

THE DISTRIBUTION OF MEADOWLARKS IN OKLAHOMA*

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Two species of meadowlarks, genus *Sturnella* Vieillot, occur in the United States, the one, *Sturnella magna* (L.) in the East, the other, *Sturnella neglecta* Audubon, in the West. Relationships of these species were for some time considered problematical, for, while they differ only slightly in plumage, their songs are markedly different. Chapman (1900) examined specimens which he considered intermediate between *S. magna* and *S. neglecta*, and he discounted the value of song as a specific character. On the other hand, Baskett (1896) reported and Allen (1900) implied intermediacy of song. During this period Chapman (1890, 1900) and Allen (1900) regarded *S. neglecta* as a subspecies of *S. magna*, but Oberholser (1900) and Ridgway (1900) thought the differences between the two forms so nearly constant as to accord specific rank to each. Since 1906, both have generally been regarded as distinct species.

Although in some places *S. magna* and *S. neglecta* breed in the same fields in Oklahoma (Nice, 1931), their relationships have had little study here. The situation is further complicated in Oklahoma by the presence of *Sturnella magna magna* (L.), the eastern meadowlark, and *Sturnella magna argutula* Bangs, the southern meadowlark, intergrading subspecies.

This work sought to examine the relationships of *S. magna* and *S. neglecta* in Oklahoma, and to refine the knowledge of the distribution of all three meadowlarks, *S. neglecta*, *S. magna magna*, and *S. m. argutula* in the state.

METHODS

Field observations were made in 21 counties. Numbers of identified meadowlarks in each county were recorded, the identifications being based on vocalizations, which were also analyzed (by ear) for evidences of intermediacy. Field identifications were supplemented by collection of 36 meadowlarks from 12 counties, and the collection was placed in the University of Oklahoma Museum of Zoology (U. O. M. Z. Nos. 22008-22043). Collected specimens were examined for evidences of intergradation between *S. magna* and *S. neglecta*. Characters noted were (1) general darkness of back (*magna* is the darker), (2) degree of confluence of black bars of tertials and retrices (bars usually confluent in *magna*), and (3) color of malar region (yellow in *neglecta*, gray in *magna*). Specimens of *S. magna* were identified to subspecies by Dr. H. C. Oberholser, Bureau of Biological Survey, U. S. D. I.

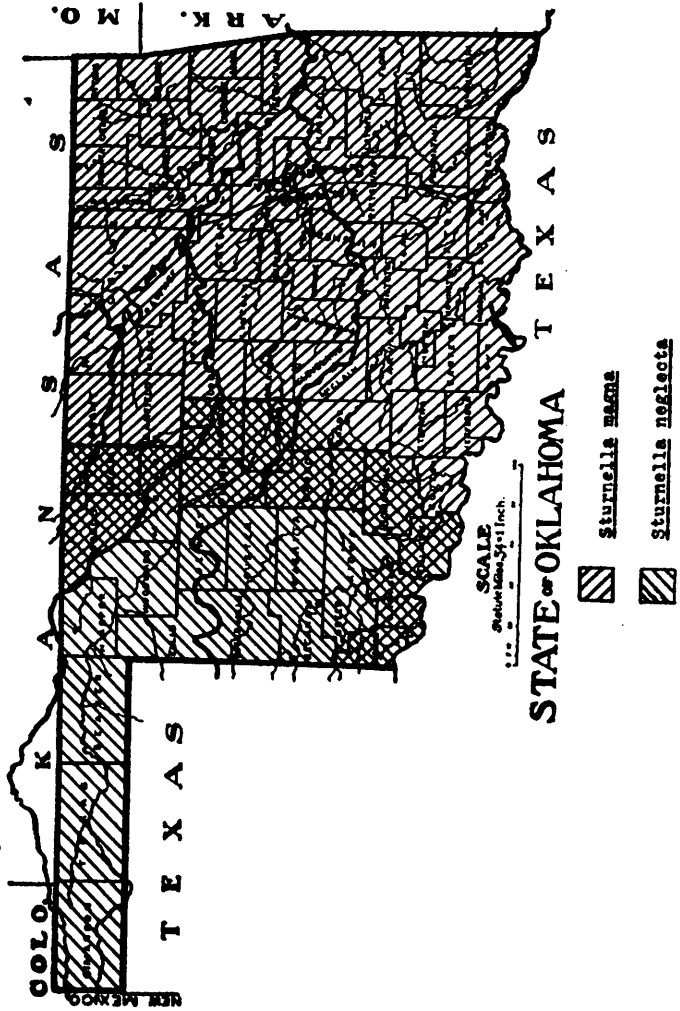
DISCUSSION OF RESULTS

Nice (1931) listed the southern meadowlark (*S. magna argutula*) as a permanent resident in eastern Oklahoma. She found the eastern meadowlark (*S. magna magna*) a summer resident in central and western Oklahoma, and the western meadowlark (*S. neglecta*) breeding in the western portion of the state. Map I is based on her complete statements of range.

