

band, which was composed of a series of sharply-defined, short, blackish streaks; this band was conspicuously narrower than were the breast bands of the associating Savannah Sparrows. The bird *did not* have yellow before and/or above the eye or a yellowish or pale crown-stripe as have the Savannahs, or the olive-green suffusion about the sides of the head and hind-neck as have the Henslow's, or the red-brown speckled hind-neck as have the Leconte's Sparrows (*Passerherbulus caudacutus*), or the gray crown-stripe, nape, and earpatch, or buffy sides as have the Sharp-tailed Sparrows (*Ammospiza caudacuta*), all species which I have seen in life in Ohio and elsewhere as I have Baird's Sparrow in the West. I know of no published sight record for Baird's Sparrow in Ohio.—MILTON B. TRAUTMAN, *Natural Resources Institute, Ohio State University, Columbus 10, Ohio.*

**Ten-Year Life History of a Banded Chimney Swift.**—From a group of 99 Chimney Swifts (*Chaetura pelagica*) banded in 1944 on the campus of Kent State University at Kent, Ohio, one individual was observed each year for ten consecutive years. This bird, a female banded with No. 42-196907, outlived all of the others captured during the first season of this study, and its life history as reported here is the longest one known in detail of any Chimney Swift on record. Since she was first captured as an adult, she lived for at least 11 years.

This bird was banded on June 18, 1944. She was living in air shaft D4 with two other swifts. One was a male and the other a female. It is not certain which female was the mate and which was a visitor. (Nesting of Chimney Swifts in threesomes has been described in detail by Dexter, 1952b.) No.-07 had been observed incubating the eggs, although this is no proof of parentage since visitors are known to assist the parents with their nesting labors. At night one bird sat on the nest while the other two usually roosted just below it. Occasionally two birds sat on the nest, especially when the weather was cool. The nest was situated 12 feet down on the west wall and contained 4 eggs which had been laid between June 15 and 18. The three swifts remained together throughout the nesting period. Hatching began after July 5 and all four were hatched by the end of three days. Within a week all nestlings had blue pin feathers. During the third week of July they were fledged, and they had left the shaft by July 25. Five days later the parents and their seasonal visitor again roosted in D4 for the night with four juveniles. One or two of these may have been their own offspring, but at this time the birds were moving freely from place to place each night for roosting, and residence in a certain place did not necessarily indicate the home nesting site.

On April 28, 1945, a single Chimney Swift returned to shaft D4. Others joined it, and on June 6 another threesome was trapped there. No.-07 was back with the other female (42-196906), but a different male (42-196905) had taken the place of the previous one which did not return. No. -05 left his former mate (42-196904) in air shaft A1 where she then mated with another male. These three in D4 nested together for the season, but once again it is not certain if -07 was the functional female or a visitor with the other two. At times before and after nesting two often roosted side by side and the other one by itself a short distance away. At other times all three roosted together in a group. This year the threesome produced five eggs in a nest 34.4 feet down on the south wall. Because they nested so far down within the air shaft, the nesting could not be easily observed.

These same three returned to D4 in 1946. Nest building was under way by May 29. Again they built on the south wall, but nearly a foot lower -35.3 feet down from the top. Egg laying began June 10. I was absent for the remainder of the nesting season and consequently no further details are known. The companion female (-06) was the last swift trapped in 1946. It was alone in D4 on October 5.

In 1947 the same threesome returned to shaft D4. No. -07 was the first one back, arriving on May 3, but did not roost there every night at first. Two birds were observed together after May 12, and five days later -07 was retrapped with -06. These females were soon joined by the male -05. All three were captured together on June 3. No. -05 had earlier gone to shaft E6 with its mate of 1944 (42-196904). On June 4, nest building began, and the following day -06 left the threesome to mate with the male in C3 whose mate of the past three years nested in another shaft in 1947. (Since -06 left the group it would appear that -07 had been the functional female in this threesome during the preceding three years.) At the same time the male -05 also left D4 for a short time just as the nest was being completed. During his absence from D4 he mated with 42-196904 in shaft E6, but soon deserted her, and left her to build the nest alone, after some delay, and lay one egg before she abandoned the attempt. This pair had nested together in shaft A1 in 1944. The life history of -04 has already been published (Dexter, 1950). Male -05 then returned to -07 in D4, where she laid her first egg on June 16. Two days later the second egg appeared, and after intervals of two days the third and fourth eggs were laid. The nest was 36.2 feet down on the south wall. On July 13 three eggs had already hatched and within two days the fourth had hatched. By July 25 the juvenile plumage was complete. Observations were discontinued at that time.

