TAXONOMY OF THE COMMON MEADOWLARK (*STURNELLA MAGNA*) IN CENTRAL AND SOUTHERN MÉXICO AND CARIBBEAN CENTRAL AMERICA

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While involved in studies on the birds of freshwater aquatic habitats of México, investigations on the role of birds in the natural cycles of arboviruses, and in general systematic studies of Mexican birds, we have recently accumulated series of Common or Eastern Meadowlarks (*Sturnella magna*) in fresh to moderately worn basic plumage. These series provide the first adequate material for the evaluation of the morphological variation in the populations of central and southern México. They reveal that changes are needed in the ranges currently assigned to some of these populations by Hellmayr (1937) and Miller et al. (1957:294–295), as well as the presence of an undescribed form in the Pacific lowlands of the state of Oaxaca. The present revision includes all of the known Mexican populations from the western section of the Trans-Mexican Volcanic Belt (from Nayarit east to the state of México) south to the Guatemalan border. The birds of the interior semi-arid plains of Tlaxcala, Puebla, adjacent areas of Veracruz, and northward are most closely related to the *hoopesi-lilianae* complex of northern México, *contra* Miller et al. (1957), and await detailed analysis. We include, however, the populations of the Caribbean coastal lowlands south and eastwards to Nicaragua, as they are most closely related to *S. m. mexicana* and have been confused with it in the literature. In winter, northern migrants of both meadowlarks, *S. magna* and *S. neglecta*, reach the Trans-Volcanic Belt of central México, but no farther south. The populations included in this study appear to be sedentary, though they may bunch up in winter, leaving some nesting areas deserted or sparsely populated.

Measurements are given in tables 1 and 2. Some bill measurements of *S. m. griscomi* taken to the nearest mm were kindly provided by William Preston. The remainder were made by Dickerman with a dial vernier caliper read to the nearest 0.1 mm. Both authors jointly or independently made other measurements, except that wing and tail measurements of the original series of *S. m. griscomi* were used as published (Van Tyne and Trautman 1941). Tarsal length was taken on some individuals of all forms, but, *contra* Griscom (1934:404), we found overlap in this character to be so extensive between populations that it was not considered worthwhile to take this measurement on all specimens examined. We have found no sure way to distinguish winter immatures after their skulls become fully ossified. Thus our measurements include them, probably causing a greater degree of variation than if the age classes measured were uniform.

ATLANTIC COASTAL LOWLAND POPULATIONS

General characterization: small, dark above, much dark color in tail.

Sturnella magna mexicana Sclater 1861

Sclater (1861:301), in his description of this form, wrote: "*Sturnella mexicana* is the name I propose to apply to the *Southern Mexican bird* [italics ours] which has the throat-band always quite narrow and is in the dimensions invariably much inferior to Northern specimens." It should be noted that by "northern specimens" Sclater presumably referred to specimens from eastern Canada and/or the northeastern United States, not specimens from northern México, which were then nonexistent. He cited "M. de Oca's birds collected at Jalapa, M. Salle's at Cordova and M. Botteri's from Orizaba" as referable to this form. No type specimens were indicated. Hellmayr (1937:213, footnote), apparently without having examined the specimens, commented, "Though not indicated as such, specimen b (Jalapa; de Oca) of subsp. *mexicana* (Cat. Bds. Brit. Mus. 11:360) is evidently the type," and Miller et al. (loc. cit.) cited Jalapa as the type locality, though in actual fact no lectotype or type locality has ever been designated.

It is indeed unfortunate that Sclater mentioned only localities where the species does not breed. Chapman (1898:18) discussed de Oca's specimen labeling and concluded that "to accept the locality 'Jalapa' as exact might prove extremely misleading." De Oca's birds

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TABLE 1. Measurements of some *Sturnella magna* populations from México and Central America.

	Wing (mm)[a]				Tail (mm)				Bill length (mm)[a]			
	n	$\bar{x}$	SE	range	*n*	$\bar{x}$	SE	range	*n*	$\bar{x}$	SE	range
Males												
auropectoralis	31	114.5	0.5	109–123	31	71.3	0.4	66–76	29	21.6	0.3	18.1–25.4
saundersi	14	114.3	0.6	111–119	13	76.9	0.8	74–82	14	20.4	0.3	18.5–22.5
alticola	28	109.6	0.4	107–113	25	75.0	0.6	69–80	27	21.2	0.3	19.1–25.5
mexicana	17	102.1	0.4	99–105	20	69.8	0.6	65–74	23	20.0	0.2	19.0–22.4
inexspectata	15	96.3	0.5	94– 99	9	63.9	0.9	59–67	19	19.7	0.4	16.8–21.8
griscomi	19	107.3	0.6	103–112	7	73.1	1.3	69–79	18	22.1	0.3	20.0–25.0
Females												
auropectoralis	19	105.5	0.6	99–110	17	66.0	0.6	63–70	20	19.2	0.2	18.0–20.9
saundersi	11	102.0	0.8	99–107	10	67.8	0.9	63–72	10	17.8	0.2	17.0–19.1
alticola	28	99.9	0.4	97–105	28	67.0	0.5	62–72	29	19.2	0.2	17.0–20.9
mexicana	20	93.5	0.6	89– 97	18	63.2	0.4	61–67	19	18.3	0.2	16.7–21.5
inexspectata	10	88.0	0.3	86– 89	7	57.9	0.7	54–60	10	17.9	0.2	16.8–18.6
griscomi	18	96.9	0.5	94–101	10	64.5	0.9	61–71	17	19.7	0.2	19.0–21.0

