

The traps used were of several types, all of which have been described in the "Bird-Bander's Manual" of the Biological Survey: the Government sparrow-trap, Gillespie "round-house" trap, clover-leaf, top-tilting, and Chardonneret traps. By far the greatest number have been taken in the last two traps; the top-tilting trap was placed on a box about three feet above ground level, and the Chardonneret in a small tree about five feet from the ground. The other traps were all on the ground. A few birds were trapped in the Chardonneret trap when placed on the ground. Crumbled bread or soda crackers made satisfactory bait.

SOME NOTES ON THE BREEDING OF THE VESPER SPARROW¹

By LINCOLN BRYANT, JR.

DURING the summer of 1931, while a member of the staff of the Austin Ornithological Research Station, I gathered some data on the nesting-habits of the Vesper Sparrow, *Poæetes g. gramineus* (Gmelin). That part of it is presented which permits a comparison of the location and construction of the three nests found, details their histories, and gives the results from banding the only successful brood.

The first nest was found June 26th on a sandy hillside near the station. It was sunk into a depression in the ground about an inch deep under the edge of a tuft of grass, from which its entrance faced northwest. The foundation was of coarse grasses interwoven with rootlets, and the lining was of finer grasses interspersed with a few horsehairs. When discovered it contained two eggs. When visited the next day a third egg had been laid, completing the clutch. Incubation continued until July 2d, when the nest was found torn from its hollow, and its contents missing.

The second nest was found June 30th in a field two hundred yards from the station. Its construction differed from that of the first in that its lining was entirely of horsehair. It measured three inches in diameter, eight inches in circumference, and one inch in depth. It also was sunk into the ground under a sheltering tussock, but differed in that it faced out from the southwest side. When discovered it contained two eggs, and, when revisited on July 3d, it contained three. Subsequently

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it was visited daily. Since a frequently visited nest is very likely to be destroyed by cats, skunks, weasels, or rats, a low wire fence was set up around it the next day. A visit five days later revealed only two eggs, the third having disappeared. Nothing further interrupted the incubation, the two remaining eggs hatching July 14th. The young were short-lived. On July 16th, before they had acquired a complete covering of down, one disappeared, and on the 19th the other was found dead in the bottom of the nest with a wound on its side which appeared to have been made by a sharp tooth or talon. It is impossible to blame any one predator for such systematic and delayed nest-robbing, since the enemies of ground-nesting birds are many. It should be noted that the agency responsible for this destruction overlooked the third nest, which was only sixty yards to the eastward, and which was visited at much more frequent intervals.

The third nest was found on July 15th in a location similar to the second. It was under a tuft of grass in the same open meadow, facing southwest, and contained three eggs. In structure alone did it differ, fine grasses having been used as a lining instead of horsehair. It was the only nest in which the birds were hatched and lived to leave and take care of themselves.

All three nests were built on the ground in open grass-fields, and under grass-tufts. In structure they varied only in lining-material—one was fine grasses, the second fine grasses with a few horsehairs, the third horsehairs entirely. The entrances to all three faced in a westerly direction, one northwest, two southwest. Each nest thus gained full shelter from the easterly and northeasterly winds which bring with them practically all the bad weather encountered here during spring and summer.

Each nest contained three eggs as a full complement. This is considerably at variance from the normal clutch for the species elsewhere, which is given by all authorities as being four eggs as the minimum and six as the maximum. It is possible three eggs comprises the usual clutch for the species on Cape Cod, equally so that the three nests found were all abnormal.

