

ORIOLE HYBRIDIZATION IN OKLAHOMA

BY GEORGE MIKSCH SUTTON

ABOUT the turn of the century J. A. Allen collected in western Kansas adult male specimens of Baltimore Oriole (*Icterus galbula*) so different from a series of 20 adult male spring Baltimore Orioles taken at Carlisle, Pennsylvania, that he believed the Kansas birds to be of a "race peculiar to the plains;" in these Kansas birds the middle wing coverts were "pure white" and the bills were noticeably slender (Baird, Brewer and Ridgway, 1905: 195, 196). Allen did not, so far as I know, describe a plains race of *Icterus galbula*.

In 1936 and 1937 my co-workers and I collected many puzzling adult orioles in western Oklahoma—"oddly plumaged" birds that were, in my expressed opinion, hybrids between the Baltimore Oriole and the Bullock's Oriole (*I. bullockii*); the colored illustration accompanying my report showed what I considered to be an adult male "pure" *galbula* at the top, an adult male "pure" *bullockii* at the bottom, and four adult male hybrids in between (Sutton, 1938). From 1954 through 1957 a great many hybrid oriole specimens were collected during the breeding season in the Great Plains (from South Dakota southward into southwestern Kansas and western Oklahoma) by Lester L. Short Jr., *et al.*; a paper reporting on these appeared a few years ago (Sibley and Short, 1964).

Since the fall of 1952, when I moved to Oklahoma, I have given the phenomenon of oriole hybridization in this state much attention. As specimens and data have accumulated, I have come to feel that a map showing what is known would be helpful. Such a map, prepared with great care by John S. Weske, my Research Assistant, is presented here. The map is based solely on adult male specimens. Each symbol represents a specimen whose "pureness" or degree of hybridization is based on the "synoptic list of characters" given by Sibley and Short (1964: 133). A key overlay filed at the University of Oklahoma Bird Range indicates precisely which specimen has been symbolized, so that the analysis of hybrid characters can be checked by any interested person. Specimens used in making the map are from collections housed at the University of Oklahoma (66), at Cornell University, Ithaca, New York (28), and at East Central State College, in Ada, Oklahoma (2).

The map makes no attempt to show the exact localities at which specimens were taken in Cleveland, Ellis, and Cimarron counties. Most of the 14 Cleveland County specimens were taken at Norman, of the 22 Ellis County specimens at Arnett, of the 13 Cimarron County specimens along the Cimarron River 13 miles north of Boise City. It would, admittedly, have been possible to average Norman specimens and to place on the map one symbol for that average; but such a handling of the matter would not make clear how many specimens had been used in arriving at the average and, since the symbols needed to be large enough to be readily readable when reduced, they were drawn so large that close clustering or partial superimposing at one locality was not feasible. As the map stands, no symbol is placed outside the county in which the specimen it represents was taken.

Sibley and Short (*loc. cit.*) consider an adult male oriole with all-black head, narrow white wing-bar, orange-yellow lesser and middle secondary wing-coverts, and yellow outer tail feathers with "large, black rectangular or oval patches" at their bases to be true *galbula*; and an adult male oriole with black-and-orange head, broad white wing-patch (consisting chiefly of greater and middle secondary coverts), and yellow outer tail feathers with dark tipping to be true *bullockii*. According to these authors adult male *bullockii* has a broad, complete superciliary area of orange extending from the base of the bill to the end of the ear coverts; a narrow orange band |connecting the two superciliary areas| on the forehead; orange on the sides of the neck; orange ear coverts; and orange in the mandibular area separating the black of the throat-patch from the black loreal area. Described briefly, the head of their adult male "true" *bullockii* is orange except for the black of the crown, nape, hind-neck, line back of eye, lores, small mandibular patch, chin, and throat-patch.

As regards some of the details discussed in the paragraph above, opinion may differ. For example, I find it difficult to agree that a given male oriole must be called a hybrid when its only *galbula* character is narrow black edgings in the basal part of the outer webs of the outer tail feathers, or when its only *bullockii* character is dusky tipping on these same feathers. Be this as it may, Sibley and Short have given us their concept of true *galbula* and true *bullockii*, and the mathematical symbolization of Oklahoma specimens, as shown on the map, is based largely on this concept.

