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THE NOMENCLATURE OF THE RED-WINGED BLACKBIRD (*AGELAIUS PHOENICEUS*) OF SOUTH-CENTRAL MEXICO[1]

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THE RED-WINGED BLACKBIRDS (*Agelaius phoeniceus*) nesting in the interior valleys of the Trans-Mexican Volcanic Belt to the east of Mexico City and those occupying the upper reaches of the Balsas River drainage in the states of Puebla and Tlaxcala, have long presented problems to workers in Mexican ornithology.

The so-called "Bicolored Redwing," *A. p. gubernator* (Wagler), in which the male lacks the yellow on the epaulets and the female is virtually uniformly dusky below, ranges from Durango southward across the Mexican Plateau, reaching its southern limits at the Trans-Mexican Volcanic Belt. The type locality of *gubernator* is the Valley of Mexico (Stresemann, 1954). Southward in the states of Morelos and northwestern Puebla occurs a large-billed form in which the male has the typically yellow-bordered epaulets, and the female is pale and conspicuously striped below as in most forms of the species. Within a 25-mile radius of the city of Puebla, the two forms come together and form a "hybrid zone" (Figure 1). Within this zone the birds are variously intermediate (cf. Hardy and Dickerman, 1965, for a detailed discussion of this contact zone).

The problem is what names to apply to the populations south of the range of *gubernator*. Nelson (1897) described *A. p. grandis* from Atlixco,

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Puebla, from a series of two females and three males out of a series of six females and four males taken in June and July 1893. He described *grandis* on the basis of a female as being "darker, with the grayish or fulvous streaking on the lower surface limited mainly to the neck and breast, leaving the flanks plain" as compared to *A. p. phoeniceus* from the United States. He wrote that the color of the males did not differ from that of the same sex in other forms. Although Nelson mentioned *gubernator* (then considered to be a full species ranging through this same area of Mexico), he did not compare his new form with it. Ridgway (1902) listed the form as *Agelaius gubernator grandis*, and assigned a range including all of the intermediate zone as mapped in Figure 1, plus "Hiladgo (Real del Monte)?" "Morelos?" and dubiously, Orizaba in Veracruz. Because of the great variability in supposed color characters in a series of twenty-five birds he examined, Hellmayr (1937) did not believe the distinction between *gubernator* and *grandis* could be maintained. Deignan (1961) in listing the type of *grandis* followed Hellmayr in considering this name a synonym of *gubernator*.

Unfortunately, Nelson's 1893 series was taken well within the zone of "hybridization," and is composed of intermediate types, with the type specimen, a female, being virtually inseparable from recently taken topotypes of *gubernator* (Figure 2). *A. p. grandis* Nelson 1897, must be placed in the synonymy of *A. p. gubernator*. The form from Morelos and adjoining Puebla with striped females is therefore without a name, and may be known as

AGELAIUS PHOENICEUS NELSONI new subspecies

Type.—Adult male; no. 42674, Louisiana State University Museum of Zoology; Lago Coatetelco, Morelos, México; 18 November 1964; Robert W. Dickerman; original no. RWD 12176.

Characters.—Most similar to *A. p. nayaritensis*, but larger; females inseparable from that race in coloration. Females much darker than those of *sonoriensis* and less richly colored than those of *richmondi*. Differs from the geographically adjacent *gubernator* in males having a well developed yellow border to the red epaulets, and the females being strongly striped both dorsally and ventrally. See Table 1 for measurements.

Distribution.—Fresh-water marshes, rice fields, and sugar cane fields of Morelos and adjacent Puebla, and marshes at Laguna de Tuxpan, Guerrero. Intergrades with *gubernator* in northwestern Puebla and adjacent Tlaxcala.

