

THE NESTING OF THE EASTERN NIGHTHAWK

by

Americo A. Fiorucci

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INTRODUCTION

The scope of this study has been limited, first, by the early breeding season, and, second, by the late session at the Biological Station.

Observations included in this report cover one nest of the Eastern Nighthawk. The nest being found on July 3, actual observations continuing from July 3 to 14. The observations cover periods of both day and night. A total of forty hours were spent at the nesting site.

A blind erected near the nest greatly facilitated observation. The blind was erected on July 3, being placed four feet from the nest.

In conclusion the writer should like to thank Mr. Russel Wagner for his having located the nest, and the putting up of the blind. Dr. Pettingill is to be given thanks for his fine suggestions and encouragement. Pictures included in the Appendix were taken by Mr. Charles Blair.

THE NESTING OF THE EASTERN NIGHTHAWK

Local Distribution

The Eastern Nighthawk (Chordeiles minor minor) is distributed over northern and eastern North America, west of the Great Plains and central British Columbia, and from Labrador south through tropical America to the Argentine Republic.

Locally, the Nighthawk may be ranked with our best known birds. A careful survey of the Biological Station grounds would reveal several pairs of nesting Nighthawks. The characteristic flight of the male is a positive proof that there are females in the vicinity.

Description of Nighthawk

Adult male--Upper parts dark marked with whitish, cream-buff, or ochraceous-buff. Primaries fuscous, crossed in middle by a white bar; tail fuscous to black with bars of cream-buff and a white band near the end on all but the middle feathers. Throat with broad white band; chin and upper breast black feathers tipped with buff, cream-buff or white. Underparts barred with black and white.

Adult female--Similar but with no white on the tail. Throat patch buff; underparts more or less washed with buff.

Nesting Activities

a. Location of Nest

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The nest under study was found on July 3, by Mr. Wagner. It was located approximately five hundred feet southeast of the water tower. The eggs were located between two ferns (Pteris aquilina) and just outside of the shadowed area caused by an oak (Quercus borealis) which was located six feet to the north of the nest. The ground in the area

was very sandy with enumerable logs, stumps and aspen trees. It was strictly an aspen association.

b. Eggs

The two eggs in the nest were about one-half inch apart. The eggs varied in coloration but could be described as being creamy white profusely blotched and speckled with lilac gray, lavender, deep brown and drab.

The eggs measured 32 mm. x 22 mm. and 32 mm. x 21 mm. respectively. They were elliptical-ovate in shape, one end being smaller than the other. (See plate 2)

c. Incubation

Incubation had already begun when the nest was located, therefore, early incubation is excluded from this report. According to Bendire (1895, p.167) incubation begins when the first egg is deposited. This view is borne out by the fact that one egg hatched a day earlier than the other.

Observations indicated the female did all the incubating. She is both faithful to and persistent in her task. Of all the times the nest was visited, she was never found away from the nest during the daytime. It was possible for the writer to enter the blind without flushing the female from the nest.

The male did not feed the female as she incubated. Observations showed the female to leave the nest soon after dusk presumably to feed. The usual time of leaving was after 8:00 P.M.. The female was found away from the nest during early morning hours on two different days.

The visits of the male were few and of short duration. Two visits were actually observed by the writer. The male

flew overhead rendering his familiar "peents". He encircled the nesting area several times before swooping down to within six feet of the female. The female responded to his visit by a cooing sound. The female, appearing to be half asleep, as she sat on the eggs, opened her eyes, turned her head, and followed the male about until he completed the visit.

The female left the nest for an average period of twenty minutes when flushed. It is interesting to note that it was possible to come within six feet of the nest before she would leave. She always flew in a southwesterly direction and alighted on an old stump located some thirty feet from the nest. This was true during the early incubation period. It was further observed that she would return sooner if she had seen the intruder actually leave the area. On two different occasions the writer flushed the female bird and continued walking by until out of sight. In both cases she returned within a ten minute period.