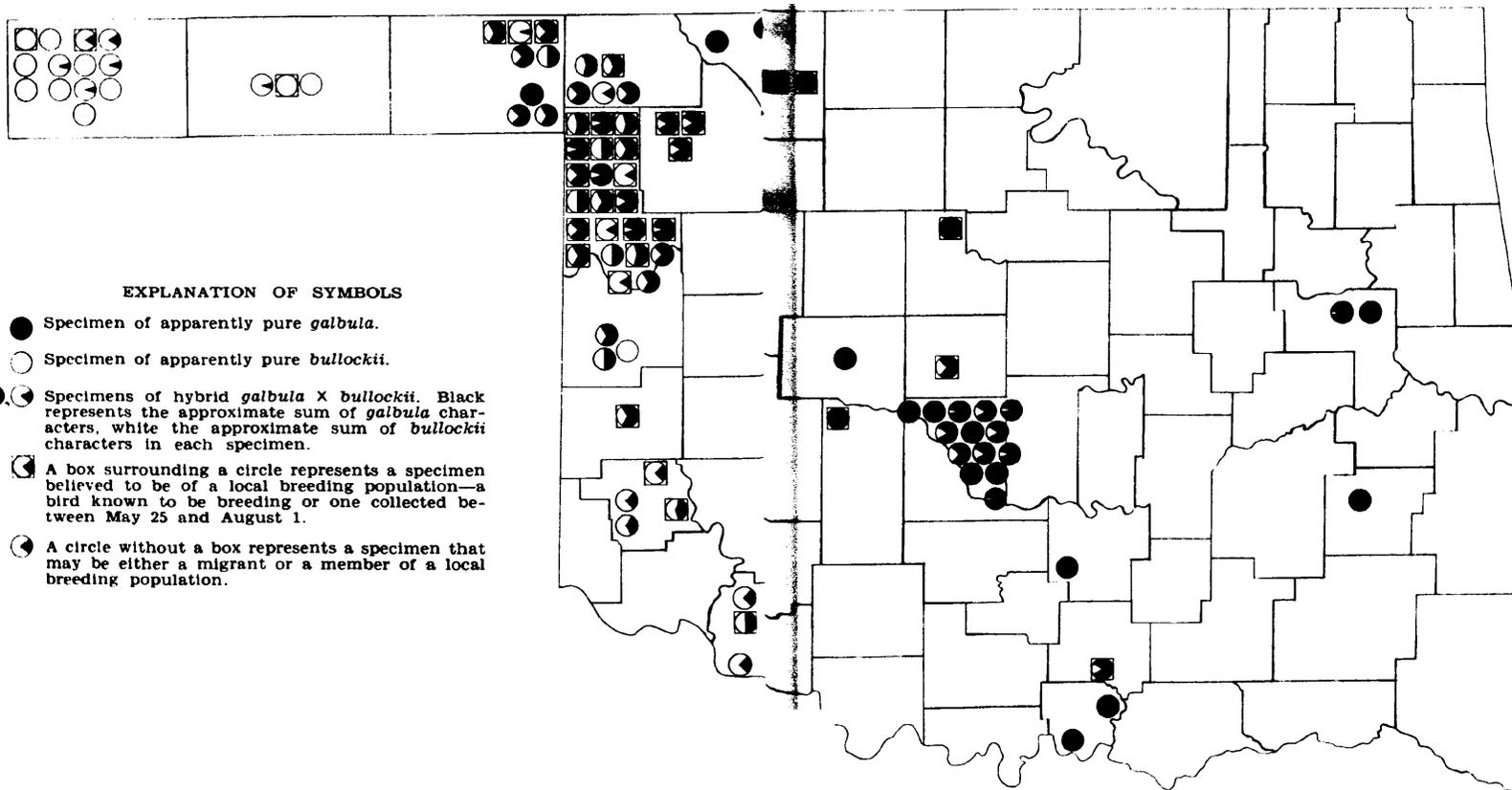
Errors in the Sibley and Short paper should be mentioned. The "narrow white bar" in the wing of true *galbula* is not on the "greater primary coverts" but on the greater *secondary* coverts, as I have stated above, and the orange-yellow coverts in the wing of true *galbula* are not "lesser primary coverts" but lesser and middle *secondary* coverts. The bold white wing-patch in true *bullockii* is composed of two sets of *secondary* coverts, the middle and the greater (Sibley and Short, 1964: 133). As for the lesser secondary coverts, these are yellow to

