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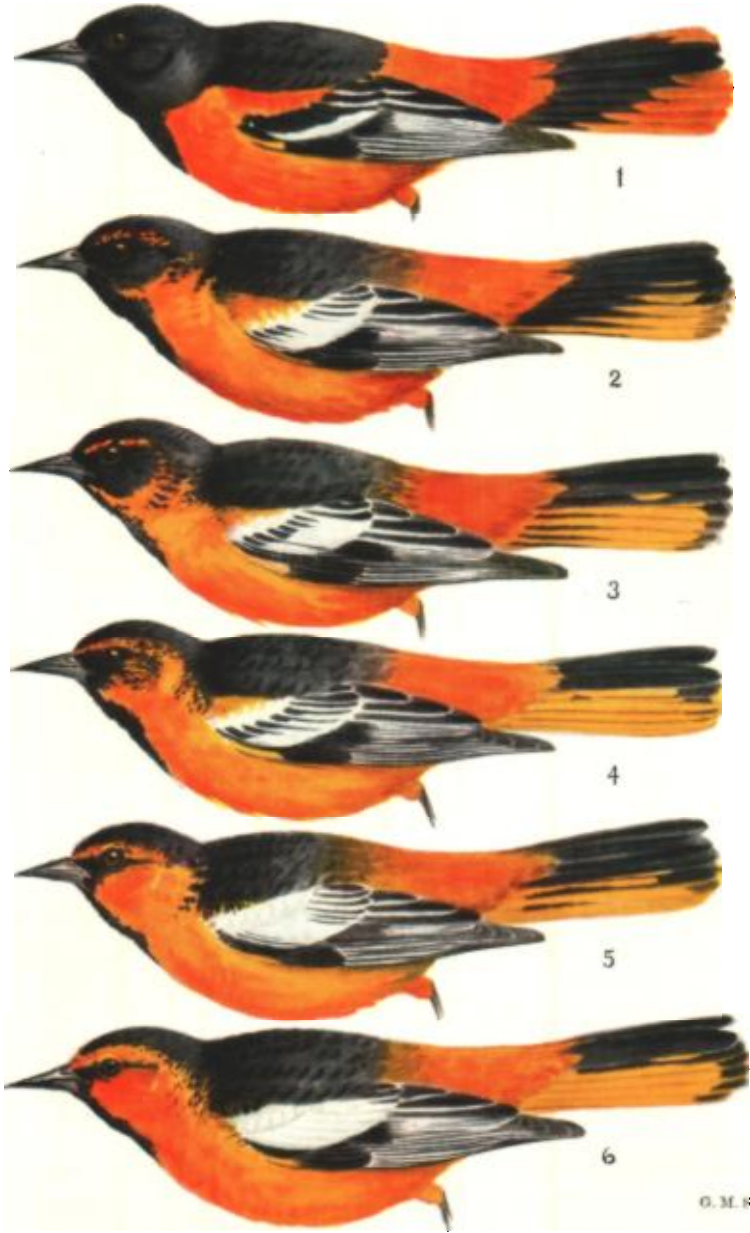
ODDLY PLUMAGED ORIOLES FROM WESTERN OKLAHOMA

