GEOGRAPHICAL VARIATION IN THE CAROLINA WREN

BY GEORGE H. LOWERY, JR.

VERY little taxonomic attention has been given in recent years to the Carolina Wren, *Thryothorus ludovicianus*. However, in the course of generalized collecting in certain parts of the southern United States, I have assembled a fairly representative series of specimens. On the basis of this initial material, considerable geographical variation became evident, in addition to that which had been currently recognized. Later, through the generosity of several museums, particularly the United States National Museum and the Biological Survey, some four hundred specimens of this species have been made available for study and comparison.

The Carolina Wrens form an interesting but difficult group for study, because one must discriminate clearly between individual and geographic variation and many factors pertaining to seasonal plumage change and museum age must be taken into careful consideration. Examination of the group as a whole with ample material reveals significant differences which sporadic investigations fail to do. The former approach enables one to make distinctions much more clearly than would otherwise be the case.

I know of no species of bird in which seasonal wear of the plumage effects such a disastrous change in its coloration as in the Carolina Wren. Having only one molt annually, taking place in late summer, Carolina Wrens become bedraggled and faded often as early as March and are thus of little taxonomic value for making color comparisons. Breeding specimens are of no use whatsoever, except in those cases where the exposed-culmen measurement is a useful criterion in determining a geographical race. Even then the wear of the forehead feathers is apt to cause erroneous measurement of that part. I have handled specimens of *T. l. miamensis*, the darkest and richest colored of all races of Carolina Wrens, that were absolutely indistinguishable from similarly worn specimens of typical *ludovicianus*. There is also some evidence that museum specimens as they grow older, tend to fade to a lighter brown. Many of the old museum specimens examined in the present connection do not compare favorably with more recent specimens from the same areas.

Particularly valuable in studying these various factors affecting plumage color, was an excellent series of wrens kindly loaned by Dr. J. Van Tyne and the University of Michigan. Especially interesting were specimens shot in Tennessee and sent to Ann Arbor in the flesh. Some of these were washed thoroughly with soap and gasoline while the remainder were made up as they were received. On the specimens that were washed, careful notations were kept regarding the color of the plumage prior to cleaning.

The comparison of the two series aided by the notations inscribed on the individual labels is absolutely astounding. Some of the unwashed specimens, while not appearing to be dirty, stand out in marked contrast to those which were cleaned. It is thus evident that in a study of this particular group of birds, and doubtless others as well, the cleanliness of the individual specimens, seasonal wear, and possibly museum age are factors of primary importance and must be taken into consideration before undertaking a critical analysis of geographical variation. Specimens indicating any of the above-mentioned defects have not been considered in drawing the foregoing conclusions.

I wish to make grateful acknowledgments to the following individuals and institutions for the loan of valuable material: Dr. Harry C. Oberholser and the U. S. Bureau of Biological Survey; Dr. Herbert Friedmann and the United States National Museum; Dr. J. Van Tyne and the Museum of Zoology of the University of Michigan (including specimens from Dr. Max Peet's collection); Mr. C. C. Gregg and the Field Museum of Natural History; Dr. W. B. Davis and the Texas Coöperative Wildlife Station at the Texas Agricultural and Mechanical College; Mr. Charles H. Rogers and the Princeton Museum of Zoology; Dr. George M. Sutton and Cornell University; Dr. A. I. Ortenburger and the University of Oklahoma. For valuable advice on obscure points, I wish to thank Dr. H. C. Oberholser, Dr. J. Van Tyne, Mr. T. D. Burleigh and Mr. James L. Peters.

Measurements in this study have been made with dividers and a vernier caliper; the wing on a chord from the bend to the tip of the longest primary without straightening these feathers; and tail from the insertion of the middle pair of tail feathers to its tip. The other measurements were made also as advocated by Baldwin, Oberholser, and Worley in their 'Measurements of Birds' (Sci. Publ. Cleveland Mus. Nat. Hist., no. 2, October, 1931).

Capitalized color names are those of Robert Ridgway, 'Color Standards and Color Nomenclature,' 1912.