orange in true *galbula*, and a mixture of black and yellow or orange (occasionally almost solid black) in true *bullockii*. To ascertain the validity of this statement, I borrowed from the Museum of Vertebrate Zoology at the University of California ten fully adult male *bullockii*, all from California, where *bullockii* should be well beyond the influence of *galbula*. In nine of these ten specimens, the lesser secondary coverts are largely black; in one (from Inyo County, MVZ No. 28166) many of the lesser coverts are rich yellow; in every one of the ten some lesser coverts are yellow or yellow-orange basally and black distally.

In the map presented here, each symbol represents an attempt to evaluate and summarize certain head, wing, and tail characters, but no symbol that is neither all-black nor all-white tells precisely which characters determined the evaluation. Thus a hybrid with *bullockii*-head and *galbula*-tail achieves the same score (hence symbol) as a bird with *galbula*-head and *bullockii*-tail. A symbol half black and half white obviously represents a "fifty-fifty hybrid"—yet the six "fifty-fifty hybrids" among the 66 hybrids of the series do not resemble each other very closely. In one (UOMZ 5334) the head is almost wholly black, the greater secondary coverts are largely black, and the outer tail feathers have only a little black near the base and almost none at the tip; another (UOMZ 3633) has much orange on the head, a large white wing-patch, and a good deal of black on the proximal and distal parts of the outer tail feathers; another (GMS 7434) has much orange on the head, the greater secondary coverts are largely white, and the outer tail feathers are black-edged near their bases and dusky at the tips. In most of the 66 hybrid specimens the characters are considerably mixed—e.g., the head is black but it has some orange in it, the white wing-bar is broader than in true *galbula*, and the outer tail feathers are yellow but they have some black basally and some dusky tipping.

Careful study of the map shows (1) that only four pure *bullockii* have been collected in Oklahoma east of Cimarron County; (2) that three pure *galbula* have been taken as far west as Woods County and one as far west as Beaver County; (3) that of 14 specimens from Cleveland County five are pure *galbula*, and the other nine are hybrids, but the hybrids are considerably closer to *galbula* than to *bullockii*; and (4) that of 13 specimens from Cimarron County, eight are true *bullockii* and the five hybrids are considerably closer to *bullockii* than to *galbula*.

The dominance of *bullockii* in southwestern Oklahoma is worthy of note. In many ways the bird-life of that part of the state is similar to that of the Black Mesa country of northwestern Cimarron County. The Ladder-backed Woodpecker (*Dendrocopos scalaris*), a resident species, is about equally common in the two areas (Sutton, 1967: 317). The Canyon Wren (*Catherpes mexicanus*), another resident, is found in both areas, but this is largely because there are cliffs and rocky slopes in both areas. The Long-eared Owl (*Asio otus*) is known to nest in



MAP OF OKLAHOMA SHOWING APPROXIMATE LOCALITIES AT WHICH ADULT MALE ORIOLES, BULLOCK'S ORIOLES, AND HYBRIDS WERE COLLECTED

Cimarron County and a specimen with egg ready to lay has been taken in Harmon County (Sutton, 1967: 263). Several specimens of Downy Woodpecker (*Dendrocopos pubescens*) taken in Cimarron and Texas counties and one taken in Harmon County represent the montane race *D. p. leucurus*, or an approach to that form, a condition not found in other Downy Woodpeckers of the state (Sutton, 1967: 316).