On May 9, 1948, Nos. -06 and -07 were taken in D4, accompanied by male 42-188524. At first it appeared that females -06 and -07 would again be together and with the new male would form another threesome. However, -06 went back to C3 in a few days' time to her mate of the previous year. The male also left to mate with -04 in shaft E6. On May 30, -07 was found roosting with another female which left the next day. No. -07 remained alone, but on June 3, she abandoned D4 to join the male 42-188516 in B1. In three days they began nest construction, but the process was delayed and it was not completed until June 17. The first egg was laid on June 22. Two eggs were present on June 25, and three the following day. On July 12 the nest and eggs, placed only 6.6 feet from the top, were washed from the wall by a heavy rain and crashed to the bottom. A report on this accident with similar subsequent accidents which happened to this male and his various mates has been published in this journal (Dexter, 1952a). After a few days the mates abandoned their nesting site. On August 6, No. -07 was found roosting for the night in shaft E1 with nine other birds, one of which was the female (42-196909) which had nested there during the past five years. The life history of this bird and her mate has also been published (Dexter, 1951a, 1951b).

On April 28, 1949, No. -07 was captured in shaft B2 where she was alone. In three days she joined male No. 42-196941 in shaft G4. They began nest building on May 22 and completed it one week later. The nest was placed 13.4 feet from the top of the west wall. The first egg was laid on May 30. The second egg appeared four days later; the third and fourth appeared after intervals of two days. While one bird incubated the eggs, the other roosted just under the nest. Nestlings were first observed on June 26, and blue pin feathers appeared soon after. On July 2 the pin feathers began to open out, and in four days the nestlings were covered with black feathers. One week later two of them were out of the nest and clinging to the wall nearby. On July 14 all of them were out of the nest. Five days later three of them returned to the nest for a few days. In another four days time, however, they were all on the wing. At night, three to five birds were observed roosting in this shaft for two weeks, after which only one or two remained. Probably these were the parent birds. The nest fell from the wall on August 22.

On April 29, 1950, No. -07 was captured beside its mate of the previous season in shaft G4 where they had nested. Two nights later both roosted in shaft E6, but on opposite walls. They soon returned to G4, however, and began nest building on May 26. At various times a third bird was found roosting with them for the evening. The nest, 14 feet down on the west wall, was completed on June 2, and the first egg was laid the following day. Additional eggs appeared at intervals of two days until five had been laid. A third bird continued to visit them from time to time, and on June 10 it was captured and banded with No. 49-164539. The first egg hatched June 25. Three others hatched and one was lost. On July 8 the nest fell from the wall. One of the nestlings survived and was attended to at the bottom of the shaft by the parents until it could climb the wall. On July 25 it was able to fly out. The parents, however, remained there, and after nesting was completed in the colony they were visited by various birds roosting for the night. On September 1 there were seven together—the mates of G4 with a parent bird from A5, a juvenile from M7, and three unbanded juveniles. These soon scattered about, but on September 23, three swifts again roosted in G4—the present mate of -07, her mate of 1948 (42-188516), and another bird which was to become the mate of 42-188516 in 1952 and 1953.

No. -07 returned to G4 in 1951, but her mate of the past two years was never seen again. Another male, 42-188588, which had nested in G3 the previous year, joined No. -07 in G4 on May 4. They nested together on the west wall 13.5 feet down, producing the first egg on May 29, which was the first one to appear in this nesting colony. Three more were laid within a week, and as usual were not much incubated until the clutch was complete. Usually one parent remained on the eggs at night while the other roosted just below the nest. All four were safely raised, and on July 29 part of the nest fell away. In the night of July 30, nine swifts roosted here—No. -07 and her mate, a parent from A5, two non-breeding birds of the colony, a return which may have nested elsewhere, and three new juveniles. These birds then scattered. In the night of August 11, No. -07 and her mate roosted in shaft U1 on the next building with 41 other swifts.

Chimney Swifts returned to the campus in 1952 on April 20. That evening No. -07 was in shaft G4 by herself. Six days later she was joined by her former mate 42-188588. On May 10 they had a visitor, No. 48-166259, which may be one of their own offspring. The nest was completed at the same site as the previous year on May 27, and the first egg appeared three days later. Again, it was the first egg of the season in this colony. The next night they had two visitors, one of which was the same as before and the other another yearling (48-166261) which might also have been an offspring from this pair in G4. At intervals of two days, four more eggs were laid, but only four juvenile birds were produced. On July 20, No. -07 and her family were visited by a parent bird from A5, a visitor from E1, a non-breeding bird, and three juveniles.