The behavior of the female differed on July 11, or one day before hatching. On this morning it was possible to come within three feet of the nest before the bird flushed. Rather than flying to the usual stump some thirty feet away, she would fly very near the ground for a distance of fifteen feet with her wings outspread, mouth open, and rendering a hissing sound. She did all in her power to draw the intruder from the nest. During the time that the young was present, the behavior was much the same.

The position of the female on the nest differed. Observations showed her to face the blind for the most part. She

frequently moved about, and pulled the eggs under her with her bill. The shifting or shuffling of eggs was done four times during an observation period of two hours.

One cannot but comment on the distinct advantage which an incubating nighthawk has over many other birds. The plumage blends into the environment so as to make the bird practically invisible. The eggs, too, are very well colored so as to be missed by a passerby. These adaptations are shown by plates 1 and 2.

The observer was able to move about at will while in the blind without causing the female to leave the eggs. Coughing would cause her to open her eyes, turn her head and listen, but this was forgotten very shortly and she would partially close her eyes.

Climatic conditions affected the incubation. It was noted that on bright days she remained in the nest later than on darker days.

d. Hatching

The young nighthawk was found on the morning of July 12. The smaller of the two eggs being the one to hatch first (See plate 3). The young or juvenile bird was like a small ball of down. The body was completely covered with down. It can be described as being darker buff above spotted with faint gray, yellow, and buff. The ventral down was of a uniform light buff.

When discovered the young was perfectly dry. The eyes were open and it was able to move about. It was noticed that the small wings were frequently used as supports. This was particularly true when the head was raised. The juvenile bird

peeped very frequently.

The activity of the young showed a distinct ability to hear well since it moved in the direction of the female. The farthest the juvenile bird moved from the second egg was four feet.

The earliest weight recorded of the young bird was on July 12. It then weighed 6.57 grams.

The shell of the hatched egg was found four feet from the site of the nest proper. This indicates that it was carried away by the parent.

e. Erection of Fence and Activity

Knowing the nighthawk to be precocial, no time was lost in erecting a fence around the nest. This was done during the morning of July 12. (See plate 4)

The fence was made of cheesecloth, circular in shape, and a foot high. The fence was approximately eight feet in diameter. Sand was banked on either side of the fence base so as to block a possible avenue of escape. Plate 3 shows the fence in relation to the blind.

The reaction of the female bird to the fence was very interesting. After the fence had been completed, the writer went into the blind to observe the ensuing activity.

The female flew into a tree located six feet from the outer edge of the fence. As she stood there she was particularly attentive. She looked the new construction over carefully. After staying there but a few minutes she flew away, returning to the same spot ten minutes later. This time she did not appear particularly concerned as she preened her

wing feathers. She flew into the fence at 8:15, that being forty-five minutes after the fence had been completed.

She first walked to the egg and sat on it, calling the young to her. The young did respond to the call. The female remained over the egg and young for fifteen minutes. The young soon walked away from the female, thus causing her to favor the young to the egg. This was true from this time on, as the female was never seen incubating the egg.

The female was observed to show marked resentment to the fence during the afternoon of July 12. She flew over the fence several times before alighting within one foot of it's outside edge. She did not enter the fence at any time during the entire afternoon. Her next move was to walk along the outer edge of the fence. This she did several times. She frequently stopped, called to her young with a distinct "chuck" and then continued in her coaxing act. The young reacted to all the activity by moving to the inside of the fence in the exact spot where the female had coaxed for some time. When the female detected the presence of the young just to the inside of the cloth she attempted to remove the cloth. This she did by trying to tear it, using her bill, and by scratching with her weak feet. She continued to do this for a period of one hour. The writer ceased observation until the evening of July 12.

f. Feeding of the Young

The writer arrived at the blind at 7:00 P.M. on both evenings. There was no activity noted until 8:00 P.M. on the first night and 8:15 P.M. on the second.

