

THE NORTHERN RACES OF *PIRANGA FLAVA*

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For the past five years the senior author has been unable to identify satisfactorily the specimens of *Piranga flava* that he and his collaborators have collected in Nuevo León, Hidalgo, and Veracruz. The junior author, in working out the characters of these tanagers in Arizona also has encountered difficulties. These seem to center (1) in seasonal color variation in adult birds, (2) in great individual variation, (3) in post-mortem plumage changes, and (4) in mixed winter populations.

Seasonal changes from wearing away of feather tips and fading must come about rapidly, especially in arid regions where sunlight is intense. The olive tones, in particular, are fugitive. In a series of six males from Guerrero (all believed to represent the race that breeds there), three October birds from Taxco resemble *P. f. dextra* in color, whereas three summer birds (from mountains near Chilpancingo and Omilteme) are like *P. f. hepatica*!

Individual variation is great, not only in size but also, in males, in intensity of red, presence and extent of yellow, and width of gray tips of back feathers; and, in females, in general color-tone (some birds being dark, others unaccountably pale) and in presence and extent of red. Adult males (at least a year old) often are partly green and yellow, and sometimes wear a complete "female" plumage. A good example of purely individual variation is to be seen in a subadult male from La Joya, Veracruz (virtually a toptype of *dextra*), which is like *hepatica* in color, yet is the smallest (wing 94.5 mm.) in the entire series of 49 red males at hand.

Museum specimens lose some color even though they are well cared for. This is especially true of females and female-type males in which the green tones fade.

Piranga flava leaves the United States in winter as a rule. Winter collections made in Mexico should, therefore, include some of these birds from the United States. But at what latitude does the species cease to be migratory, and how far south do United States birds go? Winter populations in some parts of Mexico obviously are mixed, and identification on purely geographical grounds probably has led to confusion.

With a total of 95 skins before them (most of these lent by the Museum of Comparative Zoology at Harvard, the Dickey Collections of the University of California at Los Angeles, the University of Arizona, the Museum of Zoology at the University of Michigan, the Fish and Wildlife Service, the U. S. National Museum, and Mr. Gale Monson), the authors have focused their attention upon *P. f. oreophasma* Oberholser of Texas and *P. f. zimmeri* van Rossem of Arizona, in the hope of finding winter or transient examples of these races in Mexico and of ascertaining the area in which the two forms intergrade.

Careful study of this series indicates that it is impossible to identify "*oreophasma*" and "*zimmeri*" save on the basis of geographical probability; in other words, unless a given specimen is from Brewster County, Texas, or from Arizona, it is placeable only as a more or less red-backed eastern bird or as a more or less gray-backed western bird. Although birds from Brewster County, Texas, are distinguishable from Arizona birds, the former are indistinguishable from birds of eastern Mexico, the latter from birds of western Mexico.

Only 71 of the 95 above-mentioned specimens are at all suitable for color comparison. These 71 fall readily into two groups, however. Adult males from Arizona, Hidalgo, Morelos, and other western Mexican localities north of Guerrero are more orange-red

below than those from Tamaulipas, Nuevo León, Veracruz and other southeastern Mexican localities, and their backs are duller and their crowns paler; the females are duller, with the sides and wing- and tail-edgings more grayish (less yellowish) green and the throat purer (less orange) yellow. In recently collected females and sub-adult (?) males the crown is greenish in both series; but in eastern birds this green apparently fades to yellow, especially anteriorly, while in western birds the resultant hue is strongly grayish.

Eastern birds, in the light of the present study, may be known as *P. f. dextra* Bangs (Proc. Biol. Soc. Wash., 20, 1907:30), western ones as *P. f. hepatica* Swainson (see van Rossem, Auk, 59, 1942:88).

It was doubtless Oberholser's inclusion of Arizona birds in his "*oreophasma*" that led Zimmer (Field Mus. Zool. Ser., 17, 1929:213-219) to place the latter in the synonymy of *hepatica* without even examining Texas or New Mexican birds. Careful comparison shows Chisos Mountains birds to be similar in color to Tamaulipas and Nuevo León specimens at hand, and *oreophasma* Oberholser (Auk, 36, 1919:74) must therefore be synonymized with *dextra*, unless it be recognized solely on the basis of slightly larger size.

As for specimens of "*oreophasma*" other than the topotypes, most Texas birds (Guadalupe and Davis mountains, etc.) at hand are in such poor condition as to be unsuitable for color comparison. An adult male taken 4 miles northwest of Chloride, Sierra County, New Mexico, on May 21, 1920 (kindly forwarded by Mr. van Rossem), proves to our surprise to be *dextra*. Specimens from the Chiricahua Mountains, Arizona, though mostly in poor plumage, are fairly average *hepatica*.

