

September, not rare, in fact rather common. Blood's (Calaveras Co.), July 16, 1880, shot an adult female which probably had a nest; specimen sent to the Smithsonian Institution."<sup>1</sup>

Dr. A. K. Fisher in his report on the birds of the Death Valley expedition,<sup>2</sup> says of this species: "Mr. Nelson saw a fine adult male Pine Grosbeak in brilliant plumage on the head of the San Joaquin River, July 30 (1891). This individual was the only one seen during the year."

I have described this form as a subspecies somewhat in opposition to the canons of the American Ornithologists' Union, for I have seen no examples of intergradation. However, these may be expected from the higher mountains northward, the Sierra form being the most southern representative of the genus.

Unlike the Pine Grosbeaks living in the far north, these birds probably find it unnecessary to migrate any great distance in winter. If the weather is too severe on the alpine summits, they can in a moment drop down into the deep cañons which furrow the western flank of the Sierra, and find a temperate climate and abundance of food.

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## CRITICAL REMARKS ON *CISTOTHORUS PALUSTRIS* (WILS.) AND ITS WESTERN ALLIES.

BY HARRY C. OBERHOLSER.

THE typical form of *Cistothorus palustris* inhabits the greater portion of the eastern United States and southern British America, west to at least Kansas and Manitoba. Upon the Pacific Coast it is replaced by *Cistothorus p. paludicola* of Baird; while the birds

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<sup>1</sup> Land Birds of the Pacific District, by Lyman Belding. Occasional Papers of the Calif. Acad. of Sciences, II, 1890, p. 131.

<sup>2</sup> North American Fauna, No. 7, Pt. II, U. S. Dept. of Agriculture, Washington, 1893, p. 79.

from the intermediate region belong to an apparently undescribed geographical race.

Considered with reference to its western representatives *palustris* presents the extreme of darkness and richness in the coloration of the upper parts and flanks. The Pacific Coast bird is, however, nearly as dark above, though the colors are duller; but the form from the Great Basin is paler than either. In *palustris* the lower parts are usually clearer white, the bill averages longer, the wings and tail shorter than in either of the western races. The eastern bird further differs in having the middle tail-feathers usually without regular or distinct bars, the upper and lower tail-coverts not barred; but no one of these characters is quite constant. In most examples of *palustris* (90 per cent of the specimens examined) the markings of the central rectrices are reduced to mere spots or scarcely indicated bars, being rarely so regular or so clearly defined as in extreme examples of the western races. In 94 per cent of the available specimens of *palustris* the superior tail-coverts are found to be without appreciable transverse markings; while the remaining 6 per cent exhibit fairly well defined bars. The absence of distinct bars on the lower tail-coverts serves to distinguish 71 per cent of the specimens examined, and is apparently a fair average character, though some of the remaining 29 per cent have these markings fully as dark and as clearly indicated as in the most typical examples of the western forms.

Professor Baird, in distinguishing <sup>1</sup> *palustris* from his *paludicola* says of the former, "bill lengthened, equal to tarsus"; but reference to the measurements given in the present paper will at once show the fallibility of this character.

Fall specimens of *palustris* are, as a rule, noticeably darker and more richly colored than those taken in spring or summer, this affecting chiefly the brown portions of the plumage; but in this respect there is at all seasons considerable individual variation.

Among the specimens at hand, most of them from Illinois and from the vicinity of Washington, D. C., much difference exists in the amount of paler color on the pileum. This lighter brown

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<sup>1</sup> Review of American Birds, I, 1864, 148.

sometimes covers all but a narrow lateral stripe of normally black, occasionally clove brown, but is sometimes almost absent, being restricted to the central portion of the forehead, the remainder of the pileum being in such case solid black. That this variation is not due to sex may at once be seen by reference to the specimens; and that it is not due to season is equally apparent, since among birds taken in the fall as well as in the spring both these extremes of coloration exist. That a change from brown to black is not produced by the wearing away of the tips of the feathers, as suggested by Dr. Sharpe<sup>1</sup> in connection with *Cistothorus p. paludicola*, is conclusively proved by the fact that many of the birds with most black upon the head are those in freshly molted spring and fall plumages, while a July specimen in worn plumage has the central part of the pileum brown in marked contrast to the black of the lateral portions. These facts seem to indicate that the differences noted are, as mentioned by Dr. Coues,<sup>2</sup> not correlated with any age, sex, or season, but are the result of purely individual variation.