The duration of the incubation period of the Vesper Sparrow is given by F. L. Burns (*Wilson Bulletin*, Vol. 27, No. 1, March 1915, pp. 275-286) as eleven to thirteen days. Individual cases vary greatly, however, since the two factors most influential in determining the length of the period, namely the brooding habits of the parents and weather con-

ditions, are far from constant. The Vesper Sparrow, so far as is known, lays one egg a day until the clutch is completed. Incubation is reckoned usually as commencing the day the last egg has been laid. In nest No. 2 the incubation period began some time between June 30th and July 3d, probably, according to the normal rate of deposition, July 1st. Thus the two eggs hatched in thirteen days. Nest No. 3 was found with three eggs on July 15th, two of which hatched on the 28th and the third on the 29th. Incubation may have begun before the nest was found, but the period was at least fourteen days. Frequent and prolonged absences of the parents from the nest may have extended the duration of incubation.

July 24: "Nest visited four times and no bird found near it; eggs cold to touch. At 10 P.M. parent back on nest."

July 26: "Bird not on nest at all in the afternoon."

July 27: "Vesper off nest all day but on again at night."

As Burns (*idem*) points out, "up to a certain stage of development of the embryo the eggs may be subjected to a cooling process by exposure to the weather for some time without endangering the embryo beyond retarding the growth temporarily and lengthening the incubation period somewhat beyond the normal time."

The possibility of the adult having left the nest without being seen is very slight. Forbush ("Useful Birds and their Protection," 1907, p. 312) states that "when the female is startled from her nest of young, she used all her arts to entice the intruder away, fluttering along the ground with white-bordered tail spread conspicuously, and dragging her wings as if sorely wounded," and there are numerous other references in literature to the same behavior. The birds I observed did otherwise. The parent of nest No. 2 ran quietly through the grass before arising; that of nest No. 3 sat very close until almost stepped on, then flew straight up and away. Although it might appear from many accounts that drawing attention away from its nest by deliberately luring an intruder away is a habit of this species in general, this contradictory evidence shows that the behavior may be merely an individual trait.

The adolescent period is given by Forbush ("Birds of Massachusetts and Other New England States," Vol. 3, 1929, p. 48) as eight to twelve days. During this stage, which lasted ten days in nest No. 3, the young were cared for by both parents. The adults did not become accustomed to the blind used for observation, from thirty to forty minutes elapsing before either of them would return to the nest. Finally one parent waited on a near-by pitch pine watching, while the other stole unob-

trusively through the grass to the nest. They uttered their "chip" note constantly while in the vicinity of the nest, but so far as I could ascertain no sounds were made by the young until after the parents had begun feeding them. Then they uttered the shrill "wheeze" characteristic of a young bird which is being fed.

The plumage of the young birds developed rapidly during adolescence. Seven days after hatching, pin feathers had appeared on the hind head, along the back and wings, and on the sides of the breast. The most advanced feathering, at this time, was on the sides of the breast, but the distinguishing plumage features of the adult bird, the chestnut lesser wing-coverts and white outer tail-feathers, were not yet evident. The day the young left the nest their wings were still poorly developed.

On August 29th, forty-five days after hatching, one of these young birds was compared with an adult that had been banded in 1930. The following differences were noted:—

1. Eye-ring: In adult, very pronounced white. In immature, faint.
2. Head and neck: In adult, brownish with no white tips to feathers. In immature, speckled black and white.
3. Throat: In adult, reddish brown with dull streaks. In immature, with heavy black streaks.
4. Wing-coverts: In adult, tipped with brown. In immature, tipped with white.
5. Chestnut wing-patch: In adult, even color and larger. In immature, diffused with black and smaller.

The disturbance of the nest by my operations may have been the cause of an unnecessarily early departure by the young. I had banded all three of them on August 1st. When a drop trap was erected over the nest to capture the adults on August 7th, I noticed that the young were very restless. In order to accustom the parents to the trap I left the vicinity for about fifteen minutes. When I returned, the trap was found fallen down so that it half covered the nest. The young were gone. The parents were chipping anxiously near by, but no trace was found of their offspring.

