

was retrapped April 5, 1939, at Ardmore, Pennsylvania, by H. Groskin. The distance between the two banding stations is 240 miles.

(7)—Purple Finch banded by H. Groskin March 29, 1939, in Ardmore, Pennsylvania, was retrapped May 1, 1939, at Sault Ste. Marie, northern Michigan, by M. J. Magee. Purple Finch banded by M. J. Magee May 22, 1938, at Sault Ste. Marie, northern Michigan, was retrapped March 10, 1939, at Ardmore, Pennsylvania, by H. Groskin. The distance between the two banding stations is 670 miles. *Glenn Road, Ardmore, Pennsylvania.*

SIX-YEAR DIARY OF TWO CHIMNEY SWIFTS

BY RALPH W. DEXTER

On June 15, 1944, I banded my first Chimney Swift.¹ Since then over 400 others have been captured and banded from the air shafts of three of our university buildings at Kent, Ohio. Seventy-eight of these have been recaptured, identified by the serial numbers on the aluminum bracelet which each one wears on its leg, and observed from year to year over varying lengths of time. Their return to Kent each spring from the wintering grounds in South America, their pairing-off for mating, selection of nesting site, nesting procedure, autumn flocking and departure have been carefully recorded each year up to the present time. In thus tracing life histories none has been more interesting over the

¹For banding procedure see Audubon Magazine, 52(3): 158. May-June, 1950.

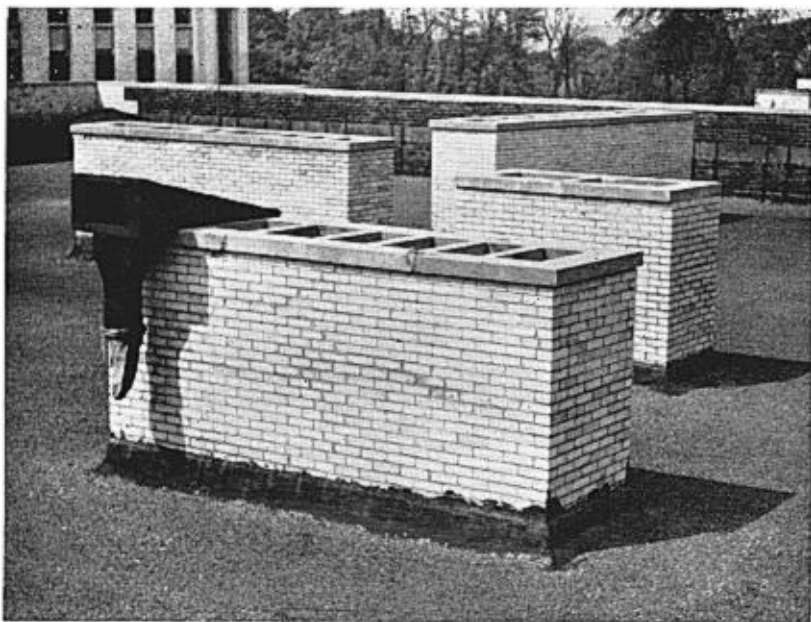


Figure 1—Chimney Swift trap set on shaft K 7. Window faces east for early morning light. Photo by Evan Gauger.

past six years than the first Swift banded with the number 42-196901, and another one banded two days later with the number 42-196904. We shall call these no. 1 and no. 4 for convenience. No. 1, a male, represents a typical Swift with a typical life history. No. 4, a female, has been an exceptional bird with many vicissitudes in her life during the past half dozen years. Let us follow the lives of these two, as far as they are known, and the relation of these selected birds to others of the breeding colony on our campus.

