

NOTES ON THE NESTING OF THE
CLAY-COLORED SPARROW

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IN Crawford County, Michigan, immediately west of Lovells, is an area of rolling brushy prairie, swept only a few years ago by a great forest fire. It now is a favorite habitat for many prairie birds, probably the most abundant of which is the Clay-colored Sparrow (*Spizella pal-lida*). While visiting Lovells during late May, 1932 I observed this species for several days and a conservative estimate of the number observed on one day (May 29), when much time was spent on the area, was 25, most of which were singing males. On June 24 I searched unsuccessfully for nests, but found one young, only a few days out of the nest.

While crossing the Upper Peninsula of Michigan during late June, 1933 I spent the night of the twenty-seventh south of the town of Sidnaw, in Houghton County near the junction of Houghton, Baraga and Iron counties. Here also, the Clay-colored Sparrow was abundant, but I found no nests.

During June, 1934 and 1935 I found the species rather abundant in certain areas in Schoolcraft County, both near Seney and at Blaney, where Dr. K. Christofferson had several singing males only a short distance from his cottage on T-Lake. We made an extensive search but our only success was finding several of the past season's nests in some low, dense bushes. On June 27, 1935, Dr. Christofferson found a nest with five eggs which he sent to the University of Michigan Museum of Zoology.

July 4, 1937 found me back on the Crawford County prairies, searching for nests of the Clay-colored Sparrow. This time I found one nest under construction, five with eggs, two with young, and several empty nests probably belonging to this species. On July 12 I discovered an empty nest apparently of this species in Oscoda County along highway M-72 north and east of Fairview where there were several singing males. I also heard several males along the road west of Harrisville, Alcona County on the same day. Besides these records, I caught a young Clay-colored Sparrow still unable to fly at Lovells on August 1.

The usual nesting site was well above the ground in some small shrub or tree. Six were in maples, two in oaks, one in a shad bush, and the other in a small haw. The nests in small haws were much lower than those in the other shrubs, with the single exception of one found very close to the ground in a shad bush. Another fact noted was that the shrubs containing the nests were usually located, not on top of a hill or directly in a valley, but rather on the slope of a hill. Very few of the shrubs or trees on the area were more than five or six feet high (150 to 180 cm.) and the nests were usually in the densest por-

tion, averaging 50 cm. above ground (27 to 75 cm.) Located in a natural cupping of the vegetation or in a crotch of the branches, the nesting material was merely placed there and the structure raised from this base. With one exception, this proved very substantial, resisting both wind and storm. Only nest No. 8 was poorly balanced and tipped badly the day the last egg was laid. Nest No. 3 was very conspicuous, because of the use of many long stems of grass in the base, ten or twelve of which measured 35 to 58.2 cm. How the bird manipulated these into the nest is hard to imagine. Above these, as in the usual nest, were shorter grasses worked into a circular formation, and finally lined with the finer tops of the same type of grass. There were 384 pieces of grass in nest No. 3. The finer pieces in the lining were from 3 and 4 cm. up to 15 cm. in length. In nest No. 1 there were a very few horse hairs but none of the others inspected contained any. Three nests were weighed, averaging 6 grams (4.3, 6.6 and 7.3 grams) while measurements were taken on eight. The outside dimensions at the top were from 80 to 130 mm., averaging 101 mm. The average outside depth was 68.5 mm., varying from 58 to 90 mm. The inside cup was usually a little longer one way and the measurements at the top were very uniform, usually 45 x 50 mm. averaging for the eight nests, 45.6 x 49.3 mm. and 37.5 mm. deep. The latter measurement varied from 30 to 45 mm.

