SOME OBSERVATIONS ON ROBIN NESTS.

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In the main building of the Northern Illinois State Normal School, at DeKalb, are several partially vine-clad windows which afford attractive nesting sites for robins. Two robin nests on window-sills were under close observation for a few days each by classes in the above-named instituion during May and June of 1908. That such complete data were secured is due largely to the enthusiasm and ability of Miss Jessie R. Mann, assistant in Biology.

We shall speak of the two groups of nestlings as the May brood and the June brood. There is no evidence that the parents were the same for these two broods, although it is wholly possible. The nests were located in widely separated portions of the building, the May nest having an eastern exposure and the June nest a northern. Both, however, were in fairly sheltered situations and we were able to obtain excellent photographs of both. The observations were taken under absolutely normal conditions, from within the building, the window (in the second story, in each case) being raised after the first few days and the observer sitting at ease at close range.

The May nest was first noticed April 23 and was completed April 27. The first egg was laid during the forenoon of April 29; the second, on April 30, between 9:42 and 10:32 a. m., the female being on the nest during that period. The third and last egg was laid between 10:45 and 11:30 a. m., May 1. The female began sitting that afternoon and was on the nest the greater part of the time through the cool or rainy days that followed. The male was first seen May 8, when he was heard chirping and was seen to be having some unpleasantness with the sparrows. Two of the young were found hatched on the morning of May 14, and throughout the day the male brought food, most of which was fed to the young by the mother bird, which left the nest occasionally but rarely brought food. These first feedings consisted chiefly of earthworms, myriapods (?)

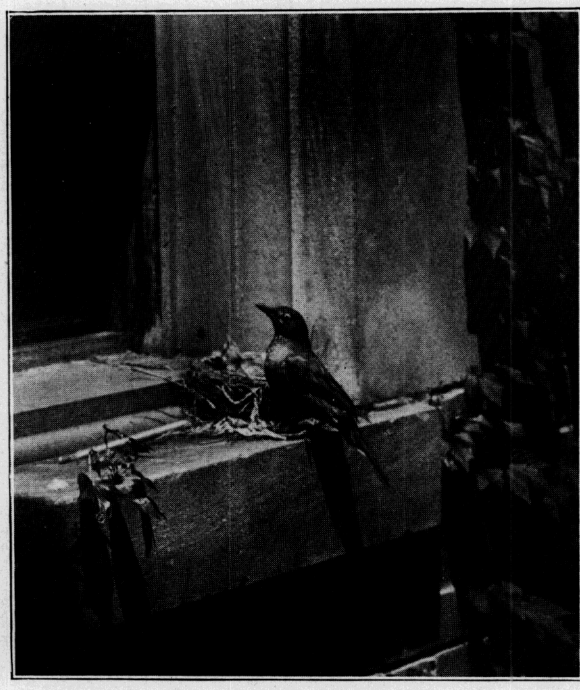
and various lepidopterous larvæ. The third of the young was hatched early on the following day (May 15).

Occasional notes were taken until May 19, when all-day observations were made and continued on May 20 and 21, thus giving complete data for the sixth, seventh and eighth days in the life of the two older nestlings. Frequent observations—including the weight of the young—were made May 22-25, and on May 26 all-day observations were resumed and continued until the young left the nest on the morning of May 28, the fifteenth day.

Quantitatively the data on the feedings for these five complete days are fairly accurate; qualitatively they are not as satisfactory as could be desired, although several pieces of food were obtained and identified through the courtesy of the state entomologist's office.

For the five days of full observation, the working day—meaning the period of activity of the parents at the nest—averaged nearly 15½ hours, from 4 a. m. to 7:30 p. m. At first the female brooded throughout the night, but toward the end of the period, when the fairly fledged young filled the nest, both parents were absent at night. On the sixth day (May 19) the number of broodings — number of times the female settled—was 17; the minimum duration of a single brooding was 5 minutes, the maximum 65 minutes, the average 28 minutes. Thus the young were brooded on their sixth day for a total of 8 hours, or somewhat more than half of the working day, or daylight period. Two thirds of the feeding was done by the male. In contrast with this, on the thirteenth day (May 26) the female did not settle once during the day, nor did she spend the previous night or the following night upon the nest. During the day, while near the nest, she perched either on the edge of the nest or near by on the window-sill. Once she stood over the nest. Usually, however, she left promptly after feeding. The cock robin did less than one third of the feeding on this day.

