

## CRITICAL NOTES ON TWO SOUTHWESTERN SPARROWS

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CERTAIN of the Fringillidae are conspicuous examples of birds whose status in Arizona has changed with overgrazing of the region and consequent decrease of surface water and vegetation. The writer has given special attention to several of these species for the past few years, and these studies indicate that nomenclatural and taxonomic adjustments are desirable in two cases.

The authorities of the American Museum of Natural History, University of Arizona and Arizona State Museum, and especially the United States National Museum and the Fish and Wildlife Service, U. S. Dept. of the Interior, have greatly helped me in this study. I also wish to thank Dr. L. C. Sanford and Messrs. Lyndon L. Hargrave, Gale Monson, and Dwain W. Warner for the privilege of examining specimens in their private collections; Major E. A. Goldman for help in locating certain Mexican localities; Dr. Herbert Friedmann and Mr. Charles O'Brien for making certain critical American Museum specimens available in Washington; and Mr. J. Southgate Y. Hoyt for supplying data on the Botteri Sparrows in the Museum of Comparative Zoology at Harvard College.

BOTTERI'S SPARROW (*Aimophila botterii*)

All the large, pale, pointed-winged birds with restricted black markings occurring north of the range of *A. b. petenica* are currently referred to the nominate race. This may perhaps be attributed largely to the scarcity of the species in collections and the poor plumage of most specimens of this grass-haunting species. It still seems quite impossible to draw any really final conclusions, but enough specimens are available to demonstrate satisfactorily a part of the situation. Two new races may now be defined, the three currently recognizable ones being as follows:

*Aimophila botterii texana*, subsp. nov.

*Type*.—Adult male, U. S. National Museum no. 165,985, Biological Survey collection; Brownsville, Texas, May 2, 1900; collected by Vernon Bailey.

*Subspecific characters*.—Wing somewhat longer than in the other races of the species; gray areas of back and wings extended at the expense of the brown areas, and the latter a bit paler and perhaps redder, the colors being rather paler throughout. Culmen possibly a bit straighter.

*Range*.—Coastal prairies near the mouth of the Rio Grande in southeastern Texas and northeastern Tamaulipas. Winter home unknown.

Birds from southeastern Tamaulipas (Tampico) show some approach to *texana* in color and slightly longer wing, but specimens from farther inland (Mesa de la Angostura and Xicotencatl) seem to be good *botterii* except perhaps in bill size. The southernmost specimen which I would refer to *texana* is from the coast of Tamaulipas ten miles south of the Rio Grande.

***Aimophila botterii goldmani*, subsp. nov.**

*Type*.—Adult male, U. S. National Museum no. 157,267, Biological Survey collection; Santiago, southern Nayarit, June 19, 1897; collected by E. W. Nelson and E. A. Goldman.

*Subspecific characters*.—Similar to *A. b. botterii*, but smaller, with more curved and usually shorter culmen; flanks darker buffy brown or gray-brown, and chest-band also darker. From the more remote *petenica* it differs primarily in paler upper parts with reduced black areas.

Birds from southern Nayarit are most typical, and differ from *botterii* further in the extension of the chestnut of the upper parts over the edgings of tertials and inner secondaries, greater wing-coverts, and upper tail-coverts.

*Range*.—Southern Sinaloa to southern Nayarit, at least. Winter home unknown, but perhaps resident where found.

All the specimens examined were taken by Nelson and Goldman in 1897. Localities are: Santiago (2 ♂, 1 ♀ June 19–21), Rosa Morada (2 ♂, June 22), and Acaponeta, Nayarit (1 ♂, June 29), and Rosario, Sinaloa (1 ♂, July 13).

It is perhaps surprising that the type of *mexicana*, taken in June, 1863, in the mountains of Colima, shows no approach whatever to the Nayarit race.

***Aimophila botterii botterii* (Sclater)**

*Zonotrichia botterii* Sclater, Proc. Zool. Soc. London, 1857: 214 (near Orizaba, Vera Cruz).

*Coturniculus mexicanus* Lawrence, Ann. Lyc. Nat. Hist. New York, 8: 474, 1867 (mountains of Colima).

*Peucaea aestivalis* var. *arizonae* Ridgway, Amer. Naturalist, 7: 615, 1873 (Nogales, "Sonora").