TABLE 1
SUMMARY OF CRAWFORD COUNTY NESTS OF 1937

	Date Found	Contents	Eggs Laid	Young Hatched	Young Left Nest
1.	July 4	4 eggs	Fresh	July 12 (3) July 13 (1)	July 21 (4)
2.	July 7	Nest under construction; deserted			
3.	July 7	2 young		July 6-7*	July 15 or 16
4.	July 7	3 eggs	July 8-4th	July 18 (3) July 19 (1)	July 26 or 27
5.	July 9	2 eggs	Fresh	Destroyed	
6.	July 9	Empty			Young being fed near nest
7.	July 11	4 eggs	Not known	July 13 (3) July 14 (1)	Uncertain
8.	July 10	0 eggs Nest complete	July 11-14	July 24 (2) July 25 (1) July 26 (1)	Nest empty August 1
9.	Aug. 1	4 young	Not known	Young 4-5 days old	Not known
10.	Aug. 1	1 young just out of nest			July 31*

* Estimated.

The fine grass used was found over the entire area, so the birds must have had little trouble in locating nesting material. Six Field Sparrow (*Spizella pusilla*) nests found on the area differed little from the nests of the Clay-colored Sparrow in appearance except as regards the linings, the former using rootlets and much more hair. Confirmation



Fig. 1. Clay-colored Sparrow in characteristic habitat, Lovells



Fig. 2. Adult at nest No. 1. July 13, 1937, Lovells

of the owner of occupied nests was made by watching her return to feed the young or by identifying the bird flushed from the nest.

If disturbed when incubating, the female usually moved off into the nearby cover without scolding. However, as soon as the young were a day or two old she would, whenever flushed, start a persistent chipping from some nearby perch and continue until I left the vicinity. The male, as a rule, paid little attention to a human intruder, very seldom even approaching, until after the young were several days old. After that he would come to some distant spot whence, without scolding, he would watch the intruder. On many occasions the male continued singing only a short distance away while I inspected the nest. The male's persistent singing was the only indication of "territory" observance which I noted. When I captured a young bird yet unable to fly one of the parents, presumably the female, flew down to the ground, dragging her wings and advancing slowly, chipping constantly. She continued this as long as the young bird uttered a distress note. The other parent was not seen at any time during the entire procedure which lasted several minutes while I weighed, measured, banded, and photographed the young bird.

The eggs of the Clay-colored Sparrow differed very little from those of the Chipping Sparrow. The spots, forming a wreath around the larger end of the egg, varied in different sets, those in some being much coarser and very dark, while others had fine reddish-brown spots. The ground color in all eggs observed was a uniform greenish-blue, some sets being slightly darker than others. The eggs of a single set usually varied but little.

Measurements of 18 eggs averaged 18.05 x 13.25 mm. The largest egg measured 20 x 14 mm. and the smallest 17 x 12.5 mm. The average weight of 16 fresh eggs was 1.53 grams, while at hatching time this average was 1.3 grams, a loss of .23 grams, or 15.03 per cent. The average weight of newly hatched young was 1.2 grams.

The number of eggs in every complete set found was four. T. S. Roberts (1932:416) records sets "averaging 3-4, rarely 5."

From 22 eggs in 6 nests, 20 hatched, only one nest being destroyed. Of these 20 young at least 15 (possibly 18) left the nest safely. An even better record was established by the 6 neighboring Field Sparrow nests. In every nest of this latter species found, all of the eggs hatched and the young fledged safely. There must have been very few predators in the area. A few Crows and Blue Jays were seen flying over and a house cat was observed at Lovells, searching through the grass along the roadside. The area in question was five miles in length and two or more miles wide. From one position as many as six to ten Clay-colored Sparrows could be heard singing at one time. Since two, possibly more, broods are reared during a season, one can imagine how many young must be fledged there each year.

The laying of the eggs was followed at nest No. 8, where one egg

was laid each morning during the very early hours. Nest No. 4, contained 3 eggs when found and a fourth the following morning. Coues, (1874:150), in his excellent description of the nesting of this species, describes similarly the laying of the eggs.