THRYOTHORUS LUDOVICIANUS LUDOVICIANUS (Latham)

Southern Carolina Wren

[*Motacilla Troglodytes*] γ Gmelin, Syst. Nat., ed. 13, 1, pt. 2: 994, 1789 (based on *Troglodyte de la Louisiane* Buffon, Hist. Nat. Ois., 5: 361; *Roitelet, de la Louisiane* D'Aubenton, Pl. Enl., 6: pl. 730, fig. 1).

[*Sylvia*] *ludovicianus* Latham, Index Orn., 2: 548, 1790 (based on *Troglodyte de la Louisiane* Buffon, Hist. Nat. Ois., 5: 361; *Roitelet de la Louisiane* D'Aubenton, Pl. Enl., 6: pl. 730, fig. 1).

Thryothorus ludovicianus Bonaparte, Geog. and Comp. List, p. 11, 1838.

Thryothorus ludovicianus var. *ludovicianus* Baird, Brewer, and Ridgway, Hist. No. Amer. Birds, Land Birds, 1: 142, 1874.

T[*hriothorus*] *arundinaceus* Lesson, Rev. Zool., p. 263, 1840.

Thryothorus littoralis Vieillot, Nouv. Dict. d'Hist. Nat., 34: 56, 1819.
T[hriothorus] louisianae Lesson, Rev. Zool., p. 264, 1840.
Thryothorus ludovicianus alleghani H. H. Bailey, Bull. Bailey Museum and Library, no. 2, pp. 1–3, June 1, 1924.

Subspecific characters.—A medium-sized wren; upper parts averaging mahogany red; under parts Ochraceous Buff, being decidedly paler than either *T. l. miamensis* Ridgway, *T. l. berlandieri* Baird, or *T. l. euronotus* mihi; superciliary stripe variable but averaging nearly white; sides and flanks seldom, if ever, barred or tinged with brown.

Measurements.—Adult male (sixty specimens): wing, 55.0–62.9 (average, 60.1) mm.; tail, 47.0–54.0 (49.0); exposed culmen, 15.0–17.9 (15.9); tarsus, 19.8–23.0 (21.1); middle toe, 16.0–20.6 (17.8). Adult female (forty-seven specimens): wing, 53.8–59.2 (average, 56.5) mm.; tail, 44.0–49.2 (47.8); exposed culmen, 13.6–16.8 (14.8); tarsus, 19.0–22.5 (20.8); middle toe, 16.0–19.7 (17.5).

Range.—Southeastern United States from eastern and middle Texas, western and middle Louisiana, and central and southern Arkansas, east through central and northern Mississippi, Tennessee, southern Kentucky, northern and central Alabama and Georgia into South Carolina and North Carolina.

Specimens examined.—In all, 140: *Louisiana* (Belcher, Lecompte, Belair, New Orleans, Foster, Clarks, Natchitoches, Avery Island, Tunica, Baton Rouge, University, Jackson, Sulfur, Golden Meadow, Little Chenier, Alexandria), 38; *Mississippi* (Tishomingo County, Ariel), 3; *Alabama* (Catherine, Muscle Shoals, Ardell, Jackson, Carleton, Stockton, Hayneville), 9; *Georgia* (Newton, Athens, Blakely, Roswell, Waynesboro, Lumpkin, Tifton), 11; *South Carolina* (Georgetown, Wayne's Place, Bowman, Porcher's Bluff, Saluda Gap, Christ Church Parish, Kershaw County), 14; *North Carolina* (Pisgah National Forest, Chapanoke, Ashville, Cape Hatteras, Wilson, Fort Macon, Bath, Manteo, Mt. Mitchell), 19; *Tennessee* (Norris, Tazewell, Watauga Valley, Maynardville), 21; *Texas* (Bowie County, Riverside, Huntsville, Livingston, College Station, Jefferson, Bastrop, Virginia Point, Bryan, Sour Lake, Trinity County, Austin, Columbia, Eastland, Matagorda, Crystal City), 25.

