The nest was based four feet eight inches up in the heart of a seven-foot arbor vitae, *Thuja occidentalis*, beside the Wall home; because the foliage was thin on the house side of the tree, the nest was easily visible from a window six feet away. The happenings at it were noted casually by the Walls from the start of the nesting, at the beginning of May. On May 24, when I was told of it, it held three Cardinals about four days old, and one Song Sparrow egg that eventually proved to be addled.

Mrs. Wall relates that a Cardinal "began" the nest and then "abandoned it for a day or so." During that interval, a Song Sparrow appeared and "completed" it, narrowing its interior so much that when the Cardinal finally returned to lay her eggs she had to squirm about and stretch it before it would accommodate her. Obviously, the period of "abandonment" was the customary pause between building and laying; in the Cardinal this may be as long as six days (Laskey, 1944:32). For the rest, the nest itself supported Mrs. Wall's statements; the foundation and outer shell were shaggily made of weed stems, coarse grass, pieces of vine, and some leaves, in Cardinal fashion; the interior was substantially lined with fine grass and some human hair, in Song Sparrow fashion; grape bark in the nest-wall probably marked the point at which the Cardinal had put her lining.

Mrs. Wall believes that the Cardinal and Song Sparrow each laid three eggs, but is not sure; Mr. Wall cannot definitely recall seeing more than the four that are accounted for by the three Cardinal nestlings and one Song Sparrow egg. The order of laying is not known. Incubation was performed by both Cardinal and Song Sparrow, Mrs. Wall states; if the Song Sparrow arrived at the nest and found the Cardinal already on, she loitered in the vicinity until the Cardinal left, then began her sitting; if the Cardinal arrived at the nest and found the Song Sparrow sitting, she sat on top of the Song Sparrow.

Mrs. Wall states that both species also brooded the nestlings, the Cardinal again sometimes sitting on the Song Sparrow's back. She reported such joint brooding as late as May 28, during rain, and brooding by each species singly on May 29, during rain; the young were then about nine days old. I saw only the female Song Sparrow brood, for one period of ten minutes during an hour's watching on the evening of May 24, and for two periods totalling ten minutes during 1.5 hours' watching on the evening of May 26. Mrs. Wall usually saw the Cardinal on the nest as dusk fell, but it was then too dark inside the tree to tell if the Song Sparrow were beneath.

All four adults fed the nestlings; the Song Sparrows made more feedings than the Cardinals; the males made more than the females. As related below, the female Song Sparrow was apparently unsettled by her experiences, and the female Cardinal was shy during much of my watching. Food brought to the nest by the male Cardinal was sometimes relayed to the young by one of the Song Sparrows; details are given later. During my last day of watching at the nest I color-banded the female Song Sparrow; ensuing observations then confirmed judgments of sex, that I had made from behavior, and enabled confident allocation of previous feedings between male and female. The figures for number of feedings for my 8.25 hours of watching are: male Song Sparrow, 32; female Song Sparrow, 22 (for two hours after being banded, however, this bird was inactive); male Cardinal, 30; and female Cardinal, 13.

Despite the female's low activity, feedings by the Cardinals averaged 5.2 per hour. This compares with averages of 4.7 per hour at a normal nest I watched, 6.1 at the nest Laskey watched (1944:36), and 5.3 at these two combined. Excluding the period after banding, when the female Song Sparrow was inactive, feedings by this species averaged 7.5 per hour. Nice (1943:231) found an average of 11.1 at seven Song Sparrow nests, and believed a weighted figure of 12.5 might be more accurate. Thus the Cardinals alone fed these nestlings at a normal Cardinal rate, and the four adults together fed them at a normal Song Sparrow rate.

I saw feces carried from the nest as follows: by male Song Sparrow, 7 times; female Song Sparrow, 3; male Cardinal, 3; and female Cardinal, 1.