BY GEORGE MIKSCH SUTTON

Plate 1

BAIRD, BREWER, and RIDGWAY ('A History of North American Birds,' vol. 2, pp. 195-196, 1905), discussing the plumage of the adult male Baltimore Oriole, *Icterus galbula* (Linnaeus), describe specimens from western Kansas that "have the middle wing-coverts pure white instead of deep orange"; specimens from Pennsylvania in which the middle coverts are "more or less white"; a specimen from Illinois whose "middle coverts, like the lesser, are pure plain orange," but whose head has "a distinct indication of an orange superciliary stripe"; a specimen from Nebraska in which the middle coverts are "pure white" and "the black throat-stripe is almost separated from the black of the cheeks by the extension forward of the orange on each side of it"; and a specimen from New Jersey in which the middle coverts are white "and the lesser wholly uniform black." Evidently considering white middle coverts, black lesser coverts, and orange head-markings to be something in the nature of individual variations, these authors make it clear that seven specimens from Pennsylvania which have white middle coverts "have invariably less intense colors than those with orange shoulders," while in Kansas specimens "the other colors are of the brightest character." They do not, however, concur with J. A. Allen (who collected the Kansas birds) in believing that such brightly colored western birds belong to "a race peculiar to the plains." A. C. Bent ('Summer Birds of Southwestern Saskatchewan,' Auk, vol. 25, p. 29, 1908), writing of birds encountered in southwestern Saskatchewan, expresses a belief that certain orioles he identified as *Icterus galbula* might have been abnormally plumaged Bullock's Orioles, *Icterus bullocki* (Swainson), and quotes Dr. Louis B. Bishop to the effect that a certain specimen which had "the malar region, auriculars and sides of head black and many feathers of sides of neck tipped with black," was "probably a hybrid with *galbula*."

During the spring of 1936 the writer collected a series of nine breeding male orioles in the vicinity of Arnett, Ellis County, Oklahoma. Seven of



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these he provisionally called Baltimore Orioles, two he called Bullock's Orioles; but, realizing that not a single bird of the nine was quite normal in color, he was dissatisfied with this identification. Wondering if these oddly colored birds could be hybrids, he showed them to his friend, Mr. John B. Semple, who graciously offered to assist in procuring more specimens through sponsoring an ornithological survey of Oklahoma during the spring of 1937. The four members of this expedition, Mr. Semple, Karl W. Haller, Leo A. Luttringer, Jr., and the writer, centered their attention upon Baltimore and Bullock's Orioles while in the western part of the State, and collected a series of twenty breeding specimens. These twenty birds, together with ten collected in 1936 (the nine above-mentioned Ellis County birds together with a single *bullocki* taken in Cimarron County), present an interesting picture to the taxonomist. Twenty-one of the thirty are fully adult males in handsome, bright plumage. Seven are breeding males in what usually is called 'subadult' or 'first breeding' plumage. Only two are females. Most of the thirty birds are, of course, from Ellis County, not far from the Texas State Line; seven are from Roger Mills County, the county just south of Ellis; two are from the vicinity of Gate, Beaver County, at the eastern edge of the Panhandle; three are from Cimarron County, only a mile or so from the New Mexico State Line; and one is from Logan County, in the central part of the State. The three fully adult males from Cimarron County are *bullocki*. The single male from Logan County is brightly plumaged *galbula*. But the other twenty-six birds, the two females included, present such a strange mixture of *galbula* and *bullocki* characters that the writer finds it quite impossible to identify many of them.

Typical adult male *bullocki* and typical adult male *galbula* are strikingly different. The head of *bullocki* is boldly marked with yellow-orange; that of *galbula* is black. The wing of *bullocki* has a large white patch composed of the wholly white middle coverts and largely white greater coverts; that of *galbula* has a single white bar. The tail of *bullocki* is largely yellow, with black middle feathers; that of *galbula* is largely black, with yellow, or yellow-orange, corners. An important character, which often is overlooked, is the color of the lesser coverts. In *bullocki* most of these are black, in sharp contrast to the white of the middle and greater coverts; in *galbula* they are orange. This means that flying *galbula* is almost as distinctly 'epauletted' as a male Red-winged Blackbird, *Agelaius phoeniceus* (Linnaeus).

Adult female *bullocki* often resemble adult female *galbula*, but tend to be larger, grayer (less yellow or orange-yellow) on the belly, less brightly colored above, and lighter, if not actually more colorful, about the face. Adult female *galbula* usually have more or less extensive black facial markings. The face of female *bullocki* practically never is so marked, though the throat often is black.