Previous revisers have considered the range of *hepatica* to include Guerrero and western Oaxaca. Six males and six females from Guerrero are close to *dextra*, however, although the males are a trifle pale, and one of the females (U.S.N.M. 143644, Biol. Survey Coll., from the mountains near Chilpancingo, December 24, 1894) is, if correctly sexed, ultratypical of that race. As for two Oaxacan birds at hand (marked "*hepatica*" by Oberholser) one, a male from Reyes, taken October 19, 1894, is decidedly off color, being the most orange in the entire series; the other (sex?), in postjuvenile molt, from La Parada, August 19, 1894, is closer to *dextra* than to *hepatica* save in crown color, and the nuchal part of the head has not yet attained its first winter plumage.

As for the recently proposed "*zimmeri*," the authors are fortunate in having before them the only known wintering *P. flava* from the United States, a pair from Patagonia, Santa Cruz County, Arizona, taken March 9, 1940 (Monson and Phillips, Condor, 43, 1941:111), as well as three September females and one April male from Arizona. These are no paler than strictly comparable *hepatica*. The Patagonia male is a little worn, strikingly gray-backed bird that stands out, by reason of this character, from the entire Arizona series; but, contradictorily enough, its crown and throat are the *darkest* red in the entire series of *hepatica*.

Some topotypical "*oreophasma*" are grayer-backed and grayer-cheeked than most *dextra* seen in collections. But the authors are now convinced that much taxonomic work in this group has been done on material that is not comparable; that really fresh, unworn "*zimmeri*" and "*oreophasma*" in fall plumage are almost unknown; that breeding "*zimmeri*" and "*oreophasma*" vary hopelessly because of wearing and fading, and are therefore to be used with extreme caution; and that the only sensible solution to the problem of identifying Mexican winter and transient birds is to lump the four forms into two, an eastern and a western, namely *dextra* and *hepatica*.

In size, birds from the United States average larger than those of southern Mexico, as has been repeatedly pointed out; but variation is so great as to prevent recognition of satisfactory races on this basis alone. It is noteworthy that the wing of a female in postjuvinal molt (U.S.N.M. 143641, Biol. Survey Coll.) taken at Tonala, Chiapas, August 16, 1895, measures 98 mm. This bird surely could not have been a transient "*oreophasma*," and its wing length clearly indicates that small size is not diagnostic of *dextra*.

Average and extreme wing lengths in millimeters

		Red Males	
18	<i>hepatica</i> from Arizona		(102.0) 97.5-106
5	<i>hepatica</i> from Morelos (Jan., Feb.), Hidalgo (Mar.), and Nayarit (June)		(99.0) 97.3-102
1	<i>dextra</i> from New Mexico		100
6	<i>dextra</i> from Texas (<i>vide</i> Van Tyne and Sutton, Misc. Publ. Mus. Zool. Univ. Mich., 37, 1937:96)		(103.5) 100.5-105.5
9	<i>dextra</i> from Tamaulipas (Sept., Oct., Jan., Mar.) and Nuevo León (Feb., Mar., May 1)		(99.8) 96-103
	Type of <i>dextra</i> from Jalapa, Veracruz (<i>vide</i> Bangs)		96
1	<i>dextra</i> from Oaxaca (Sept. 12)		99.5
		Females	
8	<i>hepatica</i> from Arizona		(98.1) 96-101
3	<i>hepatica</i> from Puebla (Jan.), Hidalgo (Apr.), and Nayarit (June)		(95.7) 93.3-97.7
3	<i>dextra</i> from Texas (Davis Mts. and Brewster Co.)		(100.5) 100-101.5
8	<i>dextra</i> from Tamaulipas (Sept., Oct., March) and Nuevo León (Mar., May 1)		(95.7) 91.5-99
4	<i>dextra</i> from Puebla (Jan.) and Veracruz (Apr.)		(93.6) 91-96
3	<i>dextra</i> from Chiapas (Jan., Aug. 16) and Guatemala (May 6)		(94.5) 92.5-98

SUMMARY

Piranga flava is represented by two races in Mexico and the United States. The southern eastern race, *dextra*, ranges from Guatemala (at least in winter) north to Oaxaca and Guerrero and along the Sierra Madre Oriental and the mountains farther north and west at least to Chloride, New Mexico. The northwestern race, *hepatica*, ranges from central northern Arizona (east in southern Arizona at least as far as the Chiricahua Mountains) south to the Jacala region of Hidalgo, and Morelos. Northern birds average larger than southern birds, but recognition of additional races, based only on slight size differences, is not warranted in view of the fact that some southern birds are notably large and vice versa.

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