I have restricted my study thus far largely to fully adult male orioles because the species characters are much more obvious in adult males than in subadult males or in female birds of any age. Admittedly there is some doubt as to the purity of any Baltimore or Bullock's oriole taken in Oklahoma, for interbreeding of the two species probably has been going on for a long time. It is to be noted, however, that R. Crompton Tate, a careful observer who lived in or near Kenton, Cimarron County, from 1894 to 1943, considered the Baltimore Oriole a "numerous summer resident" and the Bullock's Oriole a "common summer resident" there (Tate, 1923: 47), whereas no one has taken an adult male specimen of pure Baltimore Oriole anywhere in that area since 1943. This statement has validity (despite the possibility that what Mr. Tate identified as Baltimore Orioles were actually hybrids), for much observing and collecting has been carried on in Cimarron County during recent years. Quite possibly the Baltimore Oriole has been absorbed so completely in that part of Oklahoma as to be no longer extant there *as such*. Of the five hybrid specimens from Cimarron County, not one is close to being a "fifty-fifty" hybrid (see map).

The extent to which the Baltimore and Bullock's orioles interbreed in Oklahoma (and elsewhere in the Great Plains) is considered by some taxonomists to be proof of their conspecificity. The reasoning of these taxonomists is sound enough, but in my opinion calling the two species one merely begs the issue, for it does not explain why each breeds true throughout a vast area not inhabited by the other (see Sutton, 1967: 600).

The zone of hybridization in Oklahoma may widen or shift as the decades pass. A hundred years from now pure *galbula* may have disappeared completely from Cleveland County and pure *bullockii* from Cimarron County; the Baltimore and Bullock's orioles of the entire state may by that time conceivably have become a "hybrid swarm." It is important that conditions as they now exist be documented with precision.

Acknowledgements

I wish to thank John S. Weske for the excellent map; R. Crompton Tate, of Liberal, Kansas, for clarifying the period of his residency in Kenton, Oklahoma; and A. R. Weisbrod, Ned K. Johnson, and William A. Carter, for lending specimens respectively from Cornell University, the University of California, and East Central State College at Ada, Oklahoma.

LITERATURE CITED

BAIRD, S. F., T. M. BREWER, and R. RIDGWAY

1905 A history of North American birds, Vol. 2, 590 pp., 64 pls., 593
figs. Boston.

SIBLEY, C. G., and L. L. SHORT JR.

1964 Hybridization in the orioles of the Great Plains. *Condor*, 66: 130-
150, 3 figs.

SUTTON, G. M.

1938 Oddly plumaged orioles from western Oklahoma. *Auk*, 55: 1-6,
and frontispiece.

1967 Oklahoma Birds. 675 pp., 1 pl., 2 maps, many figs. Norman.

TATE, R. C.

1923 Some birds of the Oklahoma panhandle. *Oklahoma Acad. Sci.*
Proc., 3: 41-51.

DEPARTMENT OF ZOOLOGY, UNIVERSITY OF OKLAHOMA, NORMAN,
OKLAHOMA 73069.

CAPTURE OF A PRAIRIE CHICKEN BY A PRAIRIE FALCON

BY KARL F. JACOBS

ON FEBRUARY 12, 1957, while watching a drop-net set for Greater Prairie Chickens (*Tympanuchus cupido*) in a 20-acre alfalfa field 2 miles north and 1 mile east of Grainola, Osage County, Oklahoma, Robert Davis and I witnessed from a pickup truck the unsuccessful attempt of a prairie chicken to escape from a Prairie Falcon (*Falco mexicanus*).

At 5:15 that afternoon we happened to see two prairie chickens just above the horizon, both of them flying erratically. With the help of a 10-power binocular we perceived that they were fleeing from a Prairie Falcon about 200 yards back of them. Within an incredibly short time the falcon had closed the distance between itself and the chickens to a mere 20 yards. Now the chickens split up and flew at right angles to their original flight-line. The falcon turned right, into the sun, in hot pursuit of one bird. The chicken, beating its wings constantly and rapidly, decreased altitude from about 75 feet to about 10 feet. At this point—after we had watched the chicken and its pursuer fly about 400 yards—the two birds disappeared behind a rise in the terrain.

We drove the truck to within about 150 yards of the point at which we believed the falcon must have overtaken its prey. From this new position we could see the falcon on the ground, tearing at something with its beak.

