

NESTING OF A RED-PHASED PAIR OF SCREECH OWLS
IN CENTRAL OKLAHOMA

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From 24 March through 19 May 1967, we observed a pair of red-phased Screech Owls (*Otus asio*) that nested close to the H. S. Cooksey residence at 909 Morningside Drive in Norman, Cleveland County, central Oklahoma. The fact that both birds were red-phased was arresting for, according to data filed at the University of Oklahoma Bird Range, no red-red pair had ever been reported from



SCREECH OWL, RED PHASE

This individual roosted all day during the spring and early summer of 1969 about 20 feet up on the same branch in a certain elm on the University of Oklahoma campus, though very few persons saw it. Photographed on 11 May 1969 by James R. Purdue.

Oklahoma. Of the 51 adult Screech Owl specimens then housed at the Bird Range—a series collected wholly without bias for phase—only 16 were red, a ratio strongly suggesting that selection had been favoring the gray phase, hence presumably that red-red pairings had been infrequent. D. F. Owen, who examined 1,778 specimens in his study of "polymorphism in the Screech Owl of eastern North America" (1963, *Wilson Bull.*, 75: 183-190), reported that of 24 specimens from Douglas County, northeastern Kansas, 11 were gray, six red, and seven "intermediate"; the map in this paper showing "relative frequency (per cent) of rufous Screech Owls in North America" indicates that about one third of the Oklahoma specimens handled by Owen were red. Worth stressing in this connection is the fact that the red phase almost wholly disappears to the northwestward in Oklahoma: the only specimens at hand from northwestern Oklahoma (nine from Woods, Texas, and Cimarron counties) are all gray with the exception of one pale individual from Texas County—an "intermediate" that has been called "¼ red phase" by J. T. Marshall Jr. (Sutton, 1967, *Oklahoma birds*, p. 255).

The nest-box used by the red-red Norman pair was made of cedar. Intended for Yellow-shafted Flickers (*Colaptes auratus*), it had been hung in a hackberry tree 8 feet from the house and about 12 feet above ground early in the spring of 1966. A Fox Squirrel (*Sciurus niger*) had used it that spring and summer. In the fall we had cleaned it thoroughly, removing all the leaf-litter the squirrel had brought in.

We do not know just when the Screech Owls laid claim to the box in the spring of 1967, but the Cookseys saw one owl at the entrance hole at 18:00 on 16 March, two owls near the bird-bath at 18:45 on 18 March, and one owl at the box-entrance and another near the box at 18:30 on 21 March. On 23 March they saw one owl leaving the box at 19:05. On 24 March they saw one owl go into the box at 17:57, the other at 18:10, and that same evening they saw one owl leave at 19:03, the other at 19:30. Shortly thereafter Cooksey examined the nest-box, finding three eggs in it. While he was descending the ladder, one owl came back and watched him. Soon after he withdrew, that owl went into the box. On 25 March three eggs and both adult owls were in the box. We did not check the box again until 14 April, on which date one bird was incubating the completed clutch of five eggs. On 17 April the box contained one brooding adult, three small chicks, two eggs, and two headless Cedar Waxwings (*Bombycilla cedrorum*). On 18 April one parent owl, four chicks, and one egg were in the box; on 19 April, one parent owl and five chicks. Each time we checked the nest we had to lift the brooding parent from the eggs or chicks. If we assume that an egg was laid every other day (see Sherman, 1911, *Auk*, 28: 157), the last egg of the clutch was laid on 29 March and the incubation period for that egg was about 22 days.

On each of our daily visits between 17 April and 2 May we found one parent owl brooding. This bird we believed to be the female, for it was conspicuously the

larger of the pair. On 30 April Paul F. Nighswonger banded it (515-35307). From 30 April to 2 May the brooding bird in the nest-box was this banded female. Nighswonger banded all five of the owlets on 2 May (515-35308 to -312). On 3 May we did not check the nest-box; on 4 May we checked the box, finding no parent owl there; on 5 May we did not check the box; on 6 May the banded adult female was there, as usual. Between 6 and 15 May we did not find an adult owl of either sex in the box on any of our daily visits.

The fledged young left the nest during a four- or five-day period. One must have left late in the day on 15 May or early the following morning, for at noon on 16 May only four owlets were in the box. On 17 May three young were in the box and another in a tree not far away. On 18 May, at 22:00, one chick was in the box. At 07:00 on 19 May the box was empty.

Behavior.—We heard bill-clacking from one or more of the young owls when we opened the nest-box on 4 May, 15 days after the hatching of the last egg. From this one observation we could not be sure, of course, that owlets under 15 days of age are incapable of expressing surprise, alarm, or hostility through bill-clacking. On 12 May (23 days after hatching of the last egg), while we were replacing one of the brood, its four siblings cowered in a corner of the nest-box, giving a call that reminded us of the whining of a dog. This whining, which was audible up to 5 feet from the nest-box, stopped when we lifted the lid of the nest-box but was resumed when we placed a hand over the opened box. On 12 May we observed talon-grasping by the young owls for the first time. The owlets flopped over onto their backs with feet up, ready to strike. Each bird grasped a finger hard enough to cause pain but not to draw blood.

On 12 May the parent owls were decidedly hostile toward us — an attitude that continued until the young left the nest-box. The smaller parent, assumed to be the male, was the more aggressive. On 15 May this smaller bird, which was perched on a limb close to the nest-box as we walked toward it, swooped at us repeatedly when we started climbing the step-ladder. As it attacked it gave a cry that reminded us of the *quirt* of a startled turkey. We heard this call again on 17 May, when one of the parent owls attacked us, but we were never sure that both the male and female owl gave it.

