

ERYTHRISTIC NORTHERN ORIOLES

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Erythrism is defined as abnormally reddish coloration. In two modern reference works on birds (Terres 1980; Campbell and Lack 1985), erythrism is attributed to an abnormal change from a black or dark brown melanin pigment to a chestnut-red melanin; examples are given from the Scolopacidae and Phasianidae. In addition, Terres calls the red morph of screech-owls erythrism; this hardly seems appropriate, as there is nothing abnormal about red morph screech-owls. In the venerable predecessor of the Campbell and Lack work (Newton and Gadow 1896), however, erythrism is defined as "the abnormal occurrence of red, mostly confined to originally yellow or orange feathers, occasionally produced by abnormal food..." This phenomenon is exemplified by the abnormal rectrix color in Cedar Waxwing (*Bombycilla cedrorum*) that have ingested certain honeysuckle berries that contain the red pigment rhodoxanthin (see Mulvihill *et al.* 1992), although in most individuals the color is not intense enough to be called red.

On 3 September 1985, while netting and banding migrants on Great Gull Island, at the eastern end of Long Island Sound, NY, I collected a female Northern (Baltimore) Oriole (*Icterus galbula galbula*) in first Basic plumage (HY) that exhibits the kind of erythrism described by Newton and Gadow. In normal females of this age, the throat varies from pale yellow to almost white; the breast color is not matched exactly by any colors in Smithe (1975, 1981), but is perhaps nearest to Yellow Ocher, 123C, of Smithe (1981). This color varies in its posterior extent; in some individuals it extends well down the abdomen, while in others it gives way to gray, slightly washed with yellow, at the edge of the lower breast. In the Great Gull Island bird, the base color of the throat is white, the feathers tipped with yellow; that of the breast is a somewhat brighter yellow than the normal Yellow Ocher (unmatched in Smithe), and the yellow extends all the way to the undertail coverts. The feathers of the sides of the breast, and a few in the center of the breast and the abdomen, are tipped with a color between Chrome Orange (17) and Flame Scarlet (16) of Smithe (1975). The yellow under tail coverts are lightly washed with this color. On the dorsal surface, the only feathers washed with red are a few on each side of the crown just above the eyes, and about a third of the feathers of the rump and upper tail coverts. In addition, the left 4th

rectrix is heavily washed with red, contrasting strongly With the adjacent greenish rectrices. On the right side, rectrix 4 is about 1.5 mm shorter than rectrix 3 and 1 mm longer than rectrix 5. The red rectrix, although apparently not sheathed at the base, is 6 mm shorter than the adjacent rectrix 3 and 4.5 mm shorter than the adjacent rectrix 5. It also has the broad shape of an adult rectrix rather than the narrower shape of the adjacent feathers. It undoubtedly represents a replacement for an accidentally lost rectrix; it is common for such replacement feathers to resemble in color and/or shape the feather that would normally appear at the next molt (pers. obs.).

I have searched without success for other erythristic Northern Orioles in the collections of the National and Delaware Museums of Natural History (and a few small collections not specified in my notes). There are three such specimens in the American Museum of Natural History (AMNH). AMNH 789515 is a bird in first basic plumage collected at the Kalbfleisch Field Research Station at Huntington, Long Island, by R. Chandler on 21 August 1963. It was sexed as a male, but I am reasonably confident that it was a female. Flattened wing lengths (in mm) of six males in first Basic plumage in Carnegie Museum of Natural History (CM), taken 18 August-16 September, are 92, 92.5, 93, 94, 98, 98. For six females of similar age taken 26 August-8 September, the wing measurements are 88, 88.5, 89.5, 90.5, 90.5, 92.5. The wing of the Kalbfleisch bird measures 90.5, which is typical for females, but conceivably might be an unusually small male. Color characters serve to confirm it as a female, however. In males of *I. g. galbula* in Basic I plumage, the orange color of the underparts is more or less continuous from the chin to the under tail coverts, although richest on the upper breast. In females the area beyond the breast is mostly grayish, with little carotenoid pigmentation. In males, the contrasting centers of the mantle feathers are black, in females dark gray. In males the rump is usually distinctly orange, in females olive with a slight orange wash. The rectrices of males are dull green with a distinct orange wash; in females they are olive with a greenish wash. In all of these characters the "male" Kalbfleisch specimen matches females.