Two of the young Cardinals left the nest the evening of May 29, upon being banded; the third left the following evening. They shortly moved into a dense woods close by, where during such visits as I could make on later days I could hear them but never find them. On June 3 I repeatedly saw the banded female Song Sparrow fly in their direction, and I saw her presumed mate in the same area. The adult Cardinals were also in evidence. I believe both pairs were feeding the fledglings.

BEHAVIOR OF ADULTS

Mrs. Wall states that at no time during the nesting did she see any fighting among the birds. There was likewise no friction whatever during my observations; to the contrary, on nine occasions a Cardinal and a Song Sparrow were at the nest-rim simultaneously. Six times the combination was male Cardinal and female Song Sparrow, twice it was male Cardinal and male Song Sparrow, and once it was female Cardinal and female Song Sparrow. On four other occasions when the male Cardinal was at the nest, and one other when the female Cardinal was there, the female Song Sparrow was only a few inches away from the nest-rim.

The Song Sparrows, indeed, helped the male Cardinal make feedings. While the nestlings were small he seemed hesitant to feed them directly; often, if he arrived at the nest with food and found no other adult bird there, he would wait briefly, giving '*tsik*' calls, then leave with his food, and return repeatedly at intervals of a few minutes until he did encounter another adult. This latter bird would then take his food and pass it to the nestlings. On May 24 the Cardinal made three of six feedings in that way, and on May 26 two of four. Three times the assisting Song Sparrow was the female, and twice the male. Three times the Cardinal came, or returned, to the nest while a Song Sparrow was present, and twice the female Song Sparrow came empty-billed to the nest on the heels of the Cardinal's arrival.

The female Song Sparrow did end one period of brooding as both Cardinals drew near the nest with food, calling; I do not know whether she could see them or whether she reacted to their calls. Also, each Song Sparrow once left the nest-rim as the male Cardinal arrived to make a feeding, and the male Cardinal once left it as both Song Sparrows arrived. All of these incidents are interpretable, however, simply as one bird involuntarily getting out of another's way. In the case of the male Cardinal this was very clear; he was at the nest for

the third time in six minutes, with food to be passed to the young, when the Song Sparrows' arrival caused him to fly, and he quickly returned while one of them was still present and gave it his food.

With the possible exception of the female Song Sparrow, the birds also displayed individual calm in the unusual situation. In watching the nest I stood, only partly concealed, about three feet back from an open window that was six feet from the nest. Despite this added circumstance, both males, on their feeding trips, came to the nest with no hesitancy whatever. My watching made the female Cardinal uneasy; on the first two days of observation and at the beginning of each observation period on the third day, she was very shy, making as many as seven approaches and retreats over a quarter-hour's time before feeding the young, and twice only going finally to the nest when the male preceded her there on feeding trips of his own. Finally accustomed to me, this bird also came and went freely and calmly.

The female Song Sparrow, on the other hand, spent 17 minutes of my first 60-minute observation period, and 13 minutes of my second 95-minute period, fidgeting at the nest or within a foot or so of it, and giving little 'ch' notes—this does not count time spent making feedings and brooding. On the third day she showed no such behavior. On the first two days I inspected the nest before beginning observations, but on the third day, not until I had completed them. Although it thus seems as though those inspections might have made the bird uneasy, the amount of time she spent at the nest, in plain sight, appears to be stronger evidence that she was not concerned over me. I believe she was really somewhat unsettled by her experience, but that she gradually calmed again.

While watching the nest, I was able to attribute one snatch of song to the male Cardinal, and a few brief bits on each day to the female Cardinal. The male Song Sparrow sang frequently; he gave from one to a number of songs after leaving the nest following 21 of the 32 feedings he made, and sang on many other occasions. This was possibly a little more singing than normal for both species (*cf.* Laskey, 1944:28, and Nice, 1943:145).

SUCCEEDING NESTINGS

On the afternoon of June 10 I flushed the banded female Song Sparrow from a new nest containing two eggs; on June 17 there were four eggs. I did not follow the nesting further. This nest was 9 feet east of the jointly-used one; it was based 6 feet 4 inches up in an 8.5-foot arbor vitae. Through June 17 I could locate no new Cardinal nest.