On June 15, 1944, no. 1 was already mated to no. 10, and was to keep this same mate for another two years. The nest had been built on the south wall of air shaft C 3 on Kent Hall 6.4 feet down from the top. Four eggs were on the nest glued to the side of the brick wall. On June 22, the first bird hatched; the next day the second one hatched; another day and the third hatched. The fourth egg either failed to hatch or the young bird fell out of the tiny, crescent shaped, twig nest only 3.75 inches long with a maximum width of 2.5 inches. Three days after hatching, blue pin feathers began to show. After another four days these began to open out into the black feathers of full-grown nestlings. On July 8 the birds left the nest, never to return to it. Some of them roosted on the wall in the same shaft at night, but the family was now scattered and soon none returned to this shaft again for the season. On July 25 the male parent, our no. 1, was found, without his mate, over in shaft H 1 with eleven other birds, four of them being other parent Swifts and seven of them juvenile birds. On September 26 the male from C 3, again without his mate, was recaptured on the roof of another building, Merrill Hall, with nine other repeating birds from the campus colony and 34 unbanded birds, most of which were probably juveniles. These were flocking in preparation for the fall migration. In two weeks all of the Chimney Swifts were gone for the year.

On April 28, 1945, the Chimney Swifts returned to the campus. No. 1 was recaptured on May 20 in his former domicile, shaft C 3, with his former mate and 86 other Swifts. Three of these were also returning birds. The flock soon dispersed, leaving no. 1 with his mate to nest again in the same shaft in a nest constructed on the same spot where the old one had been fastened. The old nest was torn off the wall as soon as the birds returned in the spring. The new nest was made during the second week of June. The first egg was observed June 15. Two eggs were present on the 17th, three eggs the 18th, four eggs the 20th. By July 7 they were all hatched. In a few days the blue pin feathers appeared, and several days later they gradually opened into black body feathers. One nestling disappeared. Apparently it fell or was pushed out of the nest. After learning to fly, the birds scattered, but on October 2 the female parent was found roosting alone beside the empty nest, and that was the last she was seen that year.

In the evening of May 1, 1946, Chimney Swift no. 1 with his mate no. 10 were found perched side by side on the old nest after their return from South America. For some reason they soon separated. No. 1 moved into shaft B 1 with bird no. 2, which had nested there for the

two previous seasons, while no. 10 moved into shaft A 1 with two other birds, one of which had nested there the previous year and continued to do so for the next four years. On May 13, nos. 1 and 2 were again found in shaft B 1, and with them were 59 other Swifts. Five of these were also returning to the campus, and one had been banded by Mrs. F. C. Laskey at Knoxville, Tennessee, on September 14, 1941. But two days later no. 1 was back with his former mate roosting again on the old nest in C 3 which was soon torn off the wall and a new nest made during the last three days of May and the first three of June. Copulation was observed when the nest was about one-half completed. The first egg was laid on June 4. Two more were laid in the next four days and another nesting season, at least the third, was under way for this same pair. But at this early date incompatibility was again in evidence. Several times the two were found perched for the night on opposite walls of the air shaft instead of side by side close to the nest as mated Swifts are usually found. We shall soon see the final rift between them.

On April 29, 1947, no. 1 returned again to his favorite shaft, C 3, with his mate of the preceding three years. But in two days they parted. No. 10 soon went over to the roof on the adjoining building, the Administration Building, and nested in shaft P 3 with a new mate, the two continuing to nest there every year since. No. 1 was not located again for two weeks, but at that time went back to shaft B 1 with Swift no. 2 with which he had roosted for a while during the previous year. This association did not last as no. 2 moved out to shaft N 9 to mate with a male that had nested there for two years and continued to do so for another three years. No. 1 went back in three weeks time to his old haunt, C 3, and brought in a new female, no. 6, which had previously been in D 4. Since beside the male, there was always another female along with her in this shaft, it cannot be stated whether no. 6 was a breeding female or a visitor during the two previous years. In any case no. 1 took this female for his mate in 1947. The old nest in C 3 had been washed off in May by a heavy rain. A new one was made on the same spot the second week of June. The first egg was laid on June 23. Two days later another egg, and in a few days a third one was laid. Two hatched on July 15, while the third one disappeared. The two nestlings feathered out, completing the first brood of this new pairing.