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MAP I



STATE OF OKLAHOMA TEXAS

In general the writer's findings confirm Nice's (1931) statements of breeding ranges. In 15 counties confirmation is complete. In four counties (Kiowa, Woods, Canadian, and Kingfisher) *S. neglecta* alone was found, whereas Mrs. Nice reported both species. Further, field identifications of *S. magna* were made in Ellis County, but the two birds were not collected. Young birds of both species were shot from a flock in Caddo County, not mentioned by Nice (1931) but bordered to the north and south by counties in which she found both birds. The writer's findings are shown in Map II.

Five specimens of *S. magna* taken in the southeastern counties, Pushmataha, Johnston, and McCurtain, were all identified as *S. magna argutula*, these findings in general agreeing with Nice (1931). However, six of ten specimens of *S. magna* taken in Cleveland County were also identified as *S. m. argutula*, and thus the known range of this subspecies was extended westward in the state. Four specimens taken in Logan County were all identified as *S. m. magna*. All central Oklahoma specimens of *S. magna* had characters intermediate between *S. m. magna* and *S. m. argutula*, the latter typically being smaller and darker than the former.

A gradual "shading" from *S. magna* to *S. neglecta* should require that many breeding birds in "borderline" counties where only one form breeds show intermediate characters. Eight meadowlarks taken in Cleveland and Logan Counties during the breeding season were typical of *S. magna* except that one had irregularly narrow bars on the tertials.

If the two species hybridize freely in areas in which both breed, presumably many meadowlarks collected in these areas should show some intermediate characters. Eleven birds were collected in areas of overlapping ranges but ten of them showed no definite intermediate characters. Analysis was complicated by the abraded and faded condition of the feathers of breeding meadowlarks. However, variations in plumage in these specimens were no greater than in specimens of both species taken far from areas of overlap. Furthermore, vocalization and plumage characters were perfectly correlated in the birds collected. One specimen (U. O. M. Z. No. 22040) seemed to be more like *magna* in respect to darkness of back and width of tertial bars, and more like *neglecta* in the barring of the retrices and color of the malar region. The bird vocalized in typical *neglecta* fashion before it was shot. Thus, the possibility of occasional hybridization is not ruled out.

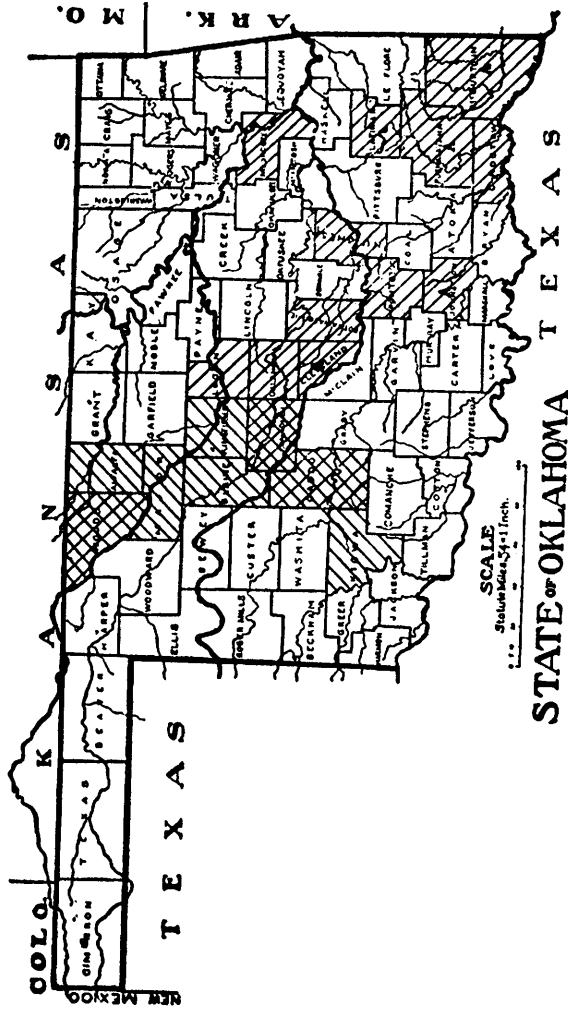
SUMMARY

(1) Observations of *Sturnella magna* and *S. neglecta* in 21 counties and collections in 12 counties in general confirmed Nice's (1931) statements of ranges. In 15 counties confirmation was complete and in four, partial. Both species were collected in Caddo County, not mentioned by Nice (1931).



(2) *Sturnella magna argutula* was collected in Cleveland County and thus its known range was extended westward.

(3) Specimens collected at the borderline of the breeding range of *S. magna* showed little evidence that *S. magna* and *S. neglecta* shade into one another, and specimens collected from areas of overlapping ranges yielded no evidence of free hybridization, although the possibility of occasional crossing was not ruled out.

MAP II



STATE OF OKLAHOMA T E X A S

-  *Sturnella magna*
-  *Sturnella neglecta*

A -- Counties in which *S. m. argutula* was collected

Acknowledgments

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