The appearance of six specimens in our series of twenty-one fully adult males is shown in the colored plate¹:

Figure 1 represents a specimen (GMS 7539) collected near Mulhall, Logan County, June 3, 1937, which the writer has identified as *galbula*. Figure 2 represents a specimen (KWH 371) collected near Cheyenne, Roger Mills County, May 14, 1937. In arranging the series so as to show transition from *galbula*- to *bullocki*-type of coloration, the writer placed ten specimens between those represented by Figures 1 and 2; but of these ten, four have a certain number of black lesser coverts, as do *bullocki*; in eight of the ten, orange-yellow invades the black of the head and neck; and in six of the ten, the white of the middle and greater coverts is far too extensive for normal *galbula*. Figure 3 portrays a specimen (GMS 7434) collected near Gate, Beaver County, on May 18, 1937. Only one specimen of our series is intermediate between those represented by Figures 2 and 3. Figure 4 shows a bird (GMS 7358) collected near Cheyenne, Roger Mills County, May 10, 1937. Figure 5 shows a bird (GMS 6905) collected at Arnett, Ellis County, June 10, 1936. The specimens represented by Figures 3, 4 and 5, lie side by side in our series. Figure 6 shows typical *bullocki*. Though a certain specimen (GMS 6872, Kenton, June 3, 1936) was chosen by the writer as a model, all three of the Cimarron County birds have this appearance. Specimens like *bullocki*, from Ellis County (KWH 403) and Roger Mills County (GMS 7393), lie between the birds represented by Figures 5 and 6 in our series; in both of these the lesser coverts are mixed black and yellow, there is a considerable amount of black in the outer rectrices, and the greater coverts have too much black in them for typical *bullocki*.

Most of the seventeen specimens that are neither typical *galbula* nor typical *bullocki* are definitely too large for *galbula*. The largest measures: wing, 103 mm.; tail, 83; the smallest: wing, 97 mm.; tail, 76; the series averages: wing, 99 mm.; tail, 81. Curiously enough, both the largest and the smallest birds of the series are of *bullocki* type of coloration. According to Ridgway ('Birds of North and Middle America,' vol. 2, p. 311, 1902), average male *galbula* measures: wing, 97 mm.; tail, 75.9.

SUBADULT MALES

Male *bullocki* and *galbula* in their first breeding plumage are known to vary so greatly that the writer feels it advisable to dismiss the seven subadult breeding specimens of the present series with a brief description. All seven of these birds were collected in Roger Mills and Ellis Counties, in the

¹ The writer wishes it understood that though considerable care was used in the preparation of the colored plate, no attempt was made to draw the figures *exactly* life-size or *exactly* to any scale.

very region in which fully adult males display the most confusing mixture of *galbula* and *bullocki* characters. One of the seven (GMS 6699) has strongly yellow underparts. All the others are gray-bellied. One (GMS 7396) has almost solidly black head and back, strongly yellow breast, and sharply white or light-gray belly. Every bird of the seven has a considerable amount of black about the head, especially on the throat.

ADULT FEMALES

Neither of the two adult females is readily identifiable, for both are too large for *galbula*, yet rather more like *galbula* than *bullocki* in color. One of them (GMS 7516) is far too bright about the face and too gray above for *galbula*, yet strikingly too deep a yellow throughout most of the underparts for *bullocki*. This bird measures: wing, 94 mm.; tail, 78. The other bird (GMS 7518) tends to have the black facial markings of *galbula*, but is altogether too gray, especially on the sides, belly, back and rump, for that species; it measures: wing, 93 mm.; tail, 77. Ridgway (loc. cit., p. 312) gives the following measurements for average female *galbula*: wing, 88.9 mm.; tail, 68.6.