In 1953, the behavior of No. -07 was erratic. While her mate of the past two years returned to G4, she did not, but was replaced by another female (one of the former visitors in G4 which previously nested in A5). No. -07 was first found that year on May 5 in shaft Q2 with a bird which had returned earlier to its former nesting site in R2. Later that bird went back to R2 for another nesting season, and in the meantime -07 moved into B1 with her former mate of 1948 (42-188516). However, they did not remain to nest with each other again. After staying alone in B1 for a few nights she disappeared until May 27 when she was found alone in shaft C1. Soon she was joined by another swift, and after June 3 they took up

TABLE 1  
SUMMARY OF LIFE HISTORY OF FEMALE CHIMNEY SWIFT 42-196907 AT KENT, OHIO, 1944-1953

	1944	1945	1946	1947	1948	1949	1950	1951	1952	1953
Year										
Date of first capture each year	June 18	June 6	May 7	May 3	May 9	April 28	April 29	May 4	April 20	May 5
Shaft used for nesting	D4	D4	D4	D4	B1	G4	G4	G4	G4	C2
Shafts used for roosting					D4	B2	E6	U1		Q2
Mate	-08*	-05	-05	-05	E1	-41	-41	-88	-88	B1, C1
Number nesting together	3	3	3	2	2	2	2	2	2	-95
Regular visitor during nesting	-06?	-06?	-06?							2
Date nest building began	?	?	May 29	June 4	June 6	May 22	May 26	May 20	May 23	June 9
Wall used for nesting	West	South	South	South	North	West	West	West	West	West
Distance nest placed from top (in feet)	12	34.4	35.3	36.2	6.6	13.4	14	13.5	13.4	15.1
Date first egg laid	June 15	?	June 10	June 16	June 22	May 30	June 3	May 29	May 30	?
Number of eggs laid	4	5	?	4	3	4	5	4	5	?
Number of juveniles produced	4	4	?	4	0	4	1	4	4	2
Occasional visitors during nesting	--	--	--	-06	--	--	39	--	-59	--
									-61	

\* Full band numbers are given in text.

residence in the adjacent air shaft, No. C2. Her mate proved to be 20-188695 which had been banded the previous year, but it is not certain whether or not he was a juvenile at that time. Upon his return in 1953 he was a visitor with the mates in D1 before pairing off with No. -07. They began nest building on June 9, at a time when most other swifts had their nests completed and some had already laid eggs. They produced two juveniles which left the nest, placed 15.1 feet down on the west wall, on August 2, and soon left the home shaft. The parents remained together there and continued to roost side by side at night. Between August 20 and 24 the nest fell from the wall and soon after that the male left. No. -07 continued to roost alone on the old nest site at nighttime. On August 30 she was seen for the last time. Table No. 1 summarizes the main events during the ten years of her known life history.

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**Preservation of Birds' Nests with Plastic Spray.**—During the course of collecting birds' nests for museums and private collections, we devised a highly satisfactory method of preserving and protecting them by applying several coats of a clear plastic spray from a pressurized container directly to the nests. Several such commercial preparations, sold under various trade names, have given complete satisfaction. The number of applications necessary to preserve the natural appearance of the nests depended on construction and nesting materials. For most medium-sized nests five coats were used. The plastic was applied at intervals of 10 to 15 minutes, allowing each coat to dry separately. Care was taken to saturate the interstices completely with the plastic. For best results, only thoroughly dried nests were sprayed; many plastic materials have a tendency to turn milky if used under conditions of high humidity. Insect pests were controlled with insecticides applied to the nests prior to the initial plastic coating. The nests usually were removed from their locations and dried, but some delicate types were coated *in situ* to avoid possible disturbances. The protection and flexibility of these plastic coatings prevented damage often associated with the handling and shipping of birds' nests.

Among the nests preserved with plastic sprays were: the flimsy, cup-shaped nests of the Puerto Rican Ground Dove (*Columbigallina passerina trochila*); the nests built of wild cotton (*Gossypium hirsutum*), by the Puerto Rican Emerald Humming Bird (*Chlorostilbon maugaeus*); and the curious nest-homes of the Puerto Rican Honey Creeper (*Coereba portoricensis portoricensis*). This method also was used to preserve a nest, woven of green moss and camouflaged with bits of bark, of the rare Puerto Rican Peewee (*Blacicus biancoi*).—J. L. SPENCER and W. C. KENNARD, *Federal Experiment Station, Mayaguez, Puerto Rico.*