Suddenly a gray adult male Marsh Hawk (*Circus hudsonius*) flew in and stooped at the falcon. The falcon ducked its head and threw up a wing in defense. The hawk flew off a way, turned, came back, and slashed at the falcon with open talons. The falcon flew up this time, battling first with the gray hawk, then with a brown Marsh Hawk that came in. The falcon attacked from below—with beak open and talons apparently clenched. Both Marsh Hawks kept their talons open most of the time while fighting. Two more brown Marsh Hawks came by to investigate, but they did not enter the fracas. Three times the falcon returned to the ground to guard its prey; but each time it alighted, one of the hawks came slashing at it and it was obliged to resume fighting in the air.

After about ten minutes of battling, the falcon flew off fifty yards or so, turned, and with a tremendous burst of speed came at the gray Marsh Hawk. The hawk attempted to outmaneuver its assailant, but was unsuccessful. The falcon dealt a sharp blow with clenched fist that threw the hawk off balance. The hawk made a last show of resistance by attempting to wing-whip the falcon. This having failed, the two hawks acknowledged their inability to dispossess the falcon; they flew off over the prairie, presumably in search of a more easily obtainable meal.

We drove to the spot at which the falcon had been tearing at its kill. There lay a hen prairie chicken. A three-inch patch of skin had been torn from the breast. We found no other external evidence of recent injury, but blood was flowing from the nostrils. On opening the body, which was still quite warm, we found blood clots in the heart and lungs. The heart appeared to have been bruised, but we found no puncture marks anywhere on the body and no recent wounds of any sort aside from the torn skin just mentioned.

There was, however, evidence of an old wound on the right side of the chest. Here a scab, which showed no sign of infection, covered a skin-area about half an inch wide and three-quarters of an inch long. Otherwise the chicken was in good flesh and fairly fat.

Although I have on many occasions observed a Marsh Hawk pursuing a prairie chicken, I have never seen one actually injure a chicken. On several occasions, too, I have watched a Golden Eagle (*Aquila chrysaetos*) chasing a prairie chicken. A healthy Greater Prairie Chicken appears to be perfectly capable of outflying either a Marsh Hawk or a Golden Eagle. The chickens obviously fear a Prairie Falcon, however, for the appearance of a falcon near by completely panics them.

OKLAHOMA DEPARTMENT OF WILDLIFE CONSERVATION, OKLAHOMA
CITY, OKLAHOMA 73105.

BIRDS TO BE LOOKED FOR IN THE BLACK MESA COUNTRY

BY JOHN S. WESKE

THE BLACK MESA country, in the far northwestern corner of Oklahoma, has received considerable attention from ornithologists. No bird student now lives in this part of the state, however. The nearest active observers, Adolph J. Krehbiel and his associates, live in Clayton, New Mexico, 40 miles south-southwest of Kenton, Oklahoma, and 11 miles from the nearest corner of the Oklahoma Panhandle. Mr. Krehbiel has kept records on the birds of Clayton for more than two decades. Several years ago he published a four-page check-list for the area. Although this list is not based on observations made in Oklahoma, it contains information of considerable interest and value to Oklahoma bird students.

To be noted is the fact that there are pronounced differences in habitat between Clayton and Kenton. The plains surrounding Clayton are largely treeless; rough country is confined to creek valleys, and there is no extensive pinyon-juniper woodland comparable to that found near Kenton. On the other hand, trees and gardens in Clayton provide a habitat not found in Oklahoma anywhere west of Boise City.

Mr. Krehbiel lists 15 species that have never, so far as I know, been seen in Oklahoma. Nine of these are on his "principal list." One of them, the Western Flycatcher (*Empidonax difficilis*), he considers an "occasional transient visitor." The following eight he considers "rare visitors": Spotted Owl (*Strix occidentalis*), Calliope Hummingbird (*Stellula calliope*), Coues's Flycatcher (*Contopus pertinax*), Violet-green Swallow (*Tachycineta thalassina*), Cactus Wren (*Campylorhynchus brunneicapillus*), Western Bluebird (*Sialia mexicana*), Hutton's Vireo (*Vireo huttoni*), and Grace's Warbler (*Dendroica graciae*). The following six "additional species" have been seen only once or twice in the region: Zone-tailed Hawk (*Buteo albonotatus*), Olivaceous Flycatcher (*Myiarchus tuberculifer*), Buff-breasted Flycatcher (*Empidonax fulvifrons*), Crissal Thrasher (*Toxostoma dorsale*), Hepatic Tanager (*Piranga flava*), and Black-chinned Sparrow (*Spizella atrogularis*). Two species—the Black Swift (*Cypseloides niger*) and Bendire's Thrasher (*Toxostoma bendirei*)—have been reported since the check-list was published.