It has for various reasons been deemed advisable to here include a reasonably complete synonymy of the two western forms; and the present writer is responsible for the correct citation of all references.

The type of Professor Baird's *Cistothorus palustris* var. *paludicola* came from Shoalwater Bay, Washington, and is still in the National Museum. Examination shows it to represent the dark Pacific Coast race, for which the name therefore becomes available. No other specific or subspecific designations appear to have been bestowed upon either of the western forms, and the bird from the interior being thus without a name, may be called

### *Cistothorus palustris plesius*, subsp. nov.

*Troglodytes palustris* GAMBEL, Proc. Acad. Nat. Sci. Phila. III, 1846, 113; NEWBERRY, U. S. P. R. R. Rep. VI, 1857, Zool. 80 (part); SWAINS. & RICH. Fauna Bor.-Amer. II, 1831, 319 (part); HENRY, Proc. Acad. Nat. Sci. Phila. VII, 1855, 309.

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<sup>1</sup> Cat. Birds in Brit. Mus., VI, 1881, 243.

<sup>2</sup> Birds of Colorado Valley, 1878, 179.

*Troglodytes arundinaceus* GAMBEL, Journ. Acad. Nat. Sci. Phila. I, 1847, 33.

*Cistothorus (Telmatoodytes) palustris* BAIRD, U. S. P. R. R. Rep. IX, 1858, 364 (part).

*Telmatoodytes palustris* HENRY, Proc. Acad. Nat. Sci. Phila. XI, 1859, 107; COUES, Birds Northwest, 1874, 34 (part); *id.* Birds Colo. Valley, 1878, 178 (part); RIDGWAY, Bull. Essex Inst. V, 1873, 180 (Colorado); DREW, B. N. O. C. VI, 1881, 88; COUES, Key to N. A. Birds, 1872, 87 (part).

*Cistothorus palustris* SCLATER, Cat. Amer. Birds, 1861, 22 (part); COUES, Ibis, 1865, 164; *id.* Proc. Acad. Nat. Sci. Phila. XVIII, 1866, 78 (Arizona); COOPER, Birds Calif. 1870, 75 (part); ALLEN, Bull. Mus. Comp. Zool. III, 1872, 175 (Utah); AIKEN, Proc. Bost. Soc. N. H. XV, 1872, 196; MERRIAM, Ann. Rep. U. S. Geol. Sur. Terr. for 1872, 1873, 673 (part); GODMAN & SALVIN, Biol. Cent. Am., Aves, I, 1880, 104 (part); A. O. U. Check-List N. A. Birds, 1886, 330 (part); SCOTT, Auk, V, 1888, 165; MERRIAM, N. A. Fauna No. 3, 1890, 100; *id. ibid.* No. 5, 1891, 107; ATTWATER, Auk IX, 1892, 343.

*Cistothorus palustris* var. *paludicola* BAIRD, Rev. Amer. Birds, I, 1864, 148 (part); BAIRD, BREWER & RIDGWAY, Hist. N. Am. Land Birds, I, 1874, 161 (part); HENSHAW, Ann. Lyc. Nat. Hist. N. Y. XI, 1874, 3; HENSHAW, Geog. & Geol. Surv. W. 100 Mer. V, 1875, 185 (part).

*Telmatoodytes palustris* var. *paludicola* LAWRENCE, Mem. Bost. Soc. Nat. Hist. II, 1874, 268; YARROW & HENSHAW, Rep. Orn. Specs., 1874, 9; HENSHAW, Rep. Orn. Spec. 1874, 41, 74, 101.