Since an attempt to trap the adult at the nest had failed, the identity of the parents remained unknown until the young began to enter the banding traps. Then one adult bird appeared with them repeatedly, having been captured as follows:—

Poæcetes gramineus—No. C83072
Banded July 12, 1930
Repeated July 13, 1930
July 16, 1930

Returned	May 16, 1931	
Repeated	May 10, 1931	
	May 19, 1931	
	June 17, 1931	
	June 18, 1931	
	July 11, 1931	
	Aug. 9, 1931	
	Aug. 18, 1931	with F35683
	Aug. 21, 1931	" F35681
	Aug. 22, 1931	" F35681 and F35683

As the dates show, this adult stopped coming into the traps during the actual nesting-period. The nest was found July 15th and the young left August 7th, whereas this adult did not repeat between July 11th and August 9th. During the period of adolescence of the young the parent would be expected to feed more on insect food than on grain. It is reasonably certain that its appearance with the young in the traps was not coincidence, since the last three times the adult appeared it was with one or two of the young. So it is safe to assume that this bird was one of the parents, probably the female.

The three young birds repeated as follows:—

<i>Poæcetes gramineus</i> —No. F35681—Immature		
Banded	Aug. 1, 1931	in nest
Left nest	Aug. 7, 1931	
Repeated	Aug. 21, 1931	with C83072
	Aug. 22, 1931	" C83072 and F35683
	Aug. 24, 1931	
	Aug. 26, 1931	" F35683
	Aug. 26, 1931	
	Aug. 27, 1931	" F35683
	Aug. 27, 1931	" F35683
	Aug. 28, 1931	" F35683
	Aug. 29, 1931	
	Aug. 29, 1931	
	Aug. 30, 1931	
	Aug. 30, 1931	
	Aug. 30, 1931	
	Aug. 31, 1931	
	Aug. 31, 1931	
	Sept. 1, 1931	
	Sept. 5, 1931	
	Sept. 6, 1931	
<i>Poæcetes gramineus</i> —No. F35682—Immature		
Banded	Aug. 1, 1931	
Left nest	Aug. 7, 1931	
Repeated	Aug. 25, 1931	
	Aug. 27, 1931	
	Aug. 29, 1931	
	Aug. 31, 1931	
	Aug. 31, 1931	
	Sept. 1, 1931	
	Sept. 3, 1931	
	Sept. 4, 1931	
	Sept. 5, 1931	
	Sept. 6, 1931	
	Sept. 9, 1931	

<i>Poæcetes gramineus</i> —No. F35683—Immature		
Banded	Aug. 1, 1931	
Left nest	Aug. 7, 1931	
Repeated	Aug. 17, 1931	
	Aug. 18, 1931	with C83072
	Aug. 19, 1931	
	Aug. 20, 1931	
	Aug. 22, 1931	“ F35681 and C83072
	Aug. 25, 1931	
	Aug. 25, 1931	
	Aug. 26, 1931	“ F35681
	Aug. 27, 1931	“ F35681
	Aug. 27, 1931	“ F35681
	Aug. 28, 1931	
	Aug. 28, 1931	
	Aug. 28, 1931	“ F35681
	Aug. 29, 1931	
	Aug. 30, 1931	
	Aug. 30, 1931	
	Aug. 31, 1931	
	Sept. 2, 1931	
	Sept. 2, 1931	
	Sept. 3, 1931	
	Sept. 3, 1931	
	Sept. 3, 1931	
	Sept. 4, 1931	
	Sept. 5, 1931	
	Sept. 5, 1931	
	Sept. 6, 1931	
	Sept. 6, 1931	

It is noteworthy that none of the young entered the traps for ten days after leaving the nest although the adult was taken once in that period. On the tenth day nestling No. 3 appeared alone. The next day it repeated accompanied by the adult. The adult brought in nestling No. 1 for the first time on the fourteenth day. On the following day it entered a trap with both No. 1 and No. 3. These two young birds showed certain definite signs of mutual recognition. They repeated together four more times, last on August 28th. Subsequently both of them were taken separately, No. 1 seven times, No. 3 fourteen times, but never again together. Nestling No. 2 established its independence early. It did not appear in the traps until eighteen days after having left the nest, and although it repeated subsequently eleven times, it never was taken with another Vesper Sparrow. Apparently family ties were not strong after the young left the nest, and all traces of family unity disappeared in three weeks.