The above-mentioned species should be kept in mind by bird students visiting the Black Mesa country in Oklahoma. Many of the 17 are indigenous to regions several hundred miles to the southwest of Oklahoma, however, and their occurrence in Oklahoma would be truly exceptional. The Calliope Hummingbird and Western Flycatcher have both been taken in southwestern Kansas within only a few miles of the Oklahoma state line (Sutton, 1967: 289, 346).

Letters to Mr. Krehbiel may be addressed thus: Box 518, Clayton, New Mexico 88415.

DEPARTMENT OF ZOOLOGY AND STOVALL MUSEUM, UNIVERSITY OF OKLAHOMA, NORMAN, OKLAHOMA 73069.

GENERAL NOTES

Whistling Swans wintering in central Oklahoma.—From January 25 to March 13, 1968, one pure white adult and 14 gray immature Whistling Swans (*Olor columbianus*) spent much of their time on Lake Elmer, a 63-acre impoundment in Kingfisher County, Oklahoma, 4½ mi. northwest of the city of Kingfisher. The swans flew about the impoundment each day; occasionally they visited a farm-pond known as Lankard's Lake, half a mile east of Lake Elmer. They did not, so far as I know, regularly feed in any winter wheat field in the vicinity.

When the swans ate crackers that I threw into the water for them, I decided to try feeding them regularly. Using yellow corn donated by Thomas Francis of Kingfisher and lettuce trimmings that I picked up at a market in Kingfisher, I fed the birds at five places—chiefly at a spot along the south shore west of the dam. I threw the corn into the water, where the birds "tipped" for it. They did not seem to care much for the lettuce. Occasionally I saw them pulling up and eating roots of cattail and smartweed. They must have obtained some food (mussels, snails, etc.), or perhaps gravel, from the bottom, for I often saw them "tipping" in areas where I had not scattered corn. During their stay they ate about 200 pounds of corn.

A photograph taken by Clifford King on January 29, 1968, shows six of the immature birds swimming in shallow water. This picture was reproduced as a halftone on the back cover of the March, 1968, issue of *Outdoor Oklahoma*. The "bill patch" referred to in the legend under the picture is light yellow in the adult Whistling Swan, not white, as stated; it does not become distinct, as a rule, before the gray plumage of immaturity has been replaced by the pure white plumage of adulthood, and it does not show in Mr. King's photograph. The total number of birds in the flock was not 17 (as stated in the legend) but 15, as stated above.

A few days before their departure—notably on March 10, when they were observed for some time by Grace E. Ray, Dr. Violet Sturgeon, Mrs. Warren T. Mayfield, Ruth Scott, and Katherine Kauffman, all of Norman, Oklahoma—they were obviously restless.—N. B. Dixon, *Ranger, Oklahoma Department of Wildlife Conservation, Box 378, Kingfisher, Oklahoma 73750*.

Spring arrival date for American Avocet in Oklahoma.—About 7 a.m. on March 16, 1968, I saw two American Avocets (*Recurvirostra americana*) wading in, and at the edge of, the stream below the dam of the main Salt Plains Reservoir in Great Salt Plains State Park, Alfalfa County, Oklahoma. The stream at this point is not very deep, although at times the avocets waded in water deep enough to conceal their legs. Across the stream from where I stood the shore consists of a fairly wide, flat, sandy strip, and there are sand bars in the stream itself. The avocets were apparently oblivious to the hundreds of gulls—mostly Ring-billed Gulls (*Larus delawarensis*)—that were calling and milling about up and down the stream. The earliest sighting on record for *Recurvirostra americana* in Oklahoma is March 23, 1959, when the species was seen on the Salt Plains National Wildlife Refuge, Alfalfa County, by C. L. Ward (see data on file at the University of Oklahoma Bird Range).—Emma Messerly, 344 S.E. *Elmhurst, Bartlesville, Oklahoma 74003*.

