

TIME STUDY OF INCUBATING AND NESTING STARLINGS

by

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The nest used for these observations, belonged to Starlings (*Sturnus vulgaris vulgaris* - Linnaeus), and was placed in an old Yellow-Shafted Flicker hole. (Bent 1965) The Flicker's hole was in an old building (see figure A,). The diameter of the hole was 3.75 inches, and it was 10.55 feet from the ground. The specific consideration in these observations was the time the birds spent on and off the nest, and in feeding. The data taken during these observations is recorded in the following tables, including general observations for each day.

The calculations at the end of the paper are merely averages of the times recorded. The smaller figure from the averages was then divided into both figures to find a multiple.

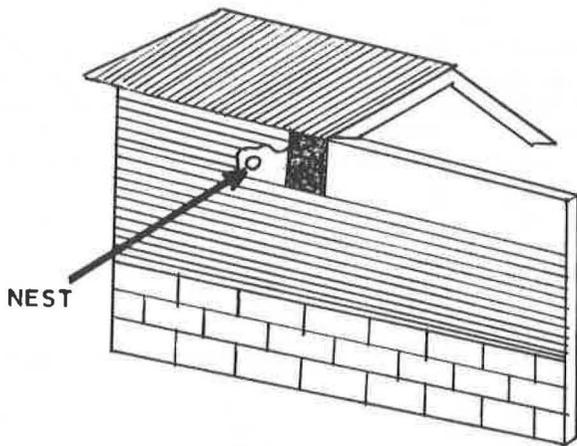


FIG. A.

11 June 1971

Temperature Range 80°F to 70°F

Clear, Warm to Cool Day

Time Enter	Time Left	On Nest	Off Nest
6:15 PM	6:26 PM	11	
6:31 PM	6:42 PM	11	5
6:49 PM	6:51 PM	12	7
6:57 PM	7:33 PM	36	6
7:36 PM	7:49 PM	13	3
7:55 PM	8:04 PM	9	6
8:06 PM	8:11 PM	5	2
8:19 PM	8:32 PM	13	8
8:34 PM	8:39 PM	5	2
8:42 PM	8:56 PM	14	3
8:56 PM			0
	TOTAL	129 Min.	42 Min.

General Observations:

The Starling reacted to the clicking of a grackle at 6:21 PM. Often when leaving the hole the Starling would scratch and preen its feathers. A dog barked at 8:56 PM, and the Starling looked out to see what was happening but never came all the way out of the hole. In passing in and out of the hole no weeds, straw, or insects were carried by the Starling.

13 June 1971

Temperature Range 70°F to 69°F

Rainy - Cold Day

Time Enter	Time Left	On Nest	Off Nest
7:15 PM	7:24 PM	9	
7:24 PM	7:45 PM	21	0
7:51 PM	8:15 PM	24	6
8:20 PM	8:43 PM	23	5
8:45 PM			2
	TOTAL	77 Min.	13 Min.

General Observations:

The rainy weather and cold temperatures probably restricted the activities of the Starling or Starlings today. Problem as to whether one bird is responsible for all the activity or both birds are participating. The bird or birds are still entering the nest empty billed.

14 June 1971

Temperature Range - Low 60's Morning, 80°F Afternoon

Morning - Cold, Breezy, Foggy. Evening, Warm, Breezy

Time Enter	Time Left	On Nest	Off Nest
	6:08 AM		
6:08 AM			
	BREAK		
	3:52 PM		6
3:58 PM	3:58 PM		
3:59 PM	4:10 PM	11	
4:14 PM	-----		
4:20 PM	4:26 PM	6	
4:26 PM	4:30 PM	4	
5:07 PM			
	TOTAL	21 Min.	6 Min.

General Observations:

In the morning one bird left the nest and another immediately went into the hole. In the afternoon, saw two birds at the hole. Starling left nest to chase a grackle at 3:58, and then returned immediately. The second bird brought weeds, or seed-like plant to the nest, which was later drawn into the hole. Only brought one weed in the two hours observed. Still can not distinguish the two birds.

15 June 1971

Temperature Range 62°F to 60°F
Cold, Rainy, Overcast Day

Time Enter	Time Left	On Nest	Off Nest
7:15 PM	7:33 PM	18	
7:34 PM	7:43 PM	9	1
7:44 PM	8:07 PM	23	1
8:08 PM	8:25 PM	17	1
8:26 PM			1
	TOTAL	67 Min.	4 Min.

General Characteristics:

It seemed to be only one bird moving in and out of the nest at regular intervals. Tried to distinguish color of the lower mandible, but could not get close enough. Weather conditions still poor for bird activity. Bird when leaving the nest often roosts in tree near hole and scratches and preens itself.

16 June 1971

Temperature Range 70's
Clear, Warm, Humid Day

Time Enter	Time Left	On Nest	Off Nest
2:00 PM	2:30 PM	30	
	BREAK		
4:13 PM	4:13 PM		
4:13 PM	4:20 PM	7	11
4:31 PM	4:45 PM	14	
	TOTAL	51 Min.	11 Min.

General Observations:

From 2:00 PM to 2:30 PM observed both birds in and out of the hole, with very little time lapse in between. Later in the afternoon the activity in and out of the hole slowed down, but I still observed both birds more frequently today than before. Still can not tell the difference in the two. Used a spotting scope today, but still ineffective. NOTE: while adjusting the spotting scope I looked up and saw one of the Starlings not more than 4 feet from me observing me.