PARALLELS IN THE LITERATURE

A search of the literature discloses several other instances of two species nesting together, and other examples of the unusual types of behavior that were exhibited at the nest I watched.

Davison (1887) found a Mourning Dove, *Zenaidura macroura*, and a Yellow-billed Cuckoo, *Coccyzus americanus*, incubating simultaneously on a nest that also held an egg of the Robin, *Turdus migratorius*; the nest had been begun by the Robin and added to by the cuckoo. In Bendire (1892:141) this cuckoo was identified as a Black-billed, *C. erythrophthalmus*; the nest and eggs were collected. Hagen (*in* Barrows, 1889:86) reported that "in a house with one entrance [Tree] Swallows [*Iridoprocne bicolor*] and Sparrows [*Passer domesticus*] brooded together, and both had young." Bailey and Niedrach (1936) found two joint nestings of Western Robins, *T. m. propinquus*, and House Finches, *Carpodacus mexicanus frontalis*; Robins were raised in both cases. Raney (1939) reported a Robin and a Mourning Dove alternately incubating mixed clutches at the same spot in two successive years; one nest was destroyed during incubation, and the other produced young that later died. Verschuren (1947) noted something similar—Swifts, *Apus a. apus*, and House Sparrows, *P. d. domesticus*, nesting simultaneously in the same hole in a wall, but presumably in separate nests.

Several records of two females, and two full pairs, of a single species using a nest together include one (Forbush, 1929:96) of two Song Sparrows laying in the same nest and incubating alternately; all four adults fed the eight young. Forbush (1929:156) also gave an account of two pairs of Tree Swallows using the same nest, and (1929:413) two female Robins laying in one nest and incubating together, one sometimes on the other's back. Howell (1942:536) wrote of another case like the last. Bellrose (1943) reported two Wood Ducks, *Aix sponsa*, laying in one nest and incubating side by side, and mentioned that two Canaries, *Serinus canaria*, often lay and incubate in one nest.

Among the records of adult birds feeding young of another species are these: Twombly (1934) wrote of a pair of Song Sparrows which, until their own eggs hatched, helped a nearby pair of Robins with feeding of the young and nest sanitation. Jackson (1941) saw one or two Song Sparrows help Yellow Warblers, *Dendroica petechia*, feed a brood; if the female warbler were on the nest the food was given to her and she passed it on to the young. Rea (1945) related that a Black and White Warbler, *Mniotilta varia*, which made some feedings at a nest of Worm-eating Warblers, *Helmitheros vermivorus*, was usually



(Top) NEST USED JOINTLY BY CARDINALS AND SONG SPARROWS, SHOWING EXTERIOR OF CARDINAL CONSTRUCTION AND INTERIOR OF SONG SPARROW CONSTRUCTION, WITH ADDLED SONG SPARROW EGG.

(Bottom) MALE CARDINAL AND FEMALE SONG SPARROW AT NEST USED JOINTLY BY THEM AND THEIR MATES, CATONSVILLE, MARYLAND, MAY 27, 1950. PHOTOS BY CHARLES W. PURCELL, JR.

attacked, but, "In one instance, the Worm-eating Warblers tore the food from his beak and themselves gave it to the young."

SUMMARY

In Catonsville, Maryland, in 1950, a pair of Cardinals and a pair of Song Sparrows used the same nest simultaneously. The nest initially belonged to the Cardinals, but was given a Song Sparrow lining. Both females laid eggs; both incubated and brooded, sometimes jointly. All four adults fed the young and cleaned the nest. There was no interspecific fighting, and there was collaboration in feeding young. Except that the female Song Sparrow appeared nervous, and song may have slightly exceeded the usual amount, individual behavior was normal. Three Cardinals were raised. After their departure there was left in the nest one Song Sparrow egg that had developed only slightly. The Song Sparrows apparently helped the adult Cardinals to feed the fledglings for a time. The succeeding nesting of the Song Sparrows was normal.

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