The Kalbfleisch bird is a close match for the Great Gull Island specimen, differing in the following ways. The throat is whiter; the yellow of the breast does not extend as far caudad; there is hardly any red on the rump or upper tail coverts and none on the rectrices, but there is much more red on the under tail coverts. The distribution of the red on the breast and above the eyes is similar on the two specimens.

There is much variation in the intensity of the color of the underparts of Alternate-plumaged males, the orange of some specimens approaching red. I have seen only two that I would characterize as being truly erythristic. One of these, AMNH 54807, is a mummified bird in its first spring (SY), as evidenced by its worn retained remiges and (mostly) retained worn green rectrices. It was salvaged by J. Rowley (who noted on the label that it had been killed by a cat) at Hastings, NY, on 11 May (no year given but obviously many years ago as evidenced by the low AMNH catalogue number). What was probably this specimen was mentioned briefly by Dwight (1900).

The underparts of this male are heavily washed with Flame Scarlet (15), becoming Scarlet (14) anteriorly. The upper and under tail coverts are washed with Flame Scarlet, and the normally white edgings of the tertials are yellow. Like the Great Gull Island bird, this male had replaced one of its immature rectrices. Several rectrices are missing, so the identity of the replaced feather is not certain, but it appears to have been left-1. The tip and base of a definitive central rectrix are normally pale orange; in this bird there is a pinkish tinge to the orange. A second AMNH specimen, no. 521485, a definitively-plumaged (ASY) male, unfortunately lacks any data. Its breast is Chrome Orange (16), heavily washed with Flame Scarlet (15).

On 6 September 1988, Elise Lapham netted and banded a spectacularly erythristic Northern Oriole on Block Island, Rhode Island. She sent me four photographs of the bird. Its wing measured 92 mm, which would be rather small for a male or rather large for a female (compare measurements above and in Pyle *et al.* 1987). The cranium was fully pneumatized, which could conceivably be true of a young of the year (HY) by early September; this is unlikely, judging from the relative amount of pneumatization shown on the labels of September specimens in the CM collection. The rectrices appear too broad to be those of a HY bird, and the wings appear blacker than is typical for HY Northern Orioles. The Bird Banding Office, according to Mrs. Lapham, classified this bird as AHY-U, meaning that it hatched in 1987 or earlier, and was of unknown sex. With only the photograph to go by, this is probably a reasonable age/sex category.

I hesitate to use Smithe colors when comparing a photograph rather than the actual plumage colors. The entire head of this bird, except for yellow lores, is of a rich dark red color, which also mottles the upper breast and extends as a broken line two or three feathers wide about 3/4

of the length of the abdomen. The upper tail coverts are of this same red, whereas the under tail coverts are yellow, washed with red. The dorsum, rather having the feathers dark gray or black edged with greenish as in normal fall orioles, is saturated with the dark red color. As in two of the specimens described above, there is a single erythristic rectrix, which appears to be R-5; it is shorter than normal length for this feather, but it cannot be determined whether it was still growing.

Judging from examples in other species, it seems highly probable that the abnormal reddish plumage developed by these orioles has a dietary basis, but without a chemical analysis of the pigment it would be impossible to track down the source. It is interesting to note, however, that all four of the erythristic orioles with locality data came from a relatively small area of the northeastern United States, from Westchester County, NY, east to Block Island, RI. As all were conceivably migrants that came from elsewhere (and the Great Gull Island bird was certainly a migrant, as the species does not breed on the island), it is possible that all originated from a population from an even more restricted area, where a particular red-pigmented food was available.

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