

**DICHROMATISM OF THE SCREECH OWL
IN CENTRAL OKLAHOMA**

BY GEORGE M. SUTTON

About noon on a fine day in late April of 1969, I happened to see a red-phased Screech Owl (*Otus asio*) perched on a horizontal branch about 20 feet up in a large elm on the university campus in Norman, Cleveland County, central Oklahoma. The slightly comical ball of feathers was several feet out from the tree's trunk, directly above a narrow stretch of bare ground between a much-used sidewalk and a much-used street. All in all, the spot was ill-chosen for any owl's privacy, I thought, to say nothing of the bird's safety.

I sincerely wondered how I happened to see the owl at all. I had not been looking for it. No fussy mob of little birds had drawn my attention to it. It and its perch were only slightly hidden by twigs and leaves. Checking this particular point, I moved about under the owl, ascertaining that from only one or two angles was it quite invisible. Nor did it look much like a dead stub sticking up from the branch. There it sat, the embodiment of imperturbability and composure. It was full grown. Its eyes were so nearly closed that they were mere slits. What kept it from being conspicuous was its utter motionlessness — that and its somewhat barklike color pattern.

I said nothing to anyone about the owl that day, for I did not want it to be



YOUNG EASTERN SCREECH-OWLS

Photo taken during May 1960 in Fletcher, Comanche County, Oklahoma, by Lee Ridgway.

harmed. I did not expect to see it again, for I guessed that it had been ousted temporarily from its favorite hollow stub, perhaps by a squirrel, and that it would return to its stub early next morning. About noon the following day, however, I found the owl again on precisely the same branch, facing in the same direction (northeast), with the plumage of its underparts so fluffed that I could not see its feet. This time, after allowing the hubbub of passing students and automobiles to subside, I tried a bit of "squeaking." The owl heard me, for it turned its head slowly and opened its eyes a little as it looked in my direction.

Day after day, for more than a week, I found the owl at this same spot. On 11 May, I showed it to James R. Purdue, a graduate student, who photographed it several times that day (see Bull. Oklahoma Orn. Soc., 1973, Vol. 6, p. 1).

I knew that Screech Owls nested on or near the campus, for I had found recently fledged owlets there on several occasions. Most adult birds that I had seen in and near Norman had been gray-phased, yet here, almost as if advertising itself, was a red-phased one whose failure to roost in a cavity puzzled me. For years I had considered gray-phased birds more protectively colored than red-phased ones. Indeed, whenever I had thought about the matter, I had been unable to understand how the process of evolution could eventuate in an adult plumage with colors and patterns that differed as strikingly as those of red-phased Screech Owls did from those of gray-phased birds. What was the point of evolution if it resulted in such disparity? Could the two color phases be equally serviceable, equally protective? Might the co-existence of the two phases actually be part of the Screech Owl's "survival of the fittest"?

An important fact that had influenced my thinking was this: *Otus asio* was not by any means strictly nocturnal; it loved to sun-bathe. In the eastern United States — the area throughout which it was two-phased — sun-bathing red-phased birds had, in my opinion, been much easier to see than gray-phased ones. In West Virginia, one gray-phased bird that I had watched day after day had so filled the entrance to the small cavity in which it roosted that when it sat there sun-bathing I had difficulty seeing it at all. So much like the gray bark was the gray bird that for all I could see of the cavity's entrance, there was none.

The series of 77 adult Oklahoma Screech Owl skins in the University of Oklahoma bird collection has accumulated without anyone's attempt to obtain one phase or the other. Most of the specimens have been found dead along streets and highways — victims of traffic. Fifty-two of them are gray, 25 red. A few of them — gray birds with a brownish tinge on the upperparts — might be called "intermediates." Two pale birds that appear to me to be intermediate are both from Texas County in the Panhandle, and these are the only specimens from that county. All specimens from farther west, in Cimarron County, are decidedly gray and heavily marked. No wholly red individual in the series is from the area north of Roger Mills County and west of Payne County. Of the 41 adult specimens from central Oklahoma (Cleveland, Oklahoma, McClain, Canadian, and Grady counties), 24 are gray, 17 red.

The series before me strongly suggests that gray birds are about twice as common as red ones throughout the part of Oklahoma in which both phases occur. One can but wonder whether the red phase is disappearing. Why should

the Screech Owls of northwestern Oklahoma all be gray? Are forces operating there harder on red birds than on gray ones? Did red birds formerly occur there? Is the Screech Owl of the Black Mesa country actually *Otus asio*, or is it another species? The question is not idle. The vocalizations of Screech Owls in that part of Oklahoma call to mind a "bouncing ball." Never have I heard there the quavering whistle that I have so often heard in Norman.*

The dichromatism of *Otus asio* in central Oklahoma has been of special interest to me since 1967, for that spring a red-red pair nested in a birdbox in Harold S. Cooksey's yard in Norman — the first "all red" pair on record for the state, so far as I could ascertain. The female of the pair was banded on 30 April. Of the brood of five, two were "definitely red-phased" and the other three were thought to be "more or less red." All five young were banded. During the following spring the banded adult was the female of a red-red pair that nested on the Lincoln School grounds about 225 yards from the Cooksey birdbox. That pair and their brood of three (color phase uncertain) all came to grief (Comer and Cooksey, 1973, Bull. Oklahoma Orn. Soc., 6:1-5).