*Telmatoodytes palustris*  $\beta$  *paludicola* RIDGWAY, Geol. Ex. 40th. Par. IV, 1877, 425 (part).

*Cistothorus paludicola* SHARPE, Cat. Birds Brit. Mus. VI, 1881, 242 (part).

*Telmatoodytes palustris paludicola* BREWSTER, B. N. O. C. VII, 1882, 227; ALLEN & BREWSTER, B. N. O. C. VIII, 1883, 155.

*Cistothorus palustris paludicola* RIDGWAY, Man. N. A. Birds, 1887, 556 (part); A. O. U. Check-List, 1st Supplement, 1889, 16 (part); A. O. U. Check-List N. A. Birds, 1895, 302 (part); MERRILL, Auk, V, 1888, 362; STEPHENS, Auk, VII, 1890, 297; FANNIN, Check List Brit. Col. Birds, 1891, 43; FISHER, N. A. Fauna No. 7, 1893, 136; RIDGWAY, Manual N. A. Birds, 1896, 556 (part).

CHARS SUBSP. — *Cistothorus C. palustris affinis*, a quo differt *rectricibus mediis, subcaudalibus et supracaudalibus distincte ac regulariter transfasciatis; corpore superiore, colli capitisque lateribus cum hypochondriis pallidioribus atque paulo canescentioribus; pilei partibus obscurioribus magis restrictis brunneis nec nigris; rostro brevioris, alis caudaque longioribus.*

Al., 48-57 (52.5) mm.; caud., 41.5-51 (46.1) mm.; culm. exp., 11-13.5 (12.4) mm.; tars., 17-20 (18.7) mm.

*Habitat.* — Western United States except the Pacific Coast; north to British Columbia and Alberta, east to the Rocky Mountains and Texas, south into Mexico.

*Description.* — *Type*, male, adult, No. 114938 U. S. Nat. Mus.; Fort Wingate, N. M., Sept. 24, 1888; Dr. R. W. Shufeldt. Cervix and center of crown bistre brown, rather darker on the former; a streak on each side of crown extending backward to cervix, clove brown; lower cervix, and a triangular patch on interscapulum, broadest anteriorly where spreading out toward sides of neck, black, the feathers of the latter with broad white shaft streaks; remainder of upper parts brown, shading from broccoli brown on the anterior portions of scapulars to reddish raw umber on rump, and to a darker shade of same on upper tail-coverts, which last are distinctly barred with blackish. Middle pair of tail-feathers like upper tail-coverts, and quite regularly barred with black; other rectrices of a similar color, but shading to broccoli brown toward their tips and on their inner vanes, marked with heavy bars of black, which except on outer pair are strongly inclined to be confluent. Wing quills dark olive brown; the superior coverts, together with the indentations and edgings on quills, grayish raw umber, these markings much paler, almost buffy white on the primaries; outer vanes of tertials and roundish spots on external webs of greater coverts, black. Superciliary stripe, and middle portion of under parts, soiled white; lores grayish white; sides of head and neck, with auriculars, grayish white, mixed with buffy; a band across the chest distinctly buffy grayish; sides and flanks pale wood brown; anal region buff; lower tail-coverts dull white, closely barred with deep buff and to a less extent with dark brown.

*Young male*, No. 82772 U. S. Nat. Mus.; Parley's Park, Utah, July 28, 1869; R. Ridgway. Pileum and post-ocular stripe clove brown; cervix and upper back grayish white, much mottled by the dark brown margins of the feathers; a small spot in center of interscapulum black; remainder of upper parts reddish raw umber brown; tail the same color, though rather paler and grayer towards its tip, regularly barred with brownish black, which color also almost entirely occupies the inner webs of all but the central rectrices. Wings bistre brown, margins of quills and coverts like the back. Sides of neck and head dull grayish white, mixed with brownish; anterior lower parts brownish gray; posterior lower parts and superciliary stripe grayish white, the former with a buffy tinge; sides, flanks and crissum dull buff. "Upper mandible, sepia-black; commissure and lower mandible, pale lilaceous; iris, brown; tarsi, dark sepia-plumbeous; toes, paler, whitish beneath."<sup>1</sup>

