

zation. Only a few very small blood vessels could be demonstrated. This is in marked contrast to the well-vascularized true penis found in ducks (for example, see Komarek and Marvan 1969).

*Discussion.*—For years speculation as to the function of this structure has abounded. Originally, it was referred to as a copulatory organ, because it was assumed that the phalloid organ was introduced into the cloaca of the female (Lesson 1831). Crook (1958) observed much of the behavior of *Bubalornis* but did not observe copulation. Consequently, no new information was gained about the phalloid organ. The only observation of copulation was made by an entomologist, F. Gaerdes, cited by Hoesch (1952). According to Hoesch, the angle formed by the axes of the bodies of two copulating birds fluctuates between 75 and 105°. He assumed that this position was brought about by the male fastening or hooking the curved distal end of the phalloid organ around the shorter phalloid organ of the female. Regrettably, the function of the phalloid organ remains in doubt. Presumably, close observation of captive birds will provide the answer. An observer could then look for evidence of clasping or of stimulation of the female by the male. Also, little is known about the development of this structure in the transition from juvenile to adult birds. Its larger size in breeding birds (Sushkin 1927) is most likely attributable to age. At any rate, lack of extensive vascularization indicates that the phalloid organ does not consist of erectile tissue.

I am grateful to Richard L. Zusi and Storrs L. Olson for their comments on this manuscript and to Peg Melville Barber for sectioning and staining the phalloid organ. Specimens were provided by Carnegie Museum of Natural History and The American Museum of Natural History. The drawings were made by Jacqui Schulz. Victor Krantz prepared the photograph. Portions of this study were supported by a

Faculty Development grant from Mount Vernon College to the author.

#### LITERATURE CITED

- BENTZ, G. D. 1979. The appendicular myology and phylogenetic relationships of the Ploceidae and Estrildidae (Aves: Passeriformes). *Bull. Carnegie Mus. Nat. Hist.* No. 15.
- BOCK, W., & R. SHEAR. 1972. A staining method for gross dissection of vertebrate muscle. *Anat. Anz.* 130: 222–227.
- CROOK, J. H. 1958. Études sur le comportement social de *Bubalornis a. albirostris* (Vieillot). *Alauda.* 26: 161–195.
- HARTERT, E. 1917. Minutes of the 218th meeting of the club. *Bull. British Ornithol. Club* 37: 51–53.
- HOESCH, W. 1952. Über die funktion des phallogenorgans beim Buffelweber (*Bubalornis albirostris niger*). *J. Ornithol.* 93: 362–363.
- KING, A. S. 1981. Phallus. Pp. 107–147 in *Form and function in birds*, Vol. 2. (A. S. King and J. McLelland, Eds.). New York, Academic Press, Inc.
- KOMAREK, V., & F. MARVAN. 1969. Beitrag zur mikroskopischen Anatomie des Kopulationsorgans der Entenvogel. *Anat. Anz.* 124: 467–476.
- LESSON, R. P. 1831. *Traité d'ornithologie*. Paris, F. G. Levrault.
- MOREAU, R. E., & J. C. GREENWAY, JR. 1962. Family Ploceidae. Pp. 3–74 in *Check-list of birds of the world* (E. Mayr and J. C. Greenway, Jr., Eds.). Cambridge, Massachusetts, Mus. Comp. Zool.
- SUSHKIN, P. P. 1927. On the anatomy and classification of the weaver-birds. *Bull. Amer. Mus. Nat. Hist.* 57: 1–32.

Received 2 August 1982, accepted 11 November 1982.

### A New Subspecies of Henslow's Sparrow (*Ammodramus henslowii*)

KEITH A. ARNOLD

Department of Wildlife and Fisheries Sciences, Texas A&M University,  
College Station, Texas 77843 USA

Paynter (in Peters 1970) recognizes two subspecies of Henslow's Sparrow: *Ammodramus* [= *Passerherbulus*] *h. henslowii*, the western form, and *A. h. surrains*, the eastern form. The A.O.U. Check-list (1957) gives the breeding range of the western form as including "... northeastern Texas ..."; this probably refers to the discovery by F. G. Watson of singing males on 27 May 1952 on a prairie near Deer Park, Harris County (Oberholser 1974). On 8 April 1973, M. Braun discovered singing males in a field in south

central Houston, Harris County; on 31 July, N. Pettingell observed an immature bird; and a census on 12 August resulted in a count of 62 adults and 9 immatures. Harris County is situated over 1,200 km from the southernmost known breeding records for *henslowii* (in Missouri). Oberholser (1974), lacking specimens, arbitrarily allocated this population to the western subspecies.