On May 13, 1948, no. 1 came back to shaft C 3 with no. 6 again. At first they did not spend every night together, and occasionally were perched on different walls when they were in the same shaft. However, they did nest together for another year. The nest was completed the third of June. Ten days later the first egg appeared. Three more were laid at intervals of two days. The parents took turns incubating the eggs. Nearly always one or the other was on the nest. The first two hatched on July 5; the other two hatched a few days later. They feathered out and left the nest on the 22nd of July. The family dispersed, but a few birds were occasionally seen roosting in their home shaft

during the next ten days. After the first of August, however, no birds were seen there again. On August 29, the two parent birds were recaptured on the roof of the adjoining building in shaft Q 2, along with 10 other Swifts, including the parent birds which had nested there that season. No. 1 was recaptured September 19 from shaft S 1 of the same roof, with nine other birds but not with its mate. However, eight days later no. 1 was recaptured for the third time with 32 other birds in shaft P 3. In this group were its two former mates nos. 10 and 6. The mates of no. 10 over the past two years were also there. Several other former mates were present in the flock including the four birds which lived together and nested (one nest only) in that same shaft that season. By the end of September all of the Swifts had left the campus on their fall migration.

On May 5, 1949, no. 1 returned for at least the sixth year to shaft C 3 and for the third time he had no. 6 with him, but they roosted on opposite walls. Soon no. 6 went over to the roof of the next building and joined two males in shaft Q 2 which had been there during the two previous years, and there she started to nest. After laying one egg, however, all three birds disappeared. Ten days later one returned and attempted to hatch the abandoned egg. No. 1 then left its old home, got a new mate, and settled into a new shaft, C 1, only two feet away in the same block of air shafts. A nest was started on June 13. Ten days later the first egg was laid. While the new mate was laying the clutch, no. 1 fed her by regurgitation. Two more eggs were laid at intervals of two days. From these, two nestlings were raised.

Thus in six years no. 1 nested successfully for three years with one mate in the same air shaft, for two years with another mate in the same shaft as before, and in a nearby shaft with a new mate for the past season. This bird and its former mates are still living and nesting on the campus at Kent.

Now back to 1944 again, Chimney Swift no. 4, a female whose diary we shall now follow, was already mated with Swift no. 5 when they were first trapped together on June 17 from air shaft A 1 on Kent Hall. Four eggs were on the nest at that time, located 10.5 feet down on the south wall. On July 11 the four young birds left the nest. Two weeks later the parents were retrapped with six juvenile birds. Which ones were offspring of nos. 4 and 5 could not be told. The next day all of these birds left this shaft for the balance of the season. The following day no. 4 was found over in shaft D 4 without her mate but with four juvenile birds, one of which came over with her. The next night no. 4, this time with her mate, moved into shaft E 1 with 15 other birds, including the mates of that shaft, the mates of shaft H 1, two adults without their mates, a non-breeding adult (?), and eight juvenile birds. The last record of no. 4 for 1944 was in the flock of 44 birds trapped from Merrill Hall on September 25 in which Swift No. 1, as earlier mentioned, was found. Neither was with its mate at that time. Shortly thereafter they left for the season.

In 1945 no. 4 returned to A 1 but took a new mate with which she

nested for that season only although this new mate was to return to A 1 for nesting for the next four years. The former mate of no. 4 moved into shaft D 4 with two females both of which were returning there from the previous nesting season. No. 4 with her new mate built a nest on the same site as the old one, completing it on June 12. Two days later the first egg was laid. Three days later the second, the next day the third, and in a few days more a clutch of four was complete. They hatched about July 8. In three days the blue pin feathers were growing out, and in two weeks time they were completely covered with black feathers. On July 25 the first nestling dared to cling onto the wall beside the nest. In a week the family was gone.

In 1946, no. 4 returned to the roof of Kent Hall but did not continue to live in shaft A 1. Instead she took up residence in E 6 where the male (no. 20) which had nested there for the two previous years had returned, but its former mate had failed to do so. A third bird also came in and joined them for about a week. The third party then left and two weeks later no. 4 with her new mate, no. 20, started nest building on July 4, completing it five days later. It was fastened on the north wall 17.1 feet from the top. After the nesting season the mates continued to live in this shaft, at least at intervals, and were found there together as late as September 24.

