

Nesting Habits of the Vesper Sparrow.

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In my study of the nesting habits of the Vesper Sparrow, I was particularly fortunate in being able to observe two different nests, and thus having the opportunity to notice individual differences in the same species.

Nest 1 was found in the afternoon of July 2. I was walking about in a meadow-like region which is located on a hill behind the University of Michigan Biological Camp at Douglas Lake, Michigan. As I stepped close to a small sumac bush, a grey, streaked sparrow, with white outer tail feathers flashing, flew directly from the ground at my feet, and there I discovered the nest. In it I found four blue-grey eggs, which were abundantly spotted and scrawled with purplish and brown markings. The nest, which was cup-shaped, was set in a depression in the ground, so that its rim was barely above the surface of the sod. It was built against the stem of a small sumac bush, and was more or less hidden by a few grass clumps growing very near it. The nest was built entirely of grasses and rootlets, being lined with finer grasses. I took its measurements and found the outside diameter to be $5\frac{1}{2}$ ", inside diameter $3\frac{3}{4}$ ", outside depth but $\frac{3}{4}$ ", and inside depth $1\frac{1}{2}$ ".

I had been informed that the Vesper Sparrow was very shy, and likely to desert the nest if greatly disturbed. Therefore, I was not pleased to learn

that the camp members were planning to have a Fourth of July picnic in the very meadow in which the nest was located. I was determined to save the nest if possible, so on July 3, I roped off a region about the nest, and posted "Do not disturb" signs.

On the morning of July 4th, before the picnic, I visited the nest. The bird sat closely on the nest until I was very near, then she ran a few feet in the grass before flying up and away.

I had reason to believe that the nest was disturbed considerably during the picnic, so I approached it with a feeling of apprehension on the morning of July 5th. The bird was still there, but appeared very nervous, flying directly from the nest at a rapid rate as I drew near.

On the evening of July 6, the bird did not fly until I was within two feet of the nest, and I discovered that during the day, three eggs had hatched. By the next morning, the fourth bird had hatched. The parent was not on the nest when I came. The four young were cuddled together; they were making no noise, nor were they exercising in any way. They seemed almost naked except for a little down on heads and backs; their eyes were closed, and they presented a picture of absolute helplessness.

I was not able to visit the nest on July 8th, but on July 9th, I observed the nest from 8:30 to 11:30 AM. I lay in a blind of leaves about four feet from the

nest from 8:30 to 10:15 a.m., but during that ~~time~~^{period} neither parent approached the nest at any time. The young were obviously very hungry, for during this entire period they continued to stretch their necks and open their mouths. During this time, a pair of robins scolded each other in a nearby tree, and I wondered if they could be the reason why my sparrows stayed away, but I finally concluded that my blind was defective, so at 10:15 a.m. I left it, and climbed a birch tree, which was about twenty-five feet from the nest. At 10:25 a bird approached the nest very cautiously, hopped about picking up insects and seeds, and when it had its mouth full, it sneaked back and forth through the grass for about ten minutes, and finally fed the little ones. They were fed twice more in a period of fifteen minutes, and during this time I heard the soft, rich song of the male from a distant point, the only time I heard him sing during my entire study of the nest. At 10:55, someone walked past the nest, and although I stayed in my tree until 11:30 the parent birds did not come near the nest again.

On July 10, (young then four days old) the pin feathers on the little birds were starting to show, and the eyes were beginning to open. By the next day, the feathers were beginning to show plainly along the wings and middle of the back, and the birds seemed to be much more crowded in the nest. On this day, I observed the nest from the birch tree from 7:30 to 10:30 a.m. The birds seemed unaware of my presence, and fed the young continuously from five

to ten minute intervals during the entire time when I was observing.

On July 12, when the young were six days old, I was able to observe the nest from my blind, so got closer to it than I had been before. The parent birds fed the little ones every few minutes, and I had a splendid view of both of them, the feeding of the young, and cleaning of the nest. One of the parent birds was distinctly smaller than the other, had more vivid streaks on the breast, was more nervous, and appeared about the nest less often. I judged this bird to be the male. The other was a darker grey, much less streaked, and was much bolder in its manner of approaching the nest.

When a parent bird came to the nest with food, all the young would stretch up their necks and open their mouths. The old bird would sometimes give the food to the first little one it came to, but more often, it placed the food in two or three mouths before it finally gave it up. The food seemed to consist mostly of insects and worms, but on several occasions, I believe weed seeds were fed.

The parent birds were exceedingly diligent in keeping the nest clean. Both birds took an active part in removing excreta from the nest. The little bird would void the faeces sac over the edge of the nest toward the parent bird, which would fly away with it. I was not able to see what was done with it then.

At this stage of development, the young had taken on a gawky appearance, and seemed to be growing rapidly. They were very

active in the nest, frequently stretching their wings, necks, and legs. Several times I heard them make weak, squeaky noises when the parents came near the nest.

On July 13, when the little ones were seven days old, I measured and banded one of them, which was almost completely feathered. (Results in Table I.) Two days later, I went to the nest again with the intention of measuring the banded bird, but as I reached out toward the nest, all the little ones fluttered rapidly from it, making a great chattering noise. The two parent birds flew frantically about the nest, one of them almost striking my head. Neither the young nor the parents returned to the nest after this event.