This race is placed last because it is the most difficult to interpret. It may be expected to intergrade with all of the others. Skins from Palenque, Chiapas, are *petenica*, as has been previously recorded (Ridgway, U. S. Nat. Mus. Bull. 50, pt. 1: 260, 1901), while others from San Vicente (especially) and Ocozucuantla approach that race. Two March birds from San Bartolome are also rather dark, but this is perhaps due to the freshness of their plumage. Skins from the valley of Jiquipilas, Ocuilapa, and Tuxtla Gutierrez are *botterii*, though slightly smaller and darker than birds from Atlixco, Puebla,

and San Nicolas, valley of Mexico, which two localities are presumably representative of true *botterii*.

These reddish birds extend north in the east-coast district to southern Tamaulipas, as previously mentioned. Farther west, specimens from Colotlan, extreme northern Jalisco, and Plateado, Zacatecas, are badly worn but differ in having the culmen a bit more abruptly decurved at tip and the chestnut upper parts largely replaced by a gray and white pattern. Were they in better plumage, more satisfactory comparison could be made. A young female from Villar, San Luis Potosi, Sept. 23, is very dark, slaty gray on back and on bend of wing, with the browns not only reduced in extent but also dark and gray (less reddish); browns are evident only on nape and wings, but the post-juvinal molt is not yet complete. The buff and yellow tinges of typical *botterii* juveniles are practically absent. The remiges are edged externally with dark grayish brown instead of buff and tipped with small grayish, instead of conspicuous whitish, edges. This strikingly distinct bird probably represents the same race as the worn Colotlan adults. Skins from Guanajuato and "Eupátaro" approach this type, which should perhaps bear the name *Aimophila botterii mexicana*, although without more truly comparable material this point cannot be settled.

North of the above-mentioned localities, I know of no record whatever of any form of *botterii* for the north-central plateau, lying between the Sierra Madre Oriental and the Sierra Madre Occidental. To the west, however, some form occurs in southern Sonora (van Rossem, *Trans. San Diego Soc. Nat. Hist.*, 6: 300, 1931; Guirocoba, May), and the species has long been known from the Arizona-Sonora border, from the Altar Valley (Stephens, *Auk*, 2: 226, 1885) eastward. The Arizona birds should probably be called *Aimophila botterii arizonae*, as they differ from true *botterii* in paler head and paler, duller chestnut backs. Juveniles differ from *botterii* in much the same way—paler above and on wing-coverts, broader pale feather-edgings (especially on crown and tertials), and often less yellow suffusion on the head.

It should be pointed out that the winter ranges of the various races remain to be worked out. Practically all the records fall between the beginning of May and early October. A specimen from Tampico in the American Museum of Natural History is dated "Mar., 1888," but its worn plumage indicates May as a more likely date of collection. Aside from this, I know of no March specimens from north of Cuernavaca, Morelos, where a female (Sanford coll.) was taken March 19,

1908, and three males (Sanford coll. and Am. Mus. Nat. Hist.) Apr. 6-27, 1908. Mr. Hoyt informs me that two females in the Museum of Comparative Zoölogy were taken at Chilpancingo, Guerrero, on Feb. 21 and Mar. 4, 1932. The earliest Chiapas birds in the Biological Survey collection are from San Bartolome, Mar. 24, 1904 (1 ♂, 1 ♀), and San Vicente, Apr. 16-20, 1904 (3 ♂). Since the bird appears to be such a late migrant, these March records probably indicate wintering localities.

The attached table of measurements shows that in *texana*, even in May birds whose tails are not badly worn, the wing is distinctly longer than the tail. While perhaps not quite so long, proportionately, as in "*Plagiospiza*" *superciliosa*, it still bridges fairly well the differences claimed by Ridgway (Auk, 15: 224, 1898). When the American Fringillidae receive a generic revision, I believe *superciliosa* will fall close to the "*Peucaea*" series.

COMPARATIVE MEASUREMENTS OF *Aimophila botterii*

	Wing	(av.)	Tail	(av.)
4 ♂ <i>texana</i>	65.3-68.2 mm.	(66.9)	61.6-66.0 mm.	(64.1)
3 ♀ <i>texana</i>	65.0-69.4	(67.2)	63.6-66.6	(65.2)
6 ♂ <i>goldmani</i>	59.3-61.6	(60.7)	59.5-62.8	(61.2)
1 ♀ <i>goldmani</i>	57.7	.	58.9	
5 ♂ <i>botterii</i> (Arizona)	60.5-65.8	(63.4)	62.1-67.8	(64.5)
1 ♀ <i>botterii</i> (Arizona)	64.6		67.5	
5 ♂ <i>botterii</i> (Puebla, June and July)	62.2-67.0	(64.3)	63.8-71.3	(66.3)
3 ♂ <i>botterii</i> (Morelos, April)	63.1-64.2	(63.8)	63.7-64.8	(64.1)
1 ♀ <i>botterii</i> (Morelos, March)	62.6		65.0	
5 ♂ <i>botterii</i> (Chiapas, May and March)	61.2-62.0	(61.6)	62.7-65.8	(64.2)
1 ♀ <i>botterii</i> (Chiapas, March)	59.3		61.5	