The feeding which was observed during both evenings was done by the male. He arrived at the nest, looked about, and

finally moved in the direction of the young bird. The young bird was frequently being brooded by the female when the male arrived for feeding. In this case the male uttered a distinct "chuck". The young then came from under the female and the feeding act took place.

As nearly as could be ascertained, the male placed his bill well down into the throat of the juvenile bird. Then, by somewhat of a coughing act, the food was regurgitated. Sufficient food was carried for more than one feeding since the act was repeated as often as four times. Over the two hour observation period on July 12 there were five feedings made by the male. On the evening of July 13, four feedings were observed over the same period as the previous night; that is, from 7:00 P.M. to 9:00 P.M.

The writer wished to determine whether there was any feeding at other times of the day. For that reason observations were made commencing at 4:00 A.M. on July 12. During the early morning there was feeding at a similar rate as in the evening. Feeding ceased at 5:30 A.M. No feeding was observed during the day.

The study had an unfortunate ending in that the one and only young was found dead on the morning of July 14. It was hoped that further observations could have been made on feeding, juvenile growth, and care of the young bird in captivity. Since no other nests could be located these hopes were given up. The writer wishes to continue the study at the earliest opportunity.

SUMMARY AND CONCLUSIONS

1. There is no material used in making the nest.
2. Nighthawk prefers an open unshaded area in which to nest.
3. Female does all the incubating.
4. Incubation begins after the first egg is deposited as borne out by hatching time of the young.
5. Male had no apparent responsibilities about the nest during the incubation period.
6. Male visits the female during incubation but does not alight. Visit acknowledged by female.
7. Female becomes more attached to nest as hatching time approaches.
8. Female does all possible in distracting intruders attention from nest by feigning injury.
9. Female leaves nest after dusk. Periods away from nest during the day average fifteen minutes.
10. Female returns sooner if she sees person walk away from nesting area.
11. Female showed little, if any, dislike for the blind. She did object to the fence about the nest.
12. Female is not fed by mate during incubation. Female feeds during early morning and after dusk in evening.
13. Young, when born, are completely covered with down. Eyes are open and move about using wings to assist in walking.
14. Definite sense of direction noted during the first day as shown by the juvenile bird's response to coaxing of mother.
15. Female tries to coax the young when disturbed by such things as a fence around nest.
16. Parent favors the young to the remaining egg.

17. Male assumes the responsibility of feeding young. This is at least true during early period. Male fed six times in a two hour period on July 13.
18. Feeding is done by regurgitation. Parent places bill in mouth of the young.
19. Much brooding of young done by female during first two days after hatching.
20. Young shows rapid development as to ability to walk, senses, evading danger, etc.
21. Parent, egg and young very vividly illustrate marked degree of protective coloration.
22. Young has enormous mouth. This is an adaptation which facilitates the catching of insects.

BIBLIOGRAPHY

- Barrows, Walter B.. 1912. Michigan Bird Life. Lansing.
- Bendire, Charles. 1895. Life Histories of North American Birds.
Washington, D. C.
- Chapman, Frank M. 1932. Handbook of Birds of Eastern North America.
New York.
- Collet, Grace. 1934. Nesting of a Pair of Nighthawks, M.S.
- Duncon, Don. 1937. A Study of Nighthawks. M.S.
- Forbush, Edward H.. 1927. Birds of Massachusetts and Other New
England States. Boston, Massachusetts.
- Gilreath, Ruth. 1934. The Nesting of the Eastern Nighthawk. MS
- Maddox, J. R. 1935. Some Observations of the Nesting of the
Eastern Nighthawk. M.S.
- Pickwell, Gayle. 1939. Birds of New York. Albany.
- Roberts, Thomas S. 1932. The Birds of Minnesota. Minneapolis.
- Wilson, L. E. 1938. A Study of the Eastern Nighthawk in the
Douglas Lake, Michigan Region. M.S.

APPENDIX- Plates