Nest 2, was found July 3, in section 33 near the south line of the University property, on a dry, open woodland spot. This nest was much the same as Nest 1, being built of the same kinds of materials - rootlets and grasses - but it was more concealed, being built under a low clump of *Dierville lonicera*. I did not have a chance to spend much time at this nest, although I visited it daily. For awhile, I made this visit in the evening and always found a bird on the nest (the female, I believe). This bird never flew from the nest, as did the bird of Nest 1, but would flutter along the ground feigning injury and making a great commotion. Occasionally, she would slip quietly from the nest and hide in nearby leaves but not once did she fly away. Then, for several days I made my visit at 4 P.M. At this hour, I never found the bird on the nest, and the eggs would be cool. I do not know whether she left the nest to feed herself at this time, or whether there may have

been some purpose in cooling the eggs.

Three little birds hatched July 13 and 14, but the fourth egg did not hatch. I found upon breaking it, that it was practically empty except for a little dried material in one end.

I happened to visit the nest just after the first little one had hatched (it was still damp) and I measured it immediately (Results in table I.) I believe the mother must have eaten the shell because it was not in sight, although it was evident that the little bird had just hatched.

This nest eventually came to disaster. When the little ones were seven days old, something destroyed them. There were no signs feathers or other signs of a struggle with the parents, but two small holes were dug near the nest, and I believe some small mammal was responsible for the destruction.

In my study of these two Vesper Sparrow nests, I reached the conclusion that these birds tend to be unusually cautious and silent in the vicinity of their nests. The usual number of eggs laid is four, and there is not much variation in coloration of eggs, or construction of nests. There are some noticeable differences in the behavior of individual birds, but in fundamental things they are very similar. Vesper Sparrows appear to be industrious and devoted parents, and care for the nest and the young with proper efficiency.

Table I.
Bird Measurements.
Vesper Sparrow.

Date	Nest 2.		Nest 2.		Nest 1.		
	July 13, 1931		July 17, 1931		July 13, 1931		
Age	Just hatched		4 days.		7 days.		
Weight					240 ³ / ₄ grs.		
Length	36 mm.		57 mm.		60 mm.		
Tail	none		2.0 "		3.0 "		
Bill	4 mm		5.5 "		7.0 "		
Bill-eye.	6.5 "		9.0 "		10.0 "		
Bill-gape	7.0 "		10.0 "		12 ¹ / ₂ "		
Bill-nostril	2.0 "		3.5 "		5 "		
Eye Diameter	5.0 ?		4.0 "		4.5 "		
Extent	27.0 "		65.0 "		135.0 "		
Wing Right	12.0 "		21.0 "		29.5 "		
Primary			2.0 "		15.0 "		
Wing-body	16.0 "		27.0 "		43.0 "		
Foot-body	20.0 "		33.0 "		46.0 "		
Tarsus	5.0 "		11.0 "		18.0 "		
Tarsus-toe	13.0 "		25.0 "		34.0 "		
Foot	7.0 "		14.0 "		16.0 "		
<u>Right</u>	Toe		Nail		Toe	Nail	
	1.	3.0 mm	1.0 mm.	6.0 mm	2.0 mm.	7.0 mm	4.0 mm.
	2.	2.0	.5 "	6.0 "	2.0 "	6.5 "	3.0 "
	3.	4.0	1.0 "	8.0 "	2.0 "	11.0 "	3.0 "
4.	3.0	.9 "	5.0 "	1.5 "	8.0 "	2.0 "	

10100
10112
10115
10118
10121
10125
10128
10140

Young fed by female.
Young fed by female.
Male bird came to nest.
Young fed by female.
Young fed by female.
Young fed by female.
Young fed by female.
Young fed by female.
Young fed by female.

Nest 1.

Table of Observations for July 11 — 7:30 to 10:15 a.m.
(Young 5 days old.)

Time.	Event.
7:40	Young fed by female.
7:45	Men walked close to nest.
7:50	Bird returned but hid in grass.
8:00	Young fed by female.
8:05	Young fed by female.
8:15	Men walked close to nest.
8:20	Young fed by male.
8:25	Young fed & feces sac removed by female.
8:40	Young fed by male.
9:02	Young fed by male.
9:07	Young fed by female.
9:16	Young fed by female.
9:26	Young fed by female.
9:35	Young fed & feces sac removed by female.
9:42	Young fed by male.
9:55	Young fed by male.
10:02	Young fed.

Observations on July 12 9:00 — 11:30 a.m.
(Young 6 days old)

Time.	Event.
9:10	Young fed by male.
9:25	Young fed by female.
9:30	Parent bird cleaned nest.
10:00	Young fed by female.
10:12	Young fed & feces sac removed by female.
10:15	Male bird came to nest and looked at young.
10:18	Young fed & feces sac removed by female.
10:21	Young fed & feces sac removed by male.
10:25	Young fed by female.
10:29	Young fed & feces sac removed by male.
10:40	Both birds came to nest & fed young.
10:55	Young fed by male.

Nest 1.



Vesper Sparrows.
(4 days old.)