This subspecies differs from true *palustris* in the usual presence of regular, distinct and much heavier bars on the two middle tail

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<sup>1</sup> Ridgway, Geol. Ex. 40th Parallel, IV, 1877, 426.

feathers, and in its generally barred upper and lower tail-coverts. Though none of these characters are entirely constant, they nevertheless furnish good average distinctions. The first mentioned prevails in 67 per cent; that of barred upper tail-coverts in 71 per cent; and the lower tail-coverts are transversely marked in 90 per cent of the specimens examined, although in many cases the barring, while perfectly evident, is not blackish, but buff. The lower parts in *C. p. plesius* are commonly rather grayer and less purely white than in *palustris*. The bill averages considerably shorter, the wings and tail somewhat longer. The flanks and upper parts, including the sides of neck and head, are much paler and usually somewhat more grayish, this affecting chiefly the brown portions of the plumage. In the shade of these parts fall specimens of *plesius* are very close to some spring and summer examples of *palustris*, but can usually by the other characters be easily distinguished. Comparison of specimens taken at corresponding seasons, however, makes at once evident the differences between the two forms. The lighter brown of the central portion of the pileum averages much paler and more extensive in *plesius* than in *palustris*. There are among the specimens examined none of the latter which have the lighter brown so pale or so extensive as seen in some of the former; and none of this western race have the dark lateral stripes so intense in color as have many examples of the eastern bird.

The most noticeable character which separates *C. p. plesius* from *paludicola* is the much paler color of both the upper and lower parts, this difference being usually most apparent on the flanks, upper surface of the wings, scapulars, lower back and rump. The wings, tail and bill average somewhat longer; and the total length of culmen is decidedly longer than middle toe without claw, which is not the case with *paludicola*. So far as is indicated by the specimens examined, the bars on the middle rectrices of *plesius* average broader and somewhat more regular than in *paludicola*. The area of light brown on the crown averages very much more extensive than in *paludicola*, often reducing to mere lateral stripes the dark brown or blackish color. This difference, as well as the paler general color of the birds from the western interior, was

mentioned by Professor Baird,<sup>1</sup> but was apparently not considered as a subspecific distinction.

The summer specimens of *Cistothorus p. plesius* are all in much worn plumage, but indicate what is borne out by the two spring birds at hand, — that fall birds are, as would be expected, darker and more richly colored, although among the fall specimens there exists considerable individual variation, particularly in the brown colors of the upper parts.

A fall specimen from South Edmonton, Alberta, and one from Fort Brown, Texas, are much brighter tawny above than any of the others examined, but are both very much paler than *palustris*. One example from Fort Klamath, Oregon (U. S. N. M. No. 94757, Aug. 12, 1883), is rather intermediate between *plesius* and *paludicola*, but is perhaps best referred to the former. A November specimen from the same locality is, however, quite typical of *plesius*, having very probably migrated thither from the interior. A bird from Fort Crook, Calif., taken on March 31, is quite typical of the present race, and doubtless represents the breeding form at this place, since at Eagle Lake, Calif., which lies in a similar and neighboring region, *C. p. plesius* has been taken during the summer season. A specimen from Caribou Road, British Columbia, is not perfectly typical of the present subspecies, but somewhat approaches *paludicola* in the generally duller and rather darker shades of the upper parts. In Arizona and adjacent parts of Mexico there not infrequently occur fall examples which in depth of color are clearly intermediates verging towards *paludicola*; but such are usually somewhat nearer the Great Basin form.

