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POLYANDRY IN THE OVEN-BIRD¹

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IN a previous paper (Hann, 1937) the author has described the usual habits of the Oven-bird (*Seiurus aurocapillus*) with respect to territory, mating, and care of the young, but a case has been observed recently which is so different from any known before that it seems worth while to describe it.

In the ordinary behavior of the Oven-bird the males and females have single mates, and the males chase all other males from their territory. Ownership of territory usually is respected by neighboring males, and an occasional chase in the right direction is all that is needed to keep the territory free from intruders. Copulation takes place between mates during the nest-building and egg-laying seasons only. After the young hatch the male aids with the feeding, and when the young leave the nest each parent takes a part of the brood for later care. The male remains in the home territory, unless it is late in the season, and the female goes into a neighboring territory, sometimes passing from one adjacent territory to another. Neighboring males are tolerant of these females and their young, and may take considerable interest in them, though the concern seems to be largely one of curiosity. Some exceptions to these rules were found previously when one male had two mates at the same time, and when a female copulated with two neighboring males in her own territory, then later visited a neighboring male in his territory during her incubation period. The case of the male having two mates may be attributed to an extra female entering his territory, and the behavior of the female perhaps to an over-supply of sex hormones. In the case which was observed recently a female had more than one mate, the condition known as polyandry, and this situation I will describe in some detail.

On May 30, 1939, I found an unfinished nest along the border of the territories of two males which I called Numbers 73 and 74. I considered the nest as belonging in the territory of 74 because a male had sung not far away in his direction, and twice when this male sang the female answered by chirping, once very sharply, as if reproving him for singing a song meaning "all's well" when the observer was near. On

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June 6, the day the fifth and last egg appeared, I found that Number 73 was singing near the nest, and at the same time Number 74 was singing at his usual post some distance away. I then changed my recording of the nest from file 74 to 73. Later I found that it belonged to both.

On June 19 when the young were two days old, I trapped the female and banded her, placing a metal band on her left leg and a black celluloid band on her right leg. I also trapped a male which proved to be Number 73, and banded him with a metal band on his right leg and a red one on the left. During the next morning as I was watching the nest I discovered that an unbanded bird was carrying food to the young, whereupon I trapped it on the following day, June 21. It proved to be a male, as indicated by the absence of a brood patch, and obviously was Number 74. I banded him with a metal band on the right leg, and a blue band just above it on the same leg, since another male in the woods had a blue band on the left.

These were complicated family relations, but more was to come. I already had noticed a male chasing the female and trying to copulate with her on June 20. After banding the second male I found that this intruder was a third male still unbanded, and apparently one that I had designated according to territory as Number 79. During the few days that followed while the young were in the nest, he entered the area repeatedly, sometimes coming within a meter of the nest. The banded males chased him when they found him, sometimes one following him and sometimes the other. Usually he went for some distance, but at other times merely dodged to one side, or even chased the 74 male. His interest centered chiefly in the female, but he probably was attracted to some extent by the nest and young, though he did not help feed them. He sang often in his territory, which lay to the west, and occasionally sang within fifteen or twenty meters of the nest, but since he did not come to the nest I had no chance to band him. Whether or not the female encouraged him in his attentions was a little uncertain. I did not see her actively invite his approaches as the females sometimes do, and usually she dodged him or turned and faced him causing him to retreat. He apparently was successful, however, in some of his attempts at copulation.

The two banded males continued to feed the young, and in fact did most of the feeding from the time I discovered the second male, three days after hatching, until the young left the nest. During the sixteen hours and thirty-five minutes that I watched the nest, Number 73 fed thirty times (42 per cent), 74 twenty-eight times (39 per cent) and the female fourteen times (19 per cent). Since the female usually brought small helpings, however, and 74's were a little larger than 73's, I think that 74 brought about fifty per cent, 73 forty-three per cent and the female seven per cent of the food.