Remarks.—In view of the wide distribution of wrens heretofore referred to as *Thryothorus ludovicianus ludovicianus*, it was obviously necessary to decide to which geographical stock Latham's name best applied. The term "Louisiana" has for a long time sufficed as the type locality of *T. l. ludovicianus*. However, in the days of Latham Louisiana covered pretty much the same area incorporated in the Louisiana Purchase, a fact lost sight of possibly in modern works of zoögeography when one is apt to think of Louisiana as merely the present State. As it is probable that earlier specimens of Carolina Wrens, and hence the type, came from New Orleans or environs, I restrict the type locality of *T. l. ludovicianus* to that area. Still further, to avoid possible confusion with races herein described or referred to, topotypes may best apply to birds taken *along the Mississippi River at New Orleans*. The incorporated limits of the City of New Orleans comprise the entire Parish of Orleans and in an eastward direction extend some thirty miles from the city proper, carrying one into the pine-woods

region bordering the Mississippi state line and the eastern shores of Lake Pontchartrain where another distinct geographical race is to be encountered. Birds from along the Mississippi River at New Orleans present the maximum individual variation within the race which they typify.

The use of H. H. Bailey's *Thryothorus ludovicianus alleghani* (loc. cit.), with type locality in Cobb County, Georgia, seems out of the question. In the first place Bailey used Washington, D. C., Maryland, and South Carolina specimens as representatives of *T. l. ludovicianus* (Latham), whereas he should have used topotypical Louisiana specimens. As will be shown later, birds from Washington, D. C., and Maryland are not referable to *T. l. ludovicianus*. For this reason and since birds from the lower Alleghanies and the Upper Piedmont region are nearly typical *ludovicianus*, it was not difficult for Bailey to show how they differed from the northern birds. The new name was given to the wrong series of birds! Had he used Louisiana material it would have been evident which series needed to be named. Birds from middle and eastern Texas (College Station, Huntsville, Austin, etc.) are not exactly typical and undoubtedly represent intergrades as do birds from still farther west. Since they appear closer to this form they are included here.

Thryothorus ludovicianus euronotus new subspecies

Southeastern Carolina Wren

Type.—Adult male, no. 342079, U. S. Nat. Mus., Biological Survey collection; Gulfport, Mississippi; November 20, 1937; T. D. Burleigh; original number 4798.

Subspecific characters.—Resembling *T. l. miamensis* Ridgway from which it differs in being smaller (size difference of exposed culmen absolute, judging from specimens examined) and by its somewhat lighter and less rich coloration; from *T. l. ludovicianus* (Latham), it differs in being decidedly darker.

Measurements.—Adult male (eight specimens): wing, 59.5–61.8 (average, 60.6) mm.; tail, 48.0–52.5 (50.5); exposed culmen, 15.0–16.3 (15.7); tarsus, 21.0–22.8 (21.7); middle toe, 18.1–19.5 (18.7). Adult female (six specimens): wing, 55.0–57.0 (average, 56.4) mm.; tail, 45.0–49.8 (46.6); exposed culmen, 13.6–15.5 (14.6); tarsus, 20.0–21.8 (20.7); middle toe, 15.3–19.7 (17.5).

Range.—Central Gulf Coast region of southern Georgia, and extreme northern Florida, westward through southern Alabama, southern Mississippi and extreme southeastern Louisiana.

Specimens examined.—In all, 28: *Mississippi* (Saucier, Bay St. Louis, Gulfport, Deer Island), 9; *Georgia* (Okefinokee Swamp, Riceboro, Valdosta, Woodbine, Blackbeard Island, Darien, Savannah, Brunswick), 12; *Florida* (Milton, Gonzalez, St. Marks, Lake Iamonia), 5; *Louisiana* (Slidell), 2.

Remarks.—Ridgway (Bull. U. S. Nat. Mus., no. 50, part 3, pp. 545–546, 1904) called attention to the fact that birds from the Suwanee River region of northern Florida are neither typical *miamensis* nor *ludovicianus*. He further suggested the possibility that birds from this area were subspecifically distinct, but he did not make the separation, probably due to the lack

of sufficient material. I have seen all of the specimens which Ridgway reviewed as well as a fine series from the Okefinokee Swamp and other points in southern Georgia; moreover, an excellent series from southern Mississippi has been available. With this material at hand it immediately became apparent that the wrens occupying this wide coastal belt deserve nomenclatural recognition. Remarkable is the uniformity of coloration demonstrated in the specimens examined. While superficially the coloration of the upper parts particularly, appears somewhat intermediate between *miamensis* and *ludovicianus*, the tone is so different that it can be recognized at a glance. This fact, in addition to the smallness of the bill (less than in either *ludovicianus* or *miamensis*), forms in my opinion sufficient ground for its recognition.