SONG SPARROW (*Melospiza melodia*)

The Song Sparrows breeding from the central Rocky Mountains south to Sonora are currently supposed to belong to two races; a dark, northern *fallax* and a pale, southern *saltonis*. Both taxonomy and nomenclature, however, seem to need adjustment.

The oldest name available for any Song Sparrow of this region is *Zonotrichia fallax* Baird, 1854. This was based on a January bird from "Pueblo Creek" (now Walnut Creek), north of Prescott, Arizona. In 1884, Henshaw separated the Rocky Mountain race from that of Tucson, stating that "the type of *fallax* is from Tucson, and . . . represents the fall plumage of" the local breeding race. The name *fallax* was therefore applied to the desert race until Grinnell, in 1909, called the type "a migratory song sparrow, probably breeding in some part

of the elevated Great Basin tract to the northward"; he accordingly separated the birds of southeastern California.

The A. O. U. Committee on Nomenclature thereupon (see Allen, *Auk*, 26: 321-322, 1909) considered the case and refused to recognize *saltonis*, though admitting that "the type of *fallax* . . . proves not to be quite typical as to locality, being a winter specimen and a migrant." They considered that "there is not room nor good reason for admitting two forms of the pallid phase of the Song Sparrow," though "*saltonis* may perhaps be regarded as [its] extreme manifestation." Soon, however, Oberholser (*Proc. Biol. Soc. Wash.*, 24: 252, 1911) and Grinnell (*Univ. Calif. Publ. Zool.*, 12: 174, 1914) applied the name *fallax* to the Rocky Mountain race, and it is so applied today.

In 1929, Swarth (*Proc. Calif. Acad. Sci.*, (4) 18: 328) pointed out that southeastern Arizona birds are darker than true *saltonis*. In 1931, van Rossem (*Trans. San Diego Soc. Nat. Hist.*, 6: 302), while confirming Swarth's observation, considered the two populations not distinct enough for racial separation, remarking especially that a Hermosillo, Sonora, bird taken May 7, 1892, "is as pale as all but the very palest Colorado River *saltonis*."

The present writer finds the differences pointed out by Swarth to be entirely constant when only fully comparable material in satisfactory plumage is compared. Specimens taken in May and later must often be identified arbitrarily by locality, but the genetic differences are hardly affected by this fact. I would recognize four races in the area in question, as follows:

Mountain Song Sparrow, *Melospiza melodia montana* Henshaw

*Melospiza fasciata montana* Henshaw, *Auk*, 1: 224, 1884 (Fort Bridger, Wyoming).

This race requires no discussion.

Canyon Song Sparrow, *Melospiza melodia fallax* (Baird)

*Zonotrichia fallax* Baird, *Pr. Acad. Nat. Sci. Phila.*, 7: 119, 1854 ("Pueblo Creek" = Walnut Creek, north of Prescott, Arizona).

The type of *fallax* is a good match for specimens of supposed *saltonis* (Biological Survey coll.) from Pahrnagat Valley, Nevada, and Beaverdam, Arizona (see Fisher, *N. Am. Fauna*, 7, p. 98-99, 1893). It agrees with the desert group of races in extension of reddish brown markings at the expense of black ones, but these browns are much darker than in the population found farther down the Colorado River.

This is a rare and restricted race. In addition to the type and the birds recorded by Fisher (*loc. cit.*), I have seen but one specimen that

I judge to be *fallax*; this is a juvenile male (Biological Survey coll.) from Supai [= Cataract] Canyon, Grand Canyon National Park, Arizona, June 21, 1929. It closely resembles juvenile *montana* but has paler, more reddish brown stripes and streaks on head, breast, and flanks. The specimens identified as *fallax* by Grinnell (1909) should be reexamined; in view of Grinnell's subsequent action, they are probably *montana*.