The territory occupied by the young to September 10th was surprisingly small. The traps in which they were taken, not one of which was over two hundred and fifty yards from the nest, are those of the regular line nearest it. There are traps

in similar locations at regular intervals for a half-mile in three directions in which they never appeared. This suggests that the wandering of the young may be governed to some extent by the amount of food available. This hypothesis is supported by the behavior of a Vesper Sparrow which, having been banded in 1930 in a nest a mile and half from the trap-line, appeared in the traps two weeks later.

Abundant as the Vesper Sparrow is, apparently an extensive and intensive study of the species has never been made, for the literature on the behavior of young birds and their wanderings after they leave the nest is scarce. Systematic trapping and banding affords the most efficient method of securing data essential to conclusions, having the additional advantage of permitting the study of plumages without the necessity of collecting the birds.

North Eastham, Cape Cod, Massachusetts

GENERAL NOTES

Recovery of a Banded American Eider (*Somateria mollissima dresseri*)

—On July 17, 1926, I banded an adult female American Eider Duck No. 301536, on the eastern St. Mary Island, in St. Mary Islands Bird Sanctuary, Saguenay County, Quebec, on the north shore of the Gulf of St. Lawrence. This sanctuary lies in Latitude 50° 18' N., Longitude 59° 38' W. The Eider was incubating at the time, and Mr. Fred W. Osborne, the caretaker of the sanctuary, who had visited this nest a few days before and had found this individual bird very tame, succeeded in lifting her from her nest and held her while I banded her.

Through a report which reached Mr. Hoyes Lloyd, of Ottawa, Ontario, while he was travelling in Nova Scotia recently, and which was investigated by him, it has now been ascertained that this bird died near Musquodoboit Harbor, Halifax County, Nova Scotia, in April, 1931. Further details as to its death are uncertain or unknown.—HARRISON F. LEWIS.

Some Song Sparrow Returns—At my banding station in Chilmark, Massachusetts, I have had the following Song Sparrow returns of interest, returns-1 to returns-4:

Band No.	Banding date	Returns-1	Returns-2	Returns-3	Returns-4
163303	Aug. 13, 1925	Nov. 22, 1926	Nov. 22, 1928	June 4, 1929	Jan. 6, 1930
A34177	Aug. 15, 1925	May 27, 1926	Mar. 29, 1927	Mar. 11, 1928	Mar. 16, 1929
167978	Sept. 19, 1925	July 5, 1927	Feb. 1, 1928		
180763	May 7, 1926	Feb. 22, 1927	Jan. 20, 1930		
180733	Feb. 27, 1926	April 4, 1927	Jan. 28, 1928	Jan. 15, 1929	
180773	June 26, 1926	April 4, 1927	Jan. 15, 1929		
194868	Oct. 18, 1926	July 11, 1927	Mar. 18, 1928		
194898	May 9, 1927	Feb. 1, 1928	Mar. 31, 1929	Mar. 6, 1930	
511438	July 16, 1927	April 10, 1928	April 11, 1929		
A71847	Aug. 18, 1927	April 14, 1928	April 4, 1929		
511439	July 18, 1927	April 28, 1928	May 9, 1929		
511458	July 22, 1927	May 8, 1928	April 27, 1929		
194884	May 23, 1927	April 12, 1928	April 27, 1929		
574177	July 20, 1928	July 2, 1929	July 12, 1931		
A136609	July 18, 1929	May 13, 1930	May 3, 1931		

—GEORGE D. EUSTIS, Hollyholm, Chilmark, Massachusetts.