Specimens from Savannah, Woodbine, Blackbeard Island, and other localities in eastern Georgia are intermediate between *euronotus* and *ludovicianus*. Similarly, birds examined from the extreme northern part of the Florida peninsula are intermediate between *euronotus* and *miamensis*. Intergradation with *ludovicianus* apparently also takes place in the pine-woods region of eastern Louisiana. Of a fairly large series of wrens examined from Baton Rouge, only one specimen suggests *euronotus*, hence the birds from that area are included in the range of *ludovicianus*. However, farther east at Slidell, two fresh fall specimens taken prove to be almost typical *euronotus*, thus bringing the range of that form well within the boundaries of Louisiana.

Thryothorus ludovicianus burleighi new subspecies

Burleigh's Carolina Wren

Type.—Adult male, no. 342080, U. S. Nat. Mus., Bureau of Biological Survey collection; Cat Island, Mississippi, nine miles offshore from Gulfport, Mississippi; February 24, 1937; T. D. Burleigh; original number, 4297.

Subspecific characters.—Similar to *T. l. ludovicianus* (Latham) to which it is most closely related, but differs in being somewhat duller and more sooty above and averaging slightly paler below; color of the pileum not a great d al duller than the back; barring of the tail less distinct than in *ludovicianus;* size not significantly different from *T. l. euronotus* but easily distinguished from that race on the basis of its lighter coloration.

Measurements.—Adult male (seven specimens): wing, 59.0–62.0 (average, 60.5) mm.; tail, 48.2–52.0 (50.0); exposed culmen, 15.4–16.5 (15.8); tarsus, 19.9–22.0 (21.4). Adult female (four specimens): wing, 56.1–58.0 (average, 57.7) mm.; tail, 46.0–48.5 (46.9); exposed culmen, 14.0–15.0 (14.7); tarsus, 20.0–21.0 (20.5).

Range.—Resident on the islands lying well offshore from the Mississippi Coast; known to occur on Cat Island, Ship Island, and Horn Island. Not improbably it will be found on certain of the islands off the Alabama and Louisiana coast as well.

Specimens examined.—In all, 11: *Mississippi* (Cat Island, 3; Ship Island, 2; Horn Island, 6).

Remarks.—This island race of the Carolina Wren can be by careful comparison recognized in either sex by its rather duller and more sooty upper parts. In coloration it is closest to *ludovicianus*, but aside from its insular isolation, the intervention of the dark race *euronotus* of the Mississippi mainland prevents it from coming into geographical contact with the Louisiana birds. Birds of Cat Island are but nine miles distant from the wrens found about Gulfport. However, it is extremely doubtful whether any wrens from the island ever attempt to reach the mainland by crossing this expanse of water. The coastal islands have sandy soil and are covered by an open growth of slash pine, with an undergrowth of palmetto. Such conditions, it is true, exist on the mainland but are entirely avoided by the Carolina Wren, which is limited in its habitat preferences by the thick swampy woods bordering the streams. On the outer islands, Burleigh's Wren is surprisingly common. Ship Island is twelve miles offshore and Horn Island is sixteen, these distances again over open water and probably thus limiting any movement of this sedentary species to the mainland. Deer Island is, at its western end, less than a mile offshore, and there, as expected, birds taken prove to be *T. l. euronotus*.

This new race is named for Mr. Thomas D. Burleigh, the veteran field ornithologist, who, by his observations and collections, has added so immensely to the knowledge of the ornithology of the Gulf Coast of the southeastern United States in the brief period of four years during which he has resided there.

THRYOTHORUS LUDOVICIANUS MIAMENSIS Ridgway

Florida Wren

Thryothorus Ludovicianus var. *Miamensis* Ridgway, American Naturalist, 9: 469, August 1, 1875 (type locality, Miami River, Florida).

Subspecific characters.—Most similar to *T. l. berlandieri* Baird of northern Mexico but decidedly larger (the largest of all races) and much darker and richer; upper parts rich chestnut to dark chestnut; under parts ochraceous tawny, barred with chestnut on the sides; superciliary stripe buff; barring on tail and wing averaging much darker than in other races; exposed culmen averaging over 17 mm.