The type of *fallax* may well have been resident where taken. It would seem strange if a random migrant should prove to represent such a small population, for there is little suitable Song Sparrow country in the apparent range of *fallax*. Many northern Arizona streams, now barren, probably flowed steadily and were bordered with brush in 1853. Kennerly's few notes on Walnut Creek indicate that it may have supported a resident Song Sparrow population; perhaps it still does, but this has not been proved.

*Fallax* seems a trifle larger than the more southern races. Two males measure: wing 68.8–69.5 mm., tail 70.–71.5. The type (sex ?) has the wing 68.8 and tail 72.7, by my measurements (*cf.* Grinnell, 1909).

Tucson Song Sparrow, *Melospiza melodia bendirei*, subsp. nov.

*Type*.—Immature male, no. 705, collection of A. R. Phillips; Salt River at Tempe Butte, Maricopa Co., Arizona, Nov. 11, 1941; collected by Lewis D. Yaeger, and prepared by Lyndon L. Hargrave (orig. no. H393).

*Subspecific characters*.—Similar to *M. m. saltonis* but darker, richer reddish brown on head stripes, breast and flank streaks, and tail and wing edgings and coverts. Thus intermediate between *fallax* and *saltonis* in color (but not in range).

*Range*.—Lower Sonoran Zone rivers of central and southeastern Arizona and northeastern Sonora.

I propose for this race the common name used in manuscripts by the late Herbert Brown. These birds are very constant in color in fresh plumage, and they occupy a distinct faunal area. Careful comparison of the Hermosillo specimen mentioned by van Rossem shows it to be actually a little *darker* than average *bendirei*. Farther west, specimens from Sonoita, Sonora (near the Arizona border), are good *saltonis*. Farther north, two males (Biological Survey coll.) from Arlington, Arizona, are *bendirei*, but of these two the juvenile is paler than usual, being much like a juvenile *saltonis* from Needles, California. Intergradation may thus be expected a little south of Arlington, if any Song Sparrows breed along that part of the Gila River.

This race may appropriately be dedicated to Major Charles E. Bendire, whose valuable contributions to western ornithology began in southeastern Arizona.

Desert Song Sparrow, *Melospiza melodia saltonis* Grinnell

*Melospiza melodia saltonis* Grinnell, Univ. Calif. Publ. Zool., 5: 268, 1909 (Salton Sea near Mecca, California).

This is the palest of all the "desert" Song Sparrows. It occurs as far west as the Salton Sea region of southeastern California and in northeastern Baja California (Hardy River at east base of Cocopah Mts.; Salton River at Seven Wells and at Gardner's Laguna). Along the Colorado River it ranges north at least to Needles, California, though specimens from that locality are darker and less rufescent. If Song Sparrows breed in the deep canyons of the Colorado River not far above Needles, they will probably prove intermediate between *saltonis* and *fallax*. It must be remembered, however, that Song Sparrows are very local in distribution in the inland southwest.

Farther east, a specimen (University of Arizona) from 4 miles west of Alamo, Yuma Co., Arizona, is paler than comparable *bendirei* and probably represents *saltonis*, though I have not yet made final comparisons. Two mid-July females (Biological Survey coll.) from the Big Sandy River at 2000 feet altitude, Mohave Co., Arizona, are perhaps also *saltonis* but are too worn for safe identification.

Since this paper was written, Marshall and Behle (Condor, 44: 122-124, 1942) have proposed a "new" race, *Melospiza melodia virginis*, from the Virgin River, Utah, and Pahrnagat Valley, Nevada; this is, of course, a synonym of *M. m. fallax*, as defined above.<sup>1</sup> They produce evidence that *fallax* is a migratory race, though it is difficult to believe their implication that it does not winter north of "the southern tip of Clark County, Nevada." Exception must also be taken to their statement that Fairbank and Patagonia, Arizona, are points "where the ranges of these two races [*i. e.*, '*saltonis*' and '*fallax*' = *montana*] adjoin," since *montana* does not breed within more than 150 miles of either locality. This erroneous concept doubtless arose from Swarth's statement (*loc. cit.*) that "these two localities may be regarded as close to the eastern limit of the range of the subspecies *saltonis*." But *no* Song Sparrow is known to breed anywhere farther east at a similar latitude!

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<sup>1</sup> Marshall (Condor, 44: 233, Sept. 15, 1942) has already announced the identity of "*virginis*" with *fallax*.—Ed.