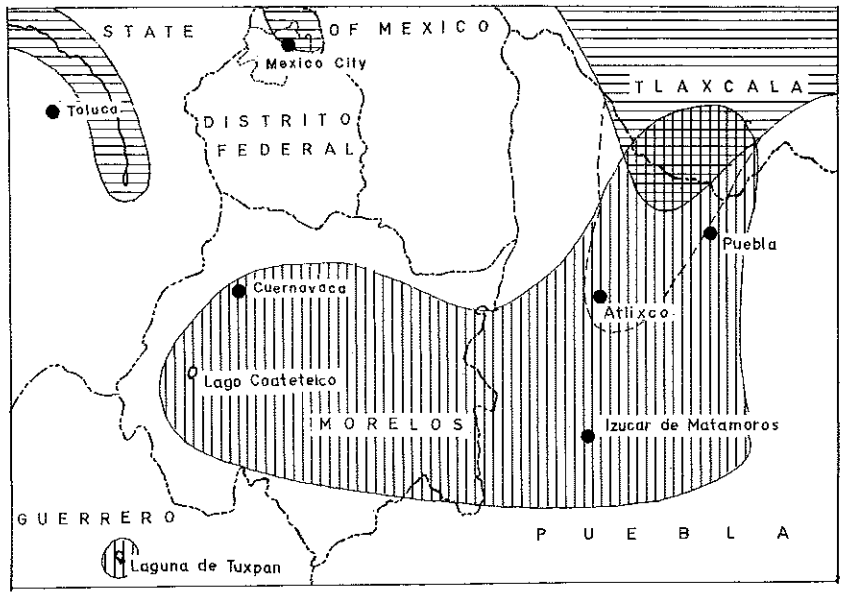

FIGURE 1. Present range of *Agelaius phoeniceus gubernator* (horizontal lines) and *A. p. nelsoni* (vertical lines), with zone of "hybridization" and with former range of *gubernator* (dashed line).

Remarks.—There is some evidence that *nelsoni* has extended its range in the years since Nelson collected at Atlixco, Puebla, in the years 1893 and 1903. In those two collections containing sixteen females, only one taken in 1903 can be placed within the series of *nelsoni*. All the remaining specimens range from nearly typical *gubernator* to intermediate, but with stronger *gubernator* characters. Collections made along the road between Atlixco and Izucar de Matamoros (38 kilometers distant), and in the vicinity of the latter town, in the winter and early spring months of 1961-1963, contain thirty-six females. Of these, only one may be classified as an intermediate between the two forms, the remaining being typical *nelsoni*. Likewise, the co-existence through ecological separation of the two forms in the Lerma Marshes (Hardy and Dickerman, 1965) probably represents a recent invasion of the range of *gubernator* by *nelsoni*.

I have a rather worn female collected at the southwest corner of Lago Texcoco in the Valley of Mexico, 30 March 1952, that represents a population with striped females. Its measurements (wing, 105; tail, 79; culmen from nostril, 13.3 mm) fall within the range of *nelsoni*, and it may be a rep-

TABLE 1. MEASUREMENTS IN MILLIMETERS OF *AGELAIUS PHOENICEUS* FROM CENTRAL MEXICO, WITH RANGE, MEAN AND STANDARD DEVIATION.

	Wing (Chord)				*Tail*				*Culmen from Nostril*			
MALES (adults only)	No.	Range	Mean	S.D.	No.	Range	Mean	S.D.	No.	Range	Mean	S.D.
A. p. gubernator												
Valley of Mexico	4	138-143	(140.8)		4	94- 97	(95.3)		4	14.5-16.1	(15.2)	
Lerma marshes	17	132-142	(137.5)	3.2	17	87-112	(95.4)	6.9	18	13.7-15.7	(14.6)	0.6
A. p. nelsoni												
Morelos and Guerrero	14	133-143	(139.3)	3.0	20	99-109	(103.5)	3.0	20	15.9-17.9	(16.9)	0.6
Puebla	8	134-142	(138.1)	3.1	8	103-108	(105.4)	1.6	7	16.0-18.3	(16.9)	0.3
A. p. nayaritensis	9	122-128	(125.6)	1.8	9	92-101	(95.5)	2.9	9	15.3-17.6	(16.2)	0.7
A. p. richmondi[1]	21	104-118	(111.2)	3.2	19	81- 98	(87.0)	4.2	22	15.4-19.0	(17.7)	0.9
FEMALES												
A. p. gubernator												
Valley of Mexico	5	111-115	(111.8)		5	73- 79	(76.0)		5	11.8-13.8	(12.4)	
Lerma marshes	20	103-117	(110.6)	3.5	20	68- 80	(74.5)	3.3	19	11.1-13.6	(12.3)	0.6
A. p. nelsoni												
Morelos and Guerrero	28	106-115	(109.9)	2.3	28	75- 86	(80.4)	2.6	33	12.7-14.8	(14.1)	0.7
Puebla	35	103-115	(109.4)	3.2	34	75- 88	(80.6)	3.4	35	12.4-15.3	(14.0)	0.6
A. p. nayaritensis	18	100-110	(103.9)	3.0	18	75- 81	(77.8)	1.9	18	12.5-15.3	(14.0)	0.8
A. p. richmondi	18	84- 94	(88.4)	2.4	18	61- 73	(67.3)	3.2	19	13.2-15.7	(14.7)	0.6