Measurements.—Adult male (sixteen specimens): wing, 59.0–64.6 (average, 62.5) mm.; tail, 49.0–54.0 (50.8); exposed culmen, 17.0–19.0 (17.8); tarsus, 21.5–23.8 (22.7); middle toe, 17.5–21.0 (19.5). Adult female (seven specimens): wing, 56.4–59.0 (average, 57.8) mm.; tail, 47.0–48.0 (47.3); exposed culmen, 16.4–18.0 (17.0); tarsus, 22.0–23.5 (22.6); middle toe, 18.0–19.0 (18.2).

Range.—Peninsula of Florida, typical from Gainsville and Palatka southward.

Specimens examined.—In all, 45: *Florida* (Lake Kissimmee, Palatka, Gainsville, Shell Bluff, Lake Arbuckle, Istakpoga, Planter, Deep Lake, Ocklawaha River, Fort Gardner, Seven Oaks, Canal Point, Big Lake George, Silver Springs, New Smyrna, Manatee County, Bradford).

THRYOTHORUS LUDOVICIANUS CAROLINIANUS (Wilson)

Northern Carolina Wren

Certhia caroliniana Wilson, Amer. Ornith., 2: 61, pl. 12, fig. 5, 1810 (type locality, along shores of the Delaware thirty or forty miles below Philadelphia; type in Peale's Museum).

Subspecific characters.—Most closely related to *T. l. ludovicianus* (Latham), but decidedly lighter in color; upper parts Auburn Brown, never as dark as *ludovicianus;* superciliary stripe Light Buff; size about the same as *ludovicianus* except that exposed culmen averages slightly larger.

Measurements.—Adult male (twenty-eight specimens): wing, 58.0–63.8 (average, 60.9) mm.; tail, 47.5–54.5 (50.7); exposed culmen, 15.0–17.7 (16.4); tarsus, 20.0–22.8 (21.1); middle toe, 16.2–20.9 (18.2). Adult female (twenty specimens): wing, 54.5–58.0 (average, 56.7) mm.; tail, 45.0–51.0 (46.9); exposed culmen, 14.6–16.2 (15.2); tarsus, 19.5–22.0 (20.5); middle toe, 16.0–19.5 (17.7).

Range.—Northern portion of the Upper Austral Zone from southern Iowa east through Illinois, Indiana, Ohio, southern Michigan, southern Pennsylvania, Maryland, Delaware, middle northern Virginia and the Hudson and Connecticut valleys south to eastern Oklahoma, southern Missouri and extreme northern Arkansas.

Specimens examined.—In all, 121: *Washington, D. C.*, 31; *Maryland* (Laurel, Plummer Island, Piney Point, Oxen Hill, Brandville, Baltimore), 11; *Virginia* (Roselyn, Hampton, Norfolk, Four Mile Run, Cape Charles, Eastville, Ballston, Essex County, Falls Church, Pine Forest, Tidewater, Scott Run, Fairfax County), 37; *Pennsylvania* (Bellowsville, Beaver), 4; *Ohio* (Madisonville, Muskingum County), 3; *Indiana* (Wheatland, Knox County), 3; *Illinois* (Wabash County, "southern part," Henderson County, Olney), 6; *Michigan* (Erie, Long Point), 4; *Kansas* (Douglas County near Lawrence), 4; *Arkansas* (Vanburen, Clinton), 3; *Oklahoma* (Broken Bow, Idabel, Mt. Scott, Tulsa, Cleveland County, Kiowa Indian Agency, Cheyenne, Jay), 15.

Remarks.—For this northern form of the Carolina Wren, Wilson's name seems fully applicable. Although Wilson mentions (loc. cit.) South Carolina wrens under the name *Certhia caroliniana,* his description and drawing are unquestionably based on a specimen taken in southeastern Pennsylvania, "thirty or forty miles below Philadelphia." Hence this place becomes the type locality for the present race. Since this race is quite distinct from other races, it is surprising that it has not been recognized heretofore. In the large series examined, there seems to be much less individual variation than in most other forms, particularly *ludovicianus,* which is in effect the most variable of all.

Thryothorus ludovicianus oberholseri new subspecies

Oberholser's Carolina Wren

Type.—Adult male, no. 342081, U. S. Nat. Mus., Biological Survey collection; Del Rio, Texas, along the Rio Grande; December 30, 1938; Thomas D. Burleigh; original number 5439.