The two females just described were collected *at their nests*, and their mates also were collected. The mate of the former bird bears a strong resemblance to typical *galbula* in that it has fairly bright, wholly orange epaulettes; but the orange-yellow of the breast invades the black of the neck much as in Figure 2 of our colored plate. The mate of the latter female also resembles Figure 2 of the colored plate; but its middle coverts are largely white, the three outer pairs of rectrices are largely yellow, and the yellow-orange of the breast invades the black of the neck as far as the auriculars.

RANGE OF *galbula* AND *bullocki* IN OKLAHOMA

Mrs. Margaret M. Nice, in her admirable 'Birds of Oklahoma' (Publ. Univ. of Oklahoma, Biol. Surv., vol. 3, p. 169, 1931), calls *Icterus bullocki* a "summer resident in southwestern and northwestern" parts, surmising from the scarcity of early records that the species has invaded Oklahoma within recent years. It is now to be found throughout the Panhandle wherever there is sufficient tree-growth; in the entire tier of counties bounded on the west by the Texas Panhandle, namely, Ellis, Roger Mills, Beckham, and Harmon; and probably in Jackson, Greer, and Kiowa Counties in the extreme southwestern corner of the State.

Mrs. Nice (loc. cit., p. 168) considers *I. galbula* a "summer resident in the northern half of the State," naming Beaver and Cimarron, but not Roger Mills and Ellis among the counties in which it "occasionally" nests. To the best of the writer's knowledge, no Cimarron County specimen of

galbula is actually extant today, though R. Crompton Tate (Proc. Oklahoma Acad. Sci., vol. 3, p. 47, 1923) certainly has recorded it there. The writer (Auk, vol. 53, p. 433, 1936) has recently called attention to the fact that *galbula* is "abundant" in Ellis County. He would have been more accurate had he called these Ellis County birds "*galbula*-like," rather than *galbula*.

DO *galbula* AND *bullocki* INTERBREED IN OKLAHOMA?

What are we to call these oddly colored, off-sized orioles? Are they hybrids? Obviously we have no right to affirm that they are hybrids so long as we have no definite knowledge of their parentage. Collecting the two mated pairs in Ellis County might have furnished proof of interbreeding had the male or female bird of either pair been indubitable *galbula* or *bullocki*. But they were not.

To call these birds that display 'mixed *galbula* and *bullocki* characters' an extremely variable western or 'plains' race of *galbula* (or, for that matter, an eastern race of *bullocki*) is wholly unjustifiable so long as there is a possibility that *galbula* and *bullocki* do interbreed, and until we know with certainty what *galbula* × *bullocki* hybrids look like. Here, then, is a fascinating problem for the geneticist, a problem the more complex because in both *galbula* and *bullocki* a fully adult plumage is not attained during the first breeding season.

In concluding, the writer wishes to repeat certain facts for the sake of emphasis, and to set down two highly significant additional facts:

1. But four of a series of thirty breeding orioles collected recently in Oklahoma are readily identifiable. One of these is *galbula*, from the central part of the State. Three are *bullocki* from the extreme western part of the State. The other twenty-six are not, precisely speaking, either *bullocki* or *galbula*.

2. Birds from this interlying region have much the appearance of hybrids between *bullocki* and *galbula*.

3. Both *Icterus galbula* and *I. bullocki* have invaded western Oklahoma within recent years, and neither species, presumably, has yet had opportunity to establish itself firmly.

4. The only oriole song readily recognizable to the writer in Ellis and Roger Mills Counties, Oklahoma, was that of the Orchard Oriole, *Icterus spurius* (Linnaeus). Songs given by Bullock's Orioles and Baltimore Orioles were 'hybrid songs.'

5. In parts of the very region in which these strange orioles were collected, the eastern Indigo Bunting, *Passerina cyanea* (Linnaeus), and western Lazuli Bunting, *Passerina amoena* (Say), were actually found to be interbreeding.

The author wishes to thank Mr. William Montagna for assistance in measuring the specimens described in this paper; and the authorities of the Carnegie Museum, the Royal Ontario Museum of Zoology and the American Museum of Natural History for courtesies extended.

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