Although no Colorado specimens have been examined, *plesius* undoubtedly extends eastward as far as the Rocky Mountains. Whether or not this form breeds in Texas remains yet to be ascertained, as the only specimens at hand are evidently migrants. Very typical examples of *plesius* have been taken at Miraflores, Lower California, and at Mazatlan, in the State of Sinaloa, Mexico, but these excepted, there are available none from Mexico south of the United States Boundary Line. The Long-billed Marsh Wren has been recorded by Mr. Sclater from Tomatlan,

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<sup>1</sup> Baird. Brewer and Ridgway, Hist. N. Am. Land Birds, I, 1874, 162.

Vera Cruz,<sup>1</sup> and from near the City of Mexico;<sup>2</sup> but without recourse to the specimens it is impossible to certainly determine to which subspecies they are referrible. The inclusion of Guatemala in the range of the Long-billed Marsh Wren is evidently a mistake, as pointed out by Messrs. Godman and Salvin.<sup>3</sup>

The specimens of *Cistothorus palustris plesius* examined in the present connection represent the following localities, breeding birds being indicated by an asterisk :

**Alberta.** — South Edmonton.

**British Columbia.** — Caribou Road.

**Washington.** — Marshall; Fort Walla Walla.

**Oregon.** — Fort Klamath; Burns.\*

**California.** — Death Valley; Marysville; Fort Crook; Eagle Lake.\*

**Nevada.** — Ash Meadows; Truckee Bottoms.

**Utah.** — Ogden; Toquerville; Parley's Park; \* Provo; \* Provo River.\*

**Arizona.** — Seven miles south of Bisbee; Tucson; Fort Whipple: La Noria (Monument 112 M. B. L.).

**New Mexico.** — Fort Wingate; Lake Piedra.\*

**Texas.** — Fort Brown; Fort Clark; San Antonio.

**Lower California.** — Miraflores.

**Sonora.** — Sonoyta; San Bernardino River (Monument 77, M. B. L.).

**Chihuahua.** — Lake Polomus.

**Sinaloa.** — Mazatlan.

### *Cistothorus palustris paludicola* Baird.

*Troglodytes palustris* (?) NEWBERRY, U. S. P. R. R. Rep. VI, 1857, Zool. 80 (part).

*Cistothorus (Telmatodytes) palustris* BAIRD, U. S. P. R. R. Rep. IX, 1858, 364 (part).

*Cistothorus palustris* XANTUS, Proc. Acad. Nat. Sci. Phila. XI, 1859, 191; COOPER, U. S. P. R. R. Rep. XII, pt. II, 1860, 190; (?) SCLATER, Cat. Amer. Birds, 1861, 22 (part); COOPER, Birds Calif. 1870, 75 (part); MERRIAM, Ann. Rep. U. S. Geol. Sur. Terr. for 1872, 1873, 673 (part); GODMAN & SALVIN, Biol. Cent. Amer. Aves, I, 1880, 104 (part); A. O. U. Check-List N. A. Birds, 1886, 330 (part).

*Telmatodytes palustris* COUES, Birds Northwest, 1874, 34 (part); *id.* Birds, Colo. Valley, 1878, 178 (part); *id.* Key to N. A. Birds, 1872, 87 (part).

<sup>1</sup> Proc. Zool. Soc. Lond., 1856, 290.

<sup>2</sup> Proc. Zool. Soc. Lond., 1864, 172.

<sup>3</sup> Biol. Cent. Amer., Aves, I, 1880, 105.



*Cistothorus palustris* var. *paludicola* BAIRD, Rev. Am. Birds, I, 1864, 148 (part); BAIRD, BREWER & RIDGWAY, Hist. N. Am. Land Birds, I, 1874, 161 (part); HENSHAW, Geog. & Geol. Sur. W. 100 Mer. V, 1875, 185 (part).

*Telmatodytes palustris* ♂ *paludicola* RIDGWAY, Geol. Ex. 40th Par. IV, 1877, 425 (part).

*Cistothorus paludicola* SHARPE, Cat. Birds, Brit. Mus. VI, 1