On the morning of 16 May, the male owl swooped at us viciously, but the female, perched in a tree not far away, did not attack. Later that day, both parents fiercely attacked Comer while he was climbing after one of the young owls that had flown from the nest-box to a tree not far away. The male attacked first, hitting Comer on the side of the head with clenched claws. The female swooped close, but did not strike. When Comer checked the nest-box again on 18 May, the male parent struck again.

Food.—As stated above, we found two decapitated Cedar Waxwings in the nest-box on 17 April. Most of the tail feathers had been plucked from the carcasses.

The remains of one waxwing were in the nest-box the following day, and there were waxwing feathers in the nest-box on 19 and 20 April, but we had no way of ascertaining how many kills these represented.

On 21 April the remains of two adult House Sparrows (*Passer domesticus*)—a male and a female—were in the nest-box. On 22 April we found a partly eaten young House Sparrow on the ground under the nest-tree. On 23 April we found an adult male House Sparrow in the nest-box. On 26 April another adult male House Sparrow was in the nest-box. On 27 April an adult male House Sparrow was in the nest-box and the remains of a freshly killed young House Sparrow were on the ground under the nest-box. From 28 April to 12 May we found no food remains in the nest-box. On 12 May a young House Sparrow was in the nest-box.

Small passerine birds were obviously an important part of the diet of the growing brood. We found no trace of mammalian food. Cooksey and his wife Hazel observed the owls capturing and carrying insects (principally moths and beetles) to the nest-box, which was close to a window. Observing through this window, evening after evening, the Cookseys ascertained that food brought in before dark invariably was insects, so capture of birds must have taken place after dark. On one occasion Cooksey took to the nest-box several June beetles (*Phyllophaga* sp.) that had killed or crippled themselves flying into lighted windows. One of the owlets, on its back with mouth open, took a beetle, nibbled at it as if to make certain that food brought in this unusual way was acceptable, and swallowed it. At no time did the Cookseys observe the owls capturing insects midair—behavior observed in West Virginia by Sutton (1929, *Auk*, 46: 545-46) and in Iowa by Errington (1932, *Wilson Bull.*, 44: 216).

Availability of food doubtless determined to a large extent what the parent owls brought to their young. Cedar Waxwings were abundant in Norman throughout April and May of 1967. During the fledging period of the brood, many House Sparrows came regularly to a feeder in the Cooksey yard and some of these probably roosted in the vicinity.

Growth and Development.—At hatching, the owlets were covered with white down and their eyes were closed. From 17 to 19 April all five appeared to be about the same size and they did not increase in size perceptibly during that two-day period. By 25 April (when the youngest was about a week old) all five were much larger (no weights were recorded); each had narrowly opened eyes; there was a noticeable size-difference *inter se*: and the largest had reddish feathers pushing through the down. Oddly enough, the only chicks still having an egg-tooth on 25 April were the largest and the smallest.

By 1 May all five owlets looked more or less reddish. The youngest, which was also the grayest, was now about 11 days old. On 8 May we again carefully examined all of the owlets, two of which were definitely red-phased and the other three more or less red. On 10 May one of the owlets was poking its head out of

the entrance to the nest-box and the unbanded male parent was perched on a limb beside the nest-box.

On 12 May all of the owlets were poking their heads out of the nest-box entrance and two of them shoved themselves over half-way out. The interior of the box was crawling with mites. We removed all five owlets (and a House Sparrow that had been brought as prey) and dusted the interior thoroughly with a mixture of nicotine and sulphur powders. The male parent watched us while we were dusting the box and flew at us repeatedly while we were returning the brood to the box, only to be chased off by a Blue Jay (*Cyanocitta cristata*). We found no more mites in the nest-box after the dusting.

A puzzling observation on 12 May deserves mention: the owlet that we had considered the largest of the brood on 8 May appeared to be the smallest on 12 May. This chick, which remained the smallest and was the last to fledge, may have suffered from the mite infestation more than its siblings did or it could have been the only male.

During the following winter at least one red-phased Screech Owl regularly spent the day in a tree cavity along the edge of the Lincoln School grounds about 225 yards from the nest-box in the Cooksey yard. Here a red-phased bird was photographed on or about 27 January 1968 (the photograph appeared in The Norman Transcript on 28 January), and here a red-phased pair, quite possibly the "Cooksey pair," nested. On 16 May the male parent was killed by some boys. The specimen, obtained by one of the teachers, was sent to George M. Sutton, who prepared it as a skin (UOMZ 6263). The female parent, crippled about that time, perhaps by the same boys, had a band on its leg: it was the very bird that had been banded at the Cooksey nest-box on 30 April 1967. This crippled female and her brood of three chicks all died in captivity about 20 May.

Not one of the brood of five banded on 2 May 1967 has been recovered.

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GENERAL NOTES

Double-crested Cormorants with head-plumes sighted along south shore of Lake Texoma.—On 13 April 1972, on the Hagerman National Wildlife Refuge in Grayson County, northeastern Texas, I saw two Double-crested Cormorants (*Phalacrocorax auritus*) with fully developed head-plumes. They were the only crested individuals of the 19 Double-crested Cormorants that were perching that day on exposed stumps above water, well out from shore. The four persons who were with me all had a good look at the crested birds. We saw no Olivaceous Cormorant (*P. olivaceus*) in the area.

These ornamental plumes are worn for only a short time in spring. Of the several Double-crested Cormorant specimens in the University of Oklahoma collection only one has plumes—a female (UOMZ 3698) collected 2 miles east of Jet, Alfalfa County, north-central Oklahoma, on 25 April 1959. George