[a] Wing measurement is the chord; bill measurement is from anterior edge of nostril.

might well have been collected many miles from Jalapa.

The wing chord of the "Jalapa" specimen from the Sclater collection in the British Museum which Phillips examined measures 109.2 mm and falls outside the range of this measurement in 19 male *mexicana* from the coastal lowlands, the population to which this name has been most consistently applied (table 1; also see measurements in Griscom 1932:389). Thus if the specimen mentioned by Hellmayr were accepted as the lectotype of *mexicana*, the name would have to be used for the population of the interior highlands of eastern México, leaving the coastal population without a name.

Fortunately, in the U.S. National Museum there is a specimen (no. 13653) from the Sclater collection, labeled "Xalapa," which is close to coastal *mexicana* in coloration, and whose wing measurement (chord, 105 mm) is within the range of that population. This specimen was entered in the National Museum catalogue 21 December 1859 and thus was undoubtedly part of Sclater's original series on which his concept of *mexicana* was formed. It was considered to be a cotype of *mexicana* by Brodkorb (1948). Thus we believe this specimen should be designated as the lectotype of *Sturnella mexicana* Sclater, in the interest of stability. We recommend that the type locality be further restricted to Dos Ríos, Veracruz (18 km below = east of Jalapa). A series of six birds from there in prebasic molt match a comparable series from the Veracruz lowlands in coloration, and the measurements of two April females from Dos Ríos fall within those of a series of lowland specimens.

S. m. mexicana, then, may continue to be used for a small, richly colored rufescent subspecies. This was characterized by Griscom (1934) as having a short blunt culmen, long slender legs, and a long tail. As stated above, tarsal length per se was not found to distinguish any form of *Sturnella* in this study. However, the tarsi of *mexicana* are long in relation to the relatively short wings. The bill averages only slightly shorter than that of the largest Mexican subspecies, *auropectoralis*, and in females the bill is actually *longer* than in females of the coastal Oaxaca form described beyond. The tail of both *mexicana* and *inexspectata* is significantly shorter than the tail of the highland forms, *auropectoralis* and *alticola*, or the Oaxaca coastal form, and is, on the average, shorter than the adjacent lowland form, *griscomi*.

TABLE 2. Weights (g) of some *Sturnella magna* populations from México and Central America.

	Weight (g)			
	n	$\bar{x}$	SE	range
Males				
auropectoralis	4	107.4	4.3	98.4–118.2
saundersi	14	109.1	1.4	100.0–120.0
alticola	24	98.3	1.2	86.0–110.5
mexicana	4	92.5	0.7	90.7– 94.2
inexspectata	7	83.5	3.3	73.5– 96.0
griscomi	—	—	—	— —
Females				
auropectoralis	6	86.0	2.4	77.0– 93.7
saundersi	9	80.0	1.1	75.3– 85.1
alticola	24	77.5	1.1	65.6– 88.7
mexicana	11	72.0	2.1	60.0– 84.8
inexspectata	5	62.9	1.6	58.5– 66.6
griscomi	—	—	—	— —

S. m. mexicana occurs in the Atlantic coastal lowlands from north-central Veracruz south and eastwards, extending southwards across the Isthmus of Tehuántepec to at least 4 km S of Sarabia, Oaxaca. (Two males from there, while closest to *mexicana* in coloration, have long wings, indicating an approach to the larger Pacific coastal form in size.) *Mexicana* ranges through Tabasco and the adjacent lowlands of Chiapas (Brodkorb 1943), across the base of the Yucatán peninsula and the Petén of Guatemala and into Belize (British Honduras) (see discussion beyond under *inexspectata*).