[1]*A. p. richmondi* series includes only birds from between Tlacotalpan (type locality) and Coatecoalcos, Veracruz.

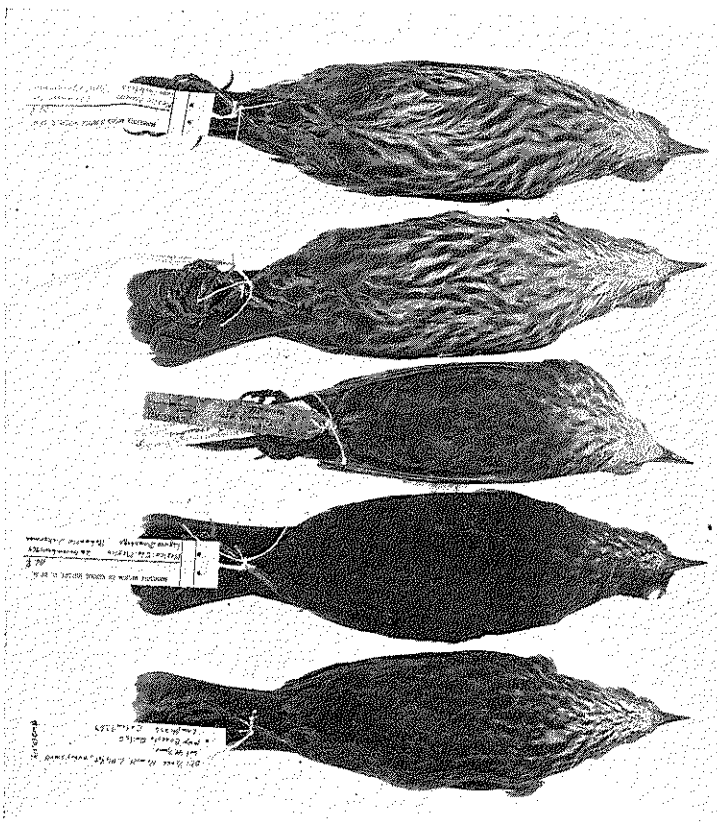

FIGURE 2. Type specimen of *Agelaius phoeniceus grandis* Nelson (center), with two topotypes of *A. p. nelsoni* (left) and two *A. p. gubernator* (right). Photo by Smithsonian Institution.

recent "introgression" of *nelsoni* characters. Unfortunately, there are no early specimens of *gubernator* from the Valley of Mexico available to aid us in determining the characters of the original population.

Although allocated to *gubernator* by Miller *et al.* (1957), the population of Red-winged Blackbirds in the states of Oaxaca and Chiapas are of the *nelsoni* type. These populations are currently under study by Laurence C. Binford and myself.

resentative of that form. On 20 and 21 November 1964, I observed a number of striped females at Laguna Zumpango at the northern end of the Valley of Mexico. I was unable to collect them, and their identification remains to be determined. Perhaps the degree of striping on the female to the extreme right of the type of *grandis* in Figure 2 indicates evidence of

I wish to thank Philip S. Humphrey who arranged for the photographing of the type of *grandis* at the Smithsonian Institution, and who permitted me to examine specimens in his care. The remainder of the specimens examined are in my own collections or in those of Allan R. Phillips. My specimens will be deposited ultimately at the University of Minnesota Museum of Natural History. Gonzalo Gaviño T. drew the map. The Departamento Forestal y Caza was extremely cooperative in issuing scientific collecting permits. The work at Lago Coatetelco was supported in part by United States Public Health Service Training Grant No. 5-T1-A1-231-02 from the National Institute of Allergy and Infectious Diseases.

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