Winter after winter during and since that of 1974-75, a Screech Owl has passed the day in a cavity of an old maple across the street from my house in Norman. The species has not nested there, nor has it roosted there in summer, but winter after winter until recently the bird that has been there has invariably been gray, and on most bright, calm days I have seen it sun-bathing. I have made no attempt to capture it for banding. It may not have been the same bird right along, of course. On 17 February 1975, Tom Blevins photographed it for the Norman Transcript. From 18 December 1978 to 30 January 1979 I saw it virtually every day. On 23 December 1978, Orville O. Rice, of Topeka, Kansas, photographed it. In February of 1979 some boys found a gray bird, mortally crippled by traffic, in the street about 300 yards from the old maple. For several days about that time I saw no owl at the cavity, so assumed that the one I had been seeing there was the one that had been struck by the car. In the late fall of 1979, a gray bird roosted there regularly.

In early January of 1980, I saw no owl at the cavity for several days running. On the 9th and 10th, however, an owl was there, and *for the first time it was red*. Stephen Sisney photographed it for the Transcript. For me it was much more conspicuous than any gray bird had been. This was only my opinion, of course, but the opinion lent weight to my belief that if the red phase is disappearing in Oklahoma it may be because the red birds here are more frequently the victims of predation than gray birds. The Great Horned Owl (*Bubo virginianus*), a common and somewhat diurnal predator in Oklahoma, is quite capable of catching Screech Owls, and sun-bathing red-phased Screech Owls might be easier than gray birds for the big owls to see.

In his thoughtful paper on "Polymorphism in the Screech Owl of eastern North America," D. F. Owen (1963, Wilson Bull., 75:188) explains the absence of red-phased birds from western North America as "probably the result of environmental factors which prevent its establishment there." Owen obviously

*Since this writing, the Western Screech-Owl (*Otus kennicottii*) has indeed been recognized as a distinct species in the sixth edition of the American Ornithologists' Union Check-list of North American birds (1963). Its range in Oklahoma appears to be restricted to northwestern Cimarron County (Grzybowski, J. A., Bull. Oklahoma Orn. Soc. 16:17-20, 1963).

believes that the existence today of both red and gray phases in eastern North America [including much of Oklahoma] "is indicative of selection for bimodal variation" — in other words, that *Otus asio* survives throughout a vast part of North America not in spite of its two color phases, but because of them. In a more recent paper, James A. Mosher and Charles J. Henry (1976, *Auk*, 93:614-619) present data indicating that red-phased birds survive severe winter weather less successfully than gray-phased birds as a result of "color-related metabolism differences" in their makeup. This would suggest that during the unusually severe winters of 1977-78 and 1978-79 in Oklahoma more red birds than gray perished here as a result of exceptionally low air temperatures and heavy snowfall. I have no data in support of such a concept. Of the eight Screech Owls found dead during those winters in central Oklahoma (and preserved as skins or skeletons in the University of Oklahoma collection), six were gray, and two red. Seven of them, including both red ones, were victims of road traffic. One gray bird may have died of starvation. It was found, barely alive, clinging to the end of a juniper branch not far above ground in a residential part of Norman on 25 January 1978. A series of ten Screech Owls found dead on highways in southern Oklahoma by John Sandidge (four from Bryan County, four from Carter County, one from Pushmataha County, one from Marshall County) in the fall and winter between 20 February 1976 and 12 March 1978, contained two red-phased birds.

(Deceased), NORMAN, OKLAHOMA 73069, 9 MARCH 1980.

Ed. Note — Some of the above information was alluded to in Dr. Sutton's popular account of these species in his recently published book, *Birds Worth Watching* (Univ. Oklahoma Press, Norman, pp. 76-79, 1986).

GENERAL NOTES

Barnacle Goose in Caddo County, Oklahoma,—About 450 yds (400 m) southwest of my home 4¼ miles (6.8 km) northeast of Anadarko, Caddo County, Oklahoma, lies a pond surrounded by a field of winter wheat. The pond, probably less than 12 in. (30 cm) deep, covers approximately 10 acres (4.5 ha).

At 0650 on 20 November 1985 (clear, bright, 27°F), I noticed 50 or 60 Canada Geese (*Branta canadensis*) loitering near the pond. At 0720, I set up my 32× telescope and studied them closely. Among the Canadas was a strange goose with such a distinctive black and white pattern that it immediately caught my attention. Having formerly been a game biologist for several years with the Oklahoma Department of Wildlife Conservation, I was familiar with North American waterfowl to be expected in Oklahoma, but this one was certainly not among them. Although it was the size of one of the smaller races of Canada Goose, both its chest and neck were black (only the neck is dark in *B. canadensis*). A sharp vertical line of contrast was created where the black lower chest interfaced with the white of the belly. The dorsum, too, was dark. Most striking of all was the brilliant white head — including throat, cheeks and forehead — that stood out vividly from the bird's black neck and crown. In addition, I could tell that the eye color was light, possibly yellow.

At 0741, the entire flock flew off to the west. I hastily consulted a field