In northern Veracruz (south to Tecolutla) and in adjacent Tamaulipas and Puebla (south nearly to Teziutlán), there is a mixed population of large birds which vary in coloration, with some as rich as typical *mexicana*, and others dull grayish-brown, as in *hoopesi* of northern Tamaulipas and southeastern Texas. Miller et al. (loc. cit.) extended the range of *auropectoralis* east to northeastern Puebla (Metlaltoyuca), based on a large but richly colored (*mexicana*-like) bird collected by Nelson and Goldman. This actually represents an intergrade, in size only, towards a larger form. In reality, the range of *auropectoralis* is completely separated from that of *mexicana* by the populations of paler *hoopesi-lilianae*-related birds of the arid plains of Puebla and adjacent areas and by the forest and deserts of northern and eastern Oaxaca. The "topotypes" of *mexicana* cited by Griscom (1932, 1934), labeled as taken at Jalapa by de Oca, also represent intergrades between the Puebla population and *mexicana*.

Sturnella magna inexspectata Ridgway 1888

The excellent series of meadowlarks assembled by Thomas R. Howell in his studies on the avifauna of Nicaragua was generously loaned to us, and provides the basis for this analysis of *S. m. inexpectata*, previously known only from the type series (two males in extremely worn plumage and a female discussed beyond).

This race proves to be far smaller in measurements and weight than any other Mexican or Central American subspecies, with little or no overlap in wing or tail measurements with *mexicana*, its closest relative. The black areas of the crown, interscapular, and rump feathers are, on the average, more extensive than in any other forms, and thus, with the best available (although moderately worn) specimens, it appears to be a darker form. A female paratype in the United States National Museum (no. 112,128), collected 19 July 1887, had molted the interscapular, crown, and rump areas. This is the only available fresh-plumaged specimen of *inexspectata*, and, allowing for foxing, the brown feather edgings of these areas do appear to be richer than in comparably plumaged *mexicana*.

S. m. inexspectata is thus a distinctive subspecies restricted to the Comarca del Cabo region of Nicaragua and adjacent Honduras. To date, true intermediates between it and *alticola* have not been seen by us, if indeed the populations do meet (cf. Hellmayr 1937: 213–214, footnotes No. 2).

Griscom (1932) considered the Petén population to be *mexicana* but two years later (1934) listed Petén as dubiously in the range of *inexspectata*. All subsequent authors to date, including Van Tyne (1935), Hellmayr (1937), Paynter (1955), Russell (1964), and Monroe (1968), have unfortunately, in the absence of an adequate characterization in *inexspectata*, considered the birds of Belize and the Petén of Guatemala to be that form. The measurements of the wing and tail of four males in unworn plumage from Belize are 101–103 and 70–82 mm, respectively (compare wiith measurements in table 1). The wing of one very worn male from La Libertad, Petén, measures 96 mm. One worn female from La Libertad, and three unworn females from Belize have wing measurements of 89–93 mm, and the latter three have tails measuring 59–68 mm (the shortest measurement in each series being of the same immature bird). Thus both wing and tail measurements of these populations fall largely outside of the range of measurements for *inexspectata* and well within the range of *mexicana* (see also Griscom 1934: 406). Two very fresh plumaged specimens from Belize do average slightly darker than any comparable *mexicana*, but other equally fresh-plumaged specimens are inseparable in coloration from *mexicana*, and it seems best to refer the meadowlarks of Belize and the Petén of Guatemala to *S. m. mexicana*, acknowledging that some individuals possibly approach *inexspectata* slightly in their darker coloration.

We use the correct classical spelling *inexspectata*, following the original description (Ridgway 1888) and Deignan (1961), in preference to "*inexpectata*" introduced by Stone (1897). This unnecessary emendation (or *lapsus*) was later used by Ridgway himself (1902) and by most subsequent authors, most recently by Monroe (1968).*

* See letter from Eisenmann in News and Notes.—Editor.

Sturnella magna griscomi. Van Tyne and Trautman 1941

The isolated population of meadowlarks on the northern tip of the Yucatán peninsula was first mentioned as being possibly a distinct subspecies by Griscom (1934:404) on the basis of one specimen with a slightly paler and duller venter. Although that character was one of bleaching or wear, Van Tyne and Trautman (1941), on the basis of a series collected in March, described the population as being larger than adjacent *mexicana* and *inexspectata* with generally paler coloration of the sides of the head, flanks, and crissum, paler crossbars on the back, and the dark areas of the central tail feathers more confluent.

We have available a series of 17 specimens in fresh basic plumage, some of which had not completed the molt, and have found the claimed color characters to be largely those of March specimens from alkaline areas compared to birds in fresher plumage from elsewhere. While *griscomi* does tend to be a somewhat less richly (less reddish) colored race (and thus like *alticola*), there is much overlap with *mexicana*; some topotypes from Progresso (e.g., RWD 11618) are inseparable in general coloration from *mexicana*. An additional color character of *griscomi* is that the crown stripes are essentially black, with the brown edgings found in *mexicana* reduced or absent.