17 June 1971

Temperature Range 76°F to Low 70's
Fair

Time Enter	Time Left	On Nest	Off Nest
6:45 PM	7:05 PM	20	
7:12 PM	7:31 PM	19	7
7:32 PM	7:37 PM	5	1
7:44 PM	8:02 PM	18	7
8:05 PM	8:17 PM	12	3
8:20 PM	8:27 PM	7	3
8:32 PM	8:49 PM	17	5
	TOTAL	98 Min.	26 Min.

General observations:

Appears to be one bird, and it is not carrying food, or nesting materials. Attempted to view eggs, or whatever is in the nest not visible.

20 June 1971

Temperature Range 84°F to 72°F
Sunny, Hot, Humid Day

Time Enter	Time Left	On Nest	Off Nest
2:22 PM	2:31 PM	9	
2:43 PM	2:45 PM	2	12
2:46 PM	2:51 PM	5	1
2:56 PM	3:01 PM	5	5
3:06 PM	3:07 PM	1	5
3:09 PM			2
	BREAK		
5:00 PM	5:09 PM	9	
5:11 PM	5:12 PM	1	2
5:14 PM	5:15 PM	1	2
5:17 PM	5:23 PM	6	2
5:45 PM	5:48 PM	3	22
6:00 PM	6:08 PM	8	12
6:15 PM	6:16 PM	1	7
*6:19 PM	6:20 PM	1	3
6:20 PM	6:33 PM	13	0
*6:33 PM	6:35 PM	2	0

Time Enter	Time Left	Feeding Times	
		On Nest	Off Nest
6:38 PM	6:55 PM	17	3
7:03 PM	7:18 PM	15	8
7:28 PM	7:40 PM	12	10
*7:45 PM	7:46 PM	1	5
7:50 PM	8:04 PM	14	4
	TOTAL	125 Min.	105 Min.

General observations:

The two Starlings are both feeding the young. The starred (*) asterisk times indicated the male. Male is larger, with less spots than the female, easily distinguished now. Male feeds very little, and the female appears to wait for the male to return before she leaves in search of food, he does not wait for her return, but enters and leaves quickly.

21 June 1971

Temperature Range 75°F Steady
Humid, Hot, Dark

Time Enter	Time Left	Time Feeding	Time Away
4:32 PM	4:38 PM	6	11
4:49 PM	4:55 PM	6	14
5:09 PM	5:17 PM	8	10
5:27 PM	5:35 PM	8	4
5:39 PM	5:39½ PM	½	10½
5:50 PM	5:51 PM	1	7
5:58 PM	5:59½ PM	1½	3½
6:03 PM	6:09 PM	6	4
6:13 PM	6:14 PM	1	5
6:19 PM	6:25 PM	6	
	TOTAL	44 Min.	69 Min.

General observations:

Starling (female) definitely feeding young, seems to be carrying all insects into the nest or hole. No sign of the male during this 2 hour observation of the feeding. Bluejay and Starling were perched in large dead tree near the female Starling's hole, but tolerated each other. Jay appears to have a nest about 40 yards from Starling's nest, but no activity between them as of this observation.

22 June 1971

Temperature Range 82°F Steady
Warm, Humid, Clear Day

Time Enter	Time Left	On Nest	Off Nest
*3:13 PM	3:14 PM	1	
3:20 PM	3:21 PM	1	6
*3:23 PM	3:24 PM	1	2
3:28 PM	3:29 PM	1	4
3:37 PM	3:40 PM	3	8
3:45 PM	3:51 PM	6	5
*3:53 PM	3:55 PM	2	2
4:21 PM	4:21 PM	0	26
4:24 PM	4:28 PM	4	3
4:30 PM	4:31 PM	1	2
	TOTAL	20 Min.	58 Min.

General Observations:

No fecal matter removed by either birds. Female feeds twice as much as the male. (*) asterisk

Conclusions

The numerical conclusions were obtained largely by averaging. Subtracting the time the bird entered the nest from the time he left the nest gave one time period of incubation. All these time periods were added together and divided by the total number of cases, to obtain the average incubation time. After the young were hatched, a similar treatment yielded the average time spent feeding the young. Likewise, the time off the nests in both cases was obtained in this simple fashion. The comparison made between time spend incubating and not incubating, feeding the young and not feeding the young, was determined by taking the average time spend incubating and not incubating, and dividing the larger of the two numbers into the smaller. This method was also used in the consideration of feeding time.

This pair of Starlings averaged 13.8 minutes on, and 3.9 minutes off the nest during incubation. The feeding of the young averaged 6.3 minutes, and 4.7 minutes out obtaining food. The Starling in this nest averaged 3.5 times more on the nest than off during incubation. They spend 1.3 more time in the nest during feeding than off, after the young hatched. From general observations the female

and male share the feeding, but not equally with the female feeding 5.6 times more than the male. Insects was the major food for the young, and no fecal matter was ever removed from the nesting area.

It is not the author's intent to purport any new or astounding data concerning incubation and feeding of Starling's young. The conclusions represent findings concerning an isolated pair of Starlings, and should be considered accordingly.

Literature Reviewed

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