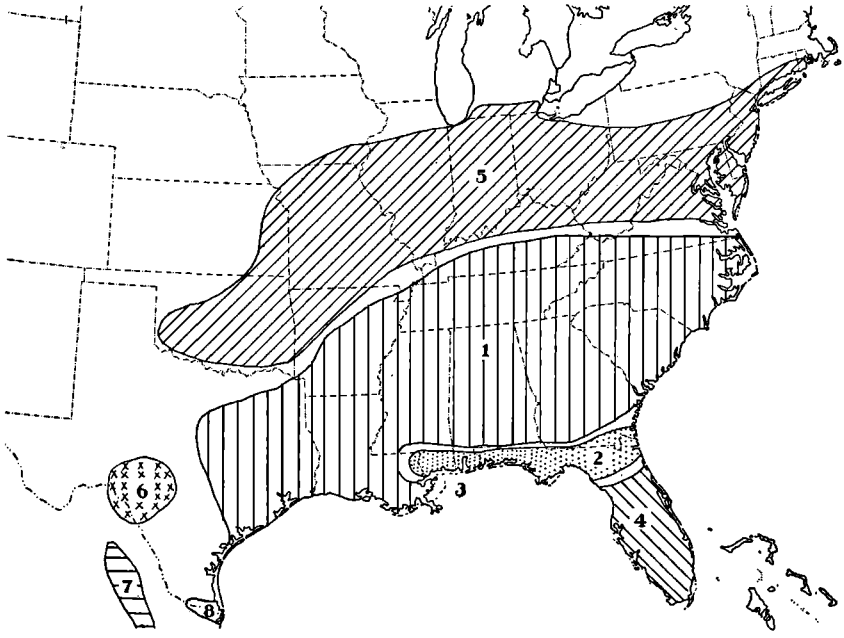
Subspecific characters.—Similar to *T. l. ludovicianus* (Latham) but decidedly darker and duller on the upper parts; under parts distinctly more buffy, but not nearly as dark as *T. l. berlandieri* Baird; sides and flanks sometimes barred with

Dusky Brown; in size like *T. l. ludovicianus*, and hence much larger than *T. l. berlandieri* or *T. l. lomitensis* Sennett; upper parts not much duller than pileum.

Measurements.—Adult male (three specimens): wing, 59.6–61.3 (average, 60.7) mm.; tail, 50.0–53.0 (51.7); exposed culmen, 15.0–16.1 (15.5); tarsus, 21.0–22.0 (21.5); middle toe, 17.7. Adult female (four specimens): wing, 53.8–59.0 (average, 57.0) mm.; tail, 45.0–49.0 (47.7); exposed culmen, 13.5–16.0 (15.3); tarsus, 21.0–21.5 (21.2).

Range.—Middle Texas from at least Junction in Kimble County, south to the Rio Grande; exact limits of the range imperfectly known.

Specimens examined.—Ten: *Texas* (Del Rio, Langtry, Junction, Mountain Home, mouth of the Devils River, mouth of Pecos River).



TEXT-FIG. 1.—Provisional map showing distribution of races of *Thryothorus ludovicianus* (Latham). 1, *T. l. ludovicianus;* 2, *T. l. euronotus;* 3, *T. l. burleighi;* 4, *T. l. miamensis;* 5, *T. l. carolinianus;* 6, *T. l. oberholseri;* 7, *T. l. berlandieri;* 8, *T. l. lomitensis.* Blank areas between ranges represent areas of intergradation or areas from which no specimens were available.

Remarks.—Additional specimens from critical localities in central Texas are necessary before the limits of this race can be fully stated. A fairly large series of specimens has been available from Austin, College Station, Huntsville, etc., and while some of these show certain characteristics of *T. l. oberholseri*, they are nevertheless more closely referable to *T. l. ludovicianus*. One specimen from Junction, Kimble County, is clearly referable to *T. l. oberholseri* which might indicate that this race occupies a consider-

able part of the juniper area west of Austin. Somewhat confusing are two fresh fall specimens from Kendall County (in Princeton Museum of Zoology collection) which are decidedly different from all of the 400 odd wrens examined in the present connection. They represent both sexes and are remarkably uniform in coloration which is very light above and below. As a matter of fact, the under parts, especially the belly, of these two birds are almost white. Due to the uniformity of the two specimens and the fact that they are in clean, unworn plumage, I hesitate to identify them subspecifically until other specimens from that locality can be examined.