Since the males sang persistently near the nests in all cases, it is my belief that the female did all of the incubating but I have not proof of this. However, on two occasions at nest 1, I did find the male brooding the young at noon time when they were one and two days old. The female soon arrived carrying food, which she immediately swallowed on spying me and started scolding as she previously had when I found her at the nest. The male, when flushed, did little or no scolding, merely watching me from some nearby shrub. Incubation started, on two occasions mentioned above, the night previous to the laying of the last egg. The female, while incubating, was very inconspicuous, resting low on the nest. The incubation period at nest No. 4 was 11 days while at nest No. 8 it was 11½ days. This is quite similar to that of the Chipping Sparrow (Densmore in Roberts, 1932:413-414) and (Walkinshaw, 1934:304).

At hatching the young were blind and naked, adorned only with a few dark gray neossophtiles on the frontal, occipital, scapular, and sacral regions. The skin was flesh colored on body and legs and that covering the eye appeared bluish-black. The food brought to these very small individuals was small tender insects, some of which were barely discernible to the eye two or three feet away. Later much larger insects were fed the young. They developed rapidly and left the nest at the age of eight or nine days. The young at the age of leaving the nest already showed the characteristic face markings and had a buffy central crown stripe. One young bird when it left the nest weighed 10.3 grams. It had the primaries unsheathed about 10 mm. and the tail 4 mm. It was very active, chipping rapidly when first found and later calling for food. The returning parent came low through the brush to the call of the young. Finding the young in my hands, the old bird swallowed the food and feigned injury by fluttering along the ground.

At the nest both parents fed the young, the female seeming to do most of the work. While I was photographing at nest No. 1 the male often brought food to the brooding female but she always left the nest to receive it.

The song of the Clay-colored Sparrow is a very unimpressive "scree-scree." Sometimes only one of these notes is given; again there are two or more, up to six. However, each individual male was found to give nearly the same number of notes. Individuals did not vary more than one note either way. During the height of the nesting season the males sang all day but by August they were less persistent and often there were no songs during the heat of the day. The rate of singing of one male at 8:25 A.M. on July 9, 1937 was 8,8,8,9,7,9, and 7 times per minute during consecutive minutes. This seemed to be an average rate



Fig. 3. Nest No. 8 removed from site for photographing



Fig. 4. Parent feeding young, July 13, 1937, Lovells

of singing males at that season. The particular male recorded was uttering the "two-buzz" song and males giving songs of three or more parts sang a little less frequently. The alarm note was a sharp "chip," seldom uttered until the young were a few days old. After that it was rapidly repeated whenever they were disturbed. Twice alarm notes were heard which resembled those of the White-throated Sparrow (*Zonotrichia albicollis*). Young birds out of the nest gave a low "z-z-z-z" when disturbed.

Summary

The Clay-colored Sparrow is a common nesting bird in parts of Michigan, especially in the northern section of the Lower Peninsula. It is also found in much of the Upper Peninsula where the habitat is suitable. The nests are built in shrubs and small trees and average 50 cm. above the ground. In my experience the eggs were laid during the early morning hours, one each morning until the set was complete. Four was the average number of eggs. The eggs averaged 18.05 x 13.25 mm. in length and width and 1.53 grams in weight (1.3 grams just before hatching. The incubation period was 11 to 11½ days.

The young at hatching time averaged in weight 1.2 grams and one young bird at the time of leaving the nest weighed 10.3 grams. Both parents aided in feeding and brooding the young but only the female incubated the eggs. The nestling period was 8 or 9 days.

LITERATURE CITED

COUES, ELLIOTT

1874 Birds of the northwest: . . . etc. *U. S. Geol. Surv. Terr., Misc. Public.*, No. 3:150.

ROBERTS, THOMAS S.

1932 The birds of Minnesota. *Univ. of Minn. Press*, 2:413-414, 416.

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1934 Chipping sparrow neighbors. *Bird Lore*, 36:303-305.

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