

THIRTEEN-YEAR BREEDING HISTORY OF A CHIMNEY SWIFT¹

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ABSTRACT

The breeding history of a male Chimney Swift (*Chaetura pelagica*) has been traced in detail over a period of 13 years (1947-1959), which is the longest continuous record known for any individual of this species. During this time it resided or nested each year on the campus of Kent State University where it lived in air shafts with a group of four swifts for three years, and a group of three swifts for three years, as well as spending seven years living only with its mate. At one time or another it was mated to five different females and occupied four different air shafts in campus buildings during its life span.

During 24 years of banding Chimney Swifts (*Chaetura pelagica*) living in a colony on the campus of Kent State University at Kent, Ohio, the breeding history of one swift was recorded each summer for 13 consecutive years. It was not only the oldest swift in the Kent colony, but when last seen was within two weeks of the longevity record for Chimney Swifts (Hight, 1953). Also, while Hight's record is limited to the dates of banding and recovery, the Kent bird has been known throughout its life as a summer resident and nesting bird. Marking individuals with paint each year, as well as with a permanent bird band, has made possible a complete nesting study of each swift in the colony.

The breeding histories of two Chimney Swifts, each one of which was studied over a period of ten years, have already been published (Dexter, 1956; 1961). In addition, Fischer (1958) has described the breeding biology of this species. The following is the record of a single swift observed at Kent for 13 years. With a mirror by day and a flashlight by night, it was possible to observe each marked bird frequently during its residence on the campus. Altogether there were 88 air shafts in four buildings available to the swifts. Each block of shafts is designated by a letter, and each shaft in a block is given a number, i.e. A5, B1, C3, etc. Birds in every occupied shaft were trapped several times each year (Dexter, 1956), and the swifts banded, if not already banded, and given a distinctive paint mark for identification.

Chimney Swift No. 42-188523, a male, was banded with a government bird band 1 July 1947, probably in its first year, while it was a visitor in a foursome (four living together in a single air shaft—two visitors, one No. 42-188523, with a mated pair) occupying air shaft Q1, a part of the ventilation system on the roof of the Administration Building. (Details of Chimney Swifts nesting in groups of three and four have already been published—Dexter, 1952). Three males and one female composed this foursome, the two males with the mated pair being all-summer visitors. (The female in this group had been in a foursome over the preceding two years). When No. 42-188523 was banded, the nest of the mated pair, 19.5 feet down on the east wall of the shaft, was approximately three-fourths completed. It was completed two days later, but for some reason not known, eggs were never laid in this nest. In the evening of 3 July, a fifth visiting swift spent the night with this group.

Swift No. 42-188523, the subject of this paper, henceforth to be referred to as No. -23, was captured as a return on 15 June 1948 from shaft P3 with the former mates of that shaft. Another swift, which also came from Q1, likewise joined this pair in P3 to form a new foursome. The mated pair (which did not include No. -23) began nest building 25 June (about three weeks late for swifts in this

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area), 33 feet down on the south wall. The first egg was laid 3 July, a total of three ultimately composing the clutch. Because of the lateness of the nesting, small roosting flocks had joined the group in P3 before the nestlings were fledged. Thirteen swifts were present on 9 August, 11 on 27 August, and 33 on 27 September.

In 1949, No. -23 was a visitor once again in shaft P3. The female of that shaft continued nesting here as before; the male parent in 1949, in the absence of the former mate, was the other male visitor with No. -23 of the previous year. A threesome was now formed, with No. -23 as the only extra unmated bird. The nest was constructed between 28 May and 1 June, 32.9 feet down on the south wall of shaft P3. Four eggs were laid. Twice during the season No. -23 spent the night roosting in shaft S1. On the first occasion (8 August), the mates of S1 were still present, together with six other visitors. Between visits in S1, No. -23 was back in its own shaft, P3.

In 1950 the P3 threesome was reunited briefly, but very soon No. -23 left the mated pair and entered shaft R2 where it was joined, on May 26, by a female. It was the first mating on the campus for both, and they did not begin their nest until 30 June, about a month behind schedule. For some reason it was never completed. Late in the summer, No. -23 roosted on several occasions with other swifts in shafts P3 and S1 where it had resided in former years and was there retrapped late in the season of 1950. It returned in 1951 to shaft R2 with its mate of the previous year, but she soon left to nest in shaft P3. On 23 May, a yearling swift (probably a female) joined No. -23 in R2, but was soon replaced by a mature female. Nest building was again late; construction proceeded between 20-27 June. This time it was successful and two eggs were laid. After the nesting season, No. -23 again roosted in shaft P3, as formerly, and was among the last five swifts to leave the campus on 2 October.

In 1952 No. -23 returned to shaft P3, where it was soon joined by its R2 mate of the previous year and temporarily by three other visiting swifts. The mates nested in P3 and were joined by an all-summer visitor, forming a threesome in this shaft. This year, nest building was on schedule (7-10 June), the nest being placed 32.8 feet down on the south wall. Three juveniles were produced. After nesting was completed, No. -23 roosted in shaft S1 with the nesting mates of that shaft and occasionally with a few other visitors. On 4 October No. -23 was the last swift remaining on the campus.