The writer was anxious to see what distribution would be made of the young birds when they emerged from the nest, and fortunately was present when they left. At 8:37 A.M. on June 25, the first bird hopped from the nest and made its way south, and three minutes later all had left, one by one. None of the adults was at the nest at the time, but Number 73 discovered the first bird as he came with a mouthful of food. He apparently would have fed it, but the female arrived just then, drove him away and took charge of the young bird herself. I had to leave the blind to get a better view of what was going on, and this added to the usual excitement of leaving the nest, but probably did not influence the distribution of the birds. I could not see all that happened, but I noticed the female taking two birds to the west, incidentally toward 79's territory, and shortly afterward accompanying another down into the gully on the north. Later she returned to this last bird, led it on across to the other side and turned to the left. A couple of hours afterwards I found her bringing this bird back across the gully where she then had three young in close proximity. The Number 79 male did not try to get any young birds, but he followed the female continually as she led the young, often within a meter of her.

I was anxious to see whether the 74 male got any young as a reward for his work, but he succeeded in keeping well out of sight at the time. Two days later, however, I found him about seventy meters to the southeast, obviously in 73's territory, caring for a young bird. The female and Number 79 at this time were near where I had left them two days before, and while I was watching, he made an apparently successful attempt at copulation. I was unable to locate 73 that day, but four days later I found him seventy meters south of the nest in his own territory caring for a young bird. This made the disposal of the young quite certain; that is, the banded males got one young bird each and the female three. Quite evidently the female had to speed up her feeding to jump from seven per cent to sixty per cent, and at the same time give a good deal of attention to the Number 79 male, but I did not follow their later behavior to ascertain particulars.

In trying to analyze the causes which led to this peculiar family situation, one can get a little light from the previous conditions which to the best of my knowledge were as follows: The female presumably had been 73's mate at a previous nest about a hundred meters to the south, and started a nest here when her former eggs, in addition to two cowbird's eggs, were collected on May 29. Number 74 apparently was unable to secure a mate and was drawn over by the presence of the female. Number 79 is believed to be a male which had a mate and nest previously some distance to the southwest, but the female deserted the nest on June 10 during one of my experiments, and her later history is not known. The arrival of the male in the vicinity of this nest must have been at least several days after incubation began, and perhaps

after hatching, since he was not noticed until June 20 when the young were three days old. Just why he was drawn here is not clear, unless he received a little encouragement from the female. That the female may have been attracted by his attentions is indicated by the fact that she went directly to his territory when the young left the nest. As to Number 73, he must have been more tolerant than the average male, or he would have driven out his rivals.

DISCUSSION

Mayr (1939) in a recent paper ably reviewed the question of sex ratio in wild birds and also its relation to mating. Polygyny, the mating of a male with more than one female, is the normal condition in certain species such as the Boat-tailed Grackle (McIlhenny, 1937), and happens occasionally among species like the Song Sparrow (Nice, 1937), which are usually monogamous. Polyandry is much less common, and according to Mayr is confined to such species as the phalaropes, in which the female takes the initiative in the mating activities. The last statement would not take into consideration such cases as the present one in which occasional polyandrous matings might occur among species with the usual habits of mating. Perhaps this condition is more common than has been supposed since it is difficult to detect. The question might be raised as to whether the presence of the extra banded male here was not "pseudo-polyandry," a term used by Mayr to describe cases where extra males merely help in the feeding. Though the two banded males were not observed copulating with the female, the presence of both near the nest was observed at egg-laying time, and probably both copulated with her. At least the relationship began early and was more deeply seated than just interest in the young birds. The unbanded male must have come on the scene later, and may be considered as an interloper, but nevertheless a mate also.

BIBLIOGRAPHY

- HANN, HARRY W.
1937 Life history of the Oven-bird in southern Michigan. *Wilson Bull.*, 49: 145-237.
- MAYR, ERNST
1939 The sex ratio in wild birds. *Amer. Nat.*, 73: 156-179.
- MCILHENNY, E. A.
1937 Life History of the Boat-tailed Grackle in Louisiana. *Auk*, 54: 274-295.
- NICE, MARGARET M.
1937 Studies in the Life History of the Song Sparrow, I. *Trans. Linn. Soc. N. Y.*, 4.

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