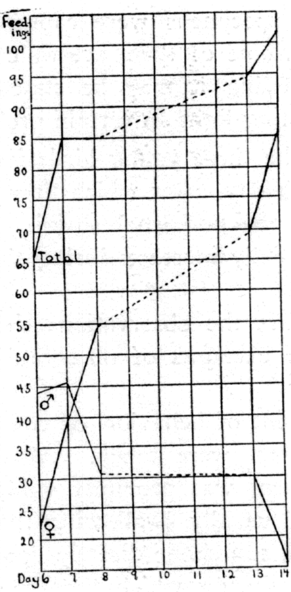
For the five days on which complete data were taken, the number of feedings was as follows:



The May Nest

THE JUNE NEST

Day	By Female	By Male	Total
Sixth	22	44	66
Seventh	39	46	85
Eighth	54	31	85
Thirteenth	64	30	94
Fourteenth	86	16	102



NUMBER OF DAILY FEEDINGS.

The data of feedings by hours—from four to five, five to six, etc.—when plotted, reveal a rather sharp maximum frequency of feeding from 4 to 7 p. m., a more or less level period during the greater part of the day, and a less pronounced maximum from 5 to 7 a. m. The greatest number of feedings in any one hour during these five days was 14; there was never an hour without at least one feeding; the average number per hour (from 4 a. m. to 7:30 p. m.) during the five days was 5.6.

The maximum number of pieces of food given to the young by the parents in one day was 444; the minimum, 278; the average, 356. The average number of pieces brought in one visit was 4. In the observations of the eighth day, the greatest number of pieces was fed from 6 to 7 p. m. For the five days, lepidopterous larvæ comprise one half of the food pieces; earthworms, 28.8%; ants, 6.6%; Diptera, 5.7%; and Coleoptera, Orthoptera, Myriapoda, adult Lepidoptera and other winged insects the remainder. Certain species were especially prominent in the diet, and of these, specimens were captured and identified as above mentioned. Some of them are of considerable economic significance. In passing it may be stated that the data obtained throw interesting light on certain problems in entomology.

The weights of the three young birds increased very rapidly until about the tenth day, after which they remained practically stationary save for the nocturnal shrinkage and diurnal gain. There was a slight daily increase during these last few days in the nest.

In many particulars the observations show important variations from previous accounts of observations made under less favorable conditions.

From the view-point of behavior, or comparative psychology, some notes of interest were taken. Almost invariably, after feeding, the excrement was promptly voided, the parent waiting for this act and usually swallowing the excreta. The nest was not soiled. The sun shone directly upon the nest for about one hour each day, during which time the female brooded in striking attitude. At one time when the young had been weighed in a bowl and the bowl had been placed upon the sill close to the nest preparatory to returning the nestlings, the mother appeared and brooded for some time upon the empty nest, utterly indifferent to the presence of the young in the bowl. We can not here refer to many other observations of interest.

The June brood was under observation throughout the entire sixth and seventh days (June 24 and 25), paralleling the data for corresponding days in the May brood. All-day observation was resumed on the thirteenth day, as in the case of the May brood, but the young left the nest during the morning of that day, making comparison impossible for the later period. In the main, the essential points in the two sets of data are in harmony, although the fact that the male was found dead on the ground below the nest after a storm (cause unknown), before all-day observations were begun, prevented any comparison of the activities of the two sexes. This circumstance, however, gave opportunity to note what adjustment was effected by the widow under the pressure of hunger of the nestlings. She came with food on the sixth day 98 times, and on the seventh day 127 times, as against 66 and 85 for both parents on the corresponding days for the May brood. In both cases the number of young was 3.

In the June brood the period of most active feeding was from 4 to 8 p. m., with a less pronounced maximum in the early morning, as in the May data. On the basis of number of pieces of food, the results are similar, the morning and evening morsels greatly outnumbering those fed at midday.

The young from each nest were followed after their first flight—which was witnessed in both cases—and their experiences on the "first day out" were noted. The struggle for existence became a very real affair to the passive observer, and the records are not without mortality tables.

Note.—Since this paper was read, two additional broods have been under observation, one of them throughout the entire period from hatching to leaving the nest, with complete data. Results will be published in full in due time.