In size *griscomi* is larger, and thus is more similar to *alticola* (*contra* Van Tyne and Trautman 1941:8) than to the other lowland forms, *mexicana* and *inexspectata*. Indeed, with the similarity in size and approach in coloration between *griscomi* and *alticola*, one wonders if the former might represent a relic more xeric-adapted *alticola*-like population once connected to the central highlands, possibly through the pine-covered ridges of Belize.

INTERIOR AND PACIFIC LOWLAND POPULATIONS:

Generally larger and often with more white in tail; upper parts usually paler.

Sturnella magna auropectoralis Saunders 1934

This large, dark and richly colored subspecies, characterized by its orange-yellow breast in fresh plumage, ranges across the Trans-Mexican Volcanic Belt from sea level in Nayarit (Laguna Mexcaltitlán) east to the upper Río Lerma drainage in the state of México. Birds nesting in the Valley of Mexico (Distrito Federal) and eastwards in the Volcanic Belt are grayer and, as mentioned previously, are related to the *hoopesi-lilianae* complex not covered in this review. We have not attempted to determine the northern extent of the range of *auropectoralis*, but some specimens from Durango examined by us are not of this form, and we question the validity of specimens of *auropectoralis* labeled as having been collected in Sinaloa (Miller et al., loc. cit.), although it probably does reach *extreme* southern Sinaloa. The erroneous record from Metaltoyuca, Puebla, has been discussed above. A series of eight specimens taken by us from the Valley of Oaxaca in early January show intergradation in characters between *S. m. auropectoralis* and the following race.

Sturnella magna saundersi, new subspecies

Cotypes. Six males (field numbers RWD 13,258, 13,256, 13,260, ARP 8939, 8941, 8943) and five females (field numbers RWD 13,262 and ARP 8935, 8936, 8937 and 8938). All collected 9 km S of Niltepec, Oaxaca, at an elevation of 5–25 m, on 15 January 1965 by Robert W. Dickerman and Allan R. Phillips.

Diagnosis. A pale, sandy brown, short-billed race, most similar in color to *S. m. auropectoralis*, but paler and somewhat less rich or rufescent dorsally and on the flanks, and paler, less ochraceous-yellow on the breast. Dorsum paler than *S. m. alticola*, and *S. m. griscomi*, and somewhat more yellowish, less grayish-brown (with the black areas reduced). Browner, less grayish above than the races of northern México and the Mexican Plateau east and north from the Distrito Federal. Wing length, shorter than *auropectoralis* and longer than *mexicana*, averages longer than *alticola*. Culmen from nostril averages shorter in males and markedly shorter in females than in *alticola* and *auropectoralis*. The culmen of female *saundersi* averages even shorter than the culmen of female *mexicana*. *Saundersi* averages somewhat heavier in weight than *alticola*, but females are lighter than *auropectoralis*.

Remarks. We take great pleasure in dedicating this race to Dr. George B. Saunders, who has contributed much to our knowledge of *Sturnella*, and to whom we are indebted for helpful information on the more northern subspecies.

Birds from the Valley of Oaxaca are closer in general coloration to *saundersi*, but have large bills and are somewhat richer below, thus approaching *auropectoralis*.

Range: Pacific lowlands of southeastern Oaxaca, from the type locality west to at least

10 mi. E of Juchitán. Meadowlarks are elsewhere absent from most of the Pacific lowlands between Nayarit and Costa Rica, as there are no extensive grasslands near the coast.

Sturnella magna alticola Nelson 1900

S. *m. alticola* is a medium-sized form, with the edges of dorsal feathers predominantly grayish-brown and with grayer flanks. It lacks the depth of color of *mexicana* or the warm brown tones of *saundersi*. Although *alticola* is stated by Miller et al. (loc. cit.) to range north to near Mexico City (northern Morelos), it is actually restricted to the highlands of Chiapas and Central America in the material examined by us. Griscom (1934:404–405), because of a lack of specimens in fresh plumage and an erroneous concept of size variation in *inexspectata*, included birds from the ranges of at least five subspecies in his discussion of *alticola*, including: *lilianae* (western and northwestern México), *auropectoralis* ("Tepic" and Jalisco), *hoopesi-lilianae*-related subspecies (Veracruz and highlands of eastern México), and *saundersi* (Oaxaca = "intergrades with *mexicana*").

Birds from San Cristóbal de las Casas, Chiapas, are slightly richer dorsally than are others of a large series of *alticola*, and may indicate an influence of *mexicana* extending to that highland locality. Specimens from near La Trinitaria and other localities near or on the Guatemalan border (Ciénaga del Lagartero) average slightly smaller than series from Comitán, Cd. Las Casas, and from near Ocuilapa, the type locality of the subspecies. There is a moderate amount of variation, at least in coloration, within or between *alticola* populations of Central America, but we have not attempted to assemble and examine critically the scattered and very limited material in usable plumages from south and east of México.

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