Early nesting of White-necked Raven in Oklahoma.—On April 21, 1968, about 15 ft. up in a middle-sized elm growing close to the main highway 15 mi. east of Boise City, Cimarron County, Oklahoma, John W. Huckabee and I found the nest of a pair of White-necked Ravens (*Corvus cryptoleucus*). Both birds were at the nest, which contained one egg. Just below the coarse foundational twigs of the big, neatly lined structure were the nest and six eggs of a pair of English Sparrows (*Passer domesticus*).

The earliest Oklahoma date on record for a White-necked Raven nest with complete clutch of eggs is May 5, 1958—a many-times-used nest made largely of wire on an old windmill near Rosston, Harper County (Sutton, 1967, *Oklahoma Birds*, p. 376). There were seven eggs in that nest, so the first egg of the clutch could have been laid as early as April 29.—Jack D. Tyler, *Department of Biology, Cameron State Agricultural College, Lawton, Oklahoma 73501*.

Canyon Wren in Woodward County, Oklahoma.—About 4 p.m. on March 16, 1968, while walking with my family along a trail to the Natural Bridge at Alabaster Caverns State Park, in Woodward County, Oklahoma, I heard scolding notes from a slightly overhanging ledge above me. On glancing up, I

discovered a Canyon Wren (*Catherpes mexicanus*), the whiteness of whose throat contrasted strikingly with the rich brown of its belly and sides. The wren scolded a moment, then began a methodical investigation of holes and small crevices on the face of the ledge. I was able to see it from many angles. It interrupted its investigation from time to time long enough to peer down and scold at us. *Catherpes mexicanus* has thus far been reported from Cimarron, Harmon, Jackson, Greer, Kiowa, Comanche, Caddo, Canadian, and Blaine counties, Oklahoma (Sutton, 1967, *Oklahoma Birds*, p. 415). It has not heretofore been reported from Woodward County.—Emma Messerly, 344 S.E. Elmhurst, Bartlesville, Oklahoma 74003.

OFFICERS OF THE OKLAHOMA ORNITHOLOGICAL SOCIETY,

April 15, 1968

President, Forrest S. Romero, 3730 South Yale, Tulsa, Oklahoma 74135

Vice President, Dr. Daniel A. Shorter, Biology Department, Northwestern State College, Alva, Oklahoma 73717

Secretary, Mrs. L. W. Ray, Rt. 1, Harrah, Oklahoma 73045

Treasurer, Miss Mossie Hassell, 2610 North Hudson, Oklahoma City, Oklahoma 73103

Acting Business Manager, R. L. Bosworth, 800 Sugar Maple, Ponca City, Oklahoma 74601

Corresponding Secretary, Mrs. H. L. Keating, 5213 South Toledo, Tulsa, Oklahoma 74135

Directors:

Miss Zella Moorman, Box 72, Mannford, Oklahoma 74044, Chairman Conservation Committee, term expires 1968

James L. Norman, 502 North 14th, Muskogee, Oklahoma 74401, Chairman Membership Committee, term expires 1968

Mr. and Mrs. Ivy Brown, 118 Sunset, Elk City, Oklahoma 73644, Chairmen Field Trips Committee, term expires 1969

Mr. and Mrs. Lyle Byfield, Wakita, Oklahoma 73771, Chairman Library Committee and Coordinators of Nest Records Card Program, term expires 1969

Mrs. S. R. Williams, 1205 East 10th Street, Okmulgee, Oklahoma 74447, Chairman Awards Committee, term expires 1970

Dr. George M. Sutton, George Lynn Cross Research Professor of Zoology, University of Oklahoma, Norman, Oklahoma 73069, term expires 1970, Chairman Special Projects Committee

Editor, Sophia C. Mery, 345 S.E. Boston Avenue, Bartlesville, Oklahoma 74002

Assistant Editor, Emma Messerly, 344 S.E. Elmhurst, Bartlesville, Oklahoma 74003