On 12 July 1975, two specimens (both males) were secured while the sparrows were being banded in

this Houston field. In comparing these two specimens to others from all parts of the range, I decided the worn plumage of the Texas specimens proscribed proper comparisons. Therefore, in 1981, I collected a female on 9 May and a male on 13 June. These 1981 specimens have allowed me to make the needed comparisons.

I measured exposed culmen, bill from anterior edge of the nostril, bill depth at anterior edge of the nostril, wing (chord), tail, and tarsus. I found no significant differences in these measurements from those of the western birds, and the Texas specimens showed the same relationships to the eastern birds as do those of the western birds, that is, the bill is longer and of greater depth in *susurrans* (Parkes 1952). Color differences between the Texas birds and western birds, however, are sufficient to warrant a description of a distinct subspecies.

*Ammodramus henslowii houstonensis*,  
new subspecies

*Type*.—Adult female; no. 11041, Texas Cooperative Wildlife Collections; south-central Houston, Harris County, Texas; 9 May 1981; K. A. Arnold; original no. KAA 5230; ovary enlarged, larvest ovum = 4 mm; skull completely ossified.

*Diagnosis*.—The darkest of the three subspecies in dorsal coloration; there is an even greater difference between *houstonensis* and *susurrans* than between *henslowii* and *susurrans*; the latter form appears more chestnut dorsally. Differs from *henslowii* in the more extensive black on the back and wing coverts and concomitant reduction in the brown (chestnut) edging of these feathers; this brown edging is darker in *houstonensis*. The rectrices are a darker, richer brown than those of *henslowii*. The green in the nape and upper back of *houstonensis* is less yellow (Yellowish Olive<sup>1</sup>) and duller than in *henslowii* (Light Yellowish Olive). The yellow of the lores in *henslowii* is absent in *houstonensis*. No obvious color differences exist in the ventral coloration.

*Measurements* (mm) (♂).—One female (the type) and three males, respectively: wing (chord), 51.8, 52.0, 48.6, 49.4; tail, 49.8, 49.9, 43.9, 44.0; tarsus, 16.8, 16.8, 16.2, 16.5, exposed culmen, 10.5, 10.7, 11.7, 11.4; bill from anterior edge of nostril, 7.7, 7.5, 8.0, 7.7;

bill depth at anterior edge of nostril, 6.2, 6.1, 6.2, 6.2; weight, 11.0, 11.7, 11.4, 11.3.

*Distribution*.—Known only from the type locality.

*Remarks*.—When comparing birds with little feather wear, one can easily distinguish this subspecies by the darker back and less yellow-green on the head. In examining a large series of birds taken during the breeding season, I noticed that specimens collected prior to 1940 showed a marked color difference; a gray suffusion appears on the entire bird.

The outlook for *houstonensis* is bleak. This population is known only from a 105-ha field, privately owned, that is located in an area now under active industrial development. Despite active searching, we have not yet located other populations of this form.

Because of the restricted range of the population, I find it appropriate to name the subspecies after its geographic location.

For the loan of comparative material I am grateful to Rollin Bauer (Cornell University), Frank B. Gill (Philadelphia Academy of Natural Sciences), Richard Johnston (University of Kansas Museum of Natural History), Wesley B. Lanyon and Lester L. Short (American Museum of Natural History), Burt L. Monroe, Jr. (University of Louisville), Kenneth C. Parkes (Carnegie Museum), Robert W. Storer (University of Michigan Museum of Zoology), Harrison B. Tordoff (Bell Museum of Natural History), and Milton B. Trautman (Ohio State University). Kenneth C. Parkes and Karl W. Haller generously shared their work on geographic variation in the Henslow's Sparrow with me. James R. Dixon and Burt L. Monroe, Jr. reviewed drafts of this paper.

LITERATURE CITED

- AMERICAN ORNITHOLOGISTS' UNION. 1957. Checklist of North Birds, fifth ed. Baltimore, Maryland, Amer. Ornithol. Union.
- OBERHOLSER, H. C. 1974. The bird life of Texas, Vol. 2. (E. B. Kincaid, Jr., Ed.). Austin, Texas, Univ. Texas Press.
- PARKES, K. C. 1952. The birds of New York State and their taxonomy. Unpublished Ph.D. dissertation, Ithaca, New York, Cornell Univ.
- PETERS, J. L. 1970. Check-list of birds in the world, Vol. 13 (R. A. Paynter, Jr., Ed.). Cambridge, Massachusetts, Harvard Univ.
- RIDGWAY, R. 1912. Color standards and nomenclature. Washington, Published by the author.

Received 27 August 1982, accepted 15 November 1982.

<sup>1</sup> Capitalized color names are those of Ridgway (1912).