No. 4 returned to E 6 in 1947 the first week of May. Surprisingly enough she was found there with her mate of 1944, Swift no. 5. However, they did not settle down to nest but changed off several times before the nesting season began as we shall see. On the eleventh of May no. 4 went back to shaft A 1 and joined no. 20, her mate of 1945, but this relation did not last either. The next night no. 4 went into C 1 with a bird which escaped from the trap and hence could not be identified. One week later no. 4 was back again in E 6 with no. 5 and six unbanded birds. All soon left. On June 3, no. 5 returned to D 4 with the two females nos. 6 and 7 with which he nested the year before. The next night, however, nos. 4 and 5 were back together again in shaft E 6. In a few days no. 4 was left alone there but she went ahead and built her nest by herself beginning June 10, even though it required two weeks to do so. It was placed 17.2 feet down on the north wall. At intervals no. 5 returned to her, but soon left permanently to rejoin one of the females in D 4 (no. 7) with which he nested, the other female (no. 6) leaving to nest with no. 1 in shaft C 3 as we have already learned. No. 4 laid one egg in her nest on June 28. Two days later she destroyed it and laid no more, but remained alone in E 6 at least until the end of July. This type of mating irregularity has been observed only once in the colony over a period of six years. Probably it does not happen often, but it was very fortunate for this study that it was observed this once. Since the sexes cannot be identified on external features; the sex of each bird banded remained unknown until no. 4 was left alone to lay her single egg. This fact established no. 4 as a female, and once the sex of this bird was known, many others could be determined by tracing back through the records of mating combinations.

In early May of 1948 no. 4 returned to E 6 and remained alone for some two weeks. Then a male which had nested in A 5 the year before came in and joined her but did not remain long. He was replaced by another male (42-188524) which had been in shaft Q 1 on the roof of the Administration Building the previous year with three other Swifts. (A nest had been constructed there but no eggs were ever laid.) No. 4 with this new mate started nest building June 12. Six days later the first egg was deposited. Three days later the second, and in two more days the third, then shortly the fourth. One egg was lost or destroyed. The first two hatched out about July 10, and were soon joined by the other two. Nineteen days later they left the nest. After that, some of them came and went at random. Some nights no birds were in the shaft. On August 17 the parent birds were back on the wall of this shaft, but after that date they were not found together again for the season. Twelve days later no. 4 was trapped from shaft Q 2 on the Administration Building with 11 other birds. Its mate was not there although there were several nesting birds of that season present, including no. 1 with its mate no. 6 as mentioned earlier.

On May 3, 1949, no. 4 returned to E 6 with the mate of the previous year. While at first they were not entirely congenial, often perched a short distance away from each other rather than side by side as usual, they did nest together for another season, starting the nest on June 1. Five days later the first egg was laid, followed by another the next day. Altogether five eggs were laid, but one was lost, probably because of overcrowding. The first one hatched about June 30. All were hatched by July 2.

Thus we see Swift no. 4 has had four mates in six years time and has nested in two different air shafts. One of its former mates is still nesting on the same roof; another one returned for two years to nest after leaving no. 4, mating again with no. 4, but then shortly abandoning her the same season in 1947; one disappeared after mating with her for a single season; and one is still mated with her for the second year.

No. 4 is one of the most difficult Swifts to trap. She is always reluctant to leave the air shaft and enter the trap. Often the trap must remain on for at least two days before she leaves. When captured she is extremely nervous and excitable, always struggling to get free. Most of the Swifts are placid once they are taken in the hand and held on their backs. No. 4, however, has had a very turbulent life for the past several years. Whether that has been because of her nervous temperament or whether she is nervous because of her experiences over the past few years cannot be stated.

Soon the Chimney Swifts will be leaving us for another year. Perhaps our two selected birds will return again in 1950 and continue their diary as they proceed through the annual cycle of reproduction. If not, others surely will, and their diary will continue the fascinating study of nesting Chimney Swifts.

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