Likewise, a specimen from Crystal City, Texas, a point lying some 200 miles northwest of Brownsville, is interesting. Although Hellmayr ('Catalogue of the Birds of the Americas,' Field Mus. Nat. Hist., zool. ser., 13: pt. 7, p. 155, Nov. 1934) referred this specimen to *T. l. lomitensis* Sennett, in my opinion it can by no means be construed as belonging to that race as it is much too large and rich brown in coloration, rather than the dull grayish brown of *lomitensis*. In fact, it probably represents an intergrade between *oberholseri* and *ludovicianus*. As indicated henceforth, *lomitensis* is a bird of the Lower Rio Grande Valley. When one views the great areas apparently uninhabited by Carolina Wrens bordering the Rio Grande above and below Laredo, the isolation of *lomitensis* becomes obvious. It thus seems highly improbable that *lomitensis* comes geographically in contact with other races thereby suggesting a factor which might be responsible for its clear-cut taxonomic characters. This new race is named for Dr. Harry Church Oberholser in further recognition of his work on the birds of Texas.

THRYOTHORUS LUDOVICIANUS BERLANDIERI Baird

Berlandier's Carolina Wren

Thryothorus berlandieri Baird, Rep. Explor. and Surv. R. R. Pacific, p. 362, 1858 (type from Boquillo, Nuevo Leon, northeastern Mexico; coll. U. S. Nat. Mus.).

Subspecific characters.—A small yet long-billed wren with exceedingly dark under parts which are usually heavily barred with brown or tawny on the sides and flanks; upper parts like *T. l. ludovicianus* and *T. l. oberholseri* but very much duller and more grayish.

Measurements.—Adult male (eight specimens): wing, 56.8–61.2 (average, 59.0) mm.; tail, 45.1–51.7 (45.9); exposed culmen, 15.8–18.2 (17.1); tarsus, 20.5–21.9 (21.5); middle toe, 17.6–20.0 (18.4). Adult female (seven specimens): wing, 54.2–58.7 (average, 55.4) mm.; tail, 45.0–47.3 (46.2); exposed culmen, 15.0–17.0 (16.4); tarsus, 19.8–22.0 (21.1); middle toe, 17.0–19.0 (17.8).

Range.—Northeastern Mexico, in the States of Nuevo Leon, western Tamaulipas, and northern Coahuila.

Specimens examined.—In all, 17: *Nuevo Leon* (Monterrey, Santa Catarina, Montemorelos, Rodriguez, Cerro de la Silla, Linares), 16; *Coahuila* (Sabinas), 1.

THRYOTHORUS LUDOVICIANUS LOMITENSIS Sennett

Lomita Wren

Thryothorus ludovicianus lomitensis Sennett, Auk, 7: 58, 1890 (type locality, Lomita Ranch, Hidalgo County, Texas).

Subspecific characters.—A small dull-colored wren similar to *T. l. berlandieri* but averaging duller on the upper parts and with the under parts decidedly paler; back usually dull grayish, Prout's Brown or Warm Sepia; superciliary stripe pure white; sides and flanks almost always barred as in *berlandieri.*

Measurements.—Adult male (two specimens): wing, 57.0–58.0 (average, 57.5) mm.; tail, 51.0 (51.0); exposed culmen, 15.7–16.4 (16.0); tarsus, 21.0–21.5 (21.2); middle toe, 19.0–20.0 (19.5). Adult female (three specimens): wing, 53.5–56.0 (average, 55.0) mm.; tail, 46.0–48.0 (47.0); exposed culmen, 15.8–15.9 (15.8); tarsus, 20.0–22.0 (21.0); middle toe, 17.0–18.0 (17.5).

Range.—Lower Rio Grande Valley in Texas and northern Tamaulipas.

Specimens examined.—In all, 13: *Texas* (Brownsville, Los Fresnos, Hidalgo, Cameron County unspecified), 10; Tamaulipas (Camargo, Matamoras), 3.

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