Swift No. -23 returned over the next seven years and nested each of these years in shaft P3. In 1953 and 1954, it had the same mate as in the previous two years; for the next three years it had a different mate each year, but it nested with the same mate for the last three years of its life. It was in a foursome in 1953 and in a threesome in 1959. Each year it began nesting in late May or early June, placing the nest between 32 and 33 feet down on the south wall of the air shaft. The first egg each year appeared in middle June. Occasional visitors to its shaft were found in the seasons of 1954 and 1959. Late in each season it occasionally roosted in shaft S1, as it did in previous years.

On 7 June 1954, when the nest was about half made, No. -23 and its mate spent the night three feet apart on the south wall of shaft P3, which is unusual behavior during the nesting season (typically mates roost side by side or close together by the nest). After 27 July, No. -23 roosted with a deserted female brooding her nestlings alone in shaft S1. Later, however, No. -23 returned to its mate in P3. In 1955 the female from S1 at first joined No. -23 in P3 for 12 days, after which she returned to S1. Then a female from Q2 mated with No. -23 in P3 (the former mates of these two females from S1 and Q2 did not return in 1955). Following the nesting seasons, No. -23 roosted for two nights with the female which had nested in S1.

On 20 May 1956, 305 swifts roosted in shaft P3. Included were five returns, of which No. -23 was one, two repeats of earlier captures, one foreign recovery from

TABLE 1
Summary of Breeding Life History of Male Chimney Swift 42-188523 at Kent, Ohio, 1947-1959
(Banded July 1, 1947, in Air Shaft Q1)

	Year												
	1947	1948	1949	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959
Date of first capture each year	July 1	June 15	Aug. 4	May 1	May 5	May 2	May 7	May 16	May 9	May 13	May 8	May 9	May 5
Shaft used for nesting (Visitor only 1947-49)	(Q1)	(P3)	(P3)	R2	R2	P3	P3	P3	P3	P3	P3	P3	P3
Additional shafts used for roosting	—	—	S1	P3, S1	P3	S1	S1	S1	S1	—	—	—	—
Mate (after 1949) (Mates of Q1 and P3 given for 1947-49)	42-188524	42-196910	42-196910	42-188567	48-164548	Same	Same	Same	20-188677	20-188672	21-194780	Same	Same
No. nesting together	4	4	3	2	2	3	4	2	2	2	2	2	3
Regular visitor during nesting	42-188523 42-196995	Same Same	Same	—	—	20-188664	20-188664 20-188679	—	—	—	—	—	24-167742
Date nest building began	—	June 25	May 28	June 30	June 20	June 7	June 3	May 30	June 2	June 5	June 7	June 1	May 27
Wall used for nesting	E	S	S	S	N	S	S	S	S	S	S	S	S
Distance nest placed from top (in feet)	19.5	33.0	32.9	20.5	38.6	32.8	32.8	33.0	33.1	33.1	32.7	ca. 33	33.3
Date first egg laid	None	July 3	?	None	July 1	June 15	June 16?	June 19	June 12	?	June 15	?	June 9
Number of eggs laid	0	3	4	0	2?	3	4	?	?	?	5	?	7
Number of juveniles produced	0	3	4	0	2?	3	4	?	?	?	0	?	2?
Occasional visitors during nesting	42-188520	—	—	—	—	—	—	21-128537	—	—	—	—	24-167745 24-167728

Hiram, Ohio, and 297 unbanded birds. (Unfortunately, 125 of these swifts perished by squeezing into the trap all at one time.) That year No. -23 mated with the female which had nested for the past three years in shaft H1, a bird that had been trapped and released at Rome, Georgia, by Gordon Hight 19 September 1954.

In 1957, No. -23 returned with a female banded the previous year. She left on 18 May for shaft Q2, but returned three days later and became the mate of No. -23 for the next three seasons. At various times during those years, No. -23 and his mate roosted apart at night, unusual behaviour for mates. In 1957, after five eggs were laid, four disappeared and the remaining one was soon abandoned. In 1959 five eggs again were laid and four disappeared, but two were then replaced. It is unusual for a Chimney Swift to lay seven eggs in one season. On 14 October 1959, No. -23 and his mate were the last swifts remaining on the campus, and it was the last time No. -23 was seen alive.

SUMMARY

In 13 years (1947-1959), male Chimney Swift No. 42-188523 was in three foursomes (the breeding male once), was in three threesomes (the breeding male twice), and for seven years was mated without the presence of additional summer visitors. During its lifetime, it had five different mates. It nested or resided in four different air shafts (P3, Q1, R2, S1) on the roof of the Administration Building on the campus of Kent State University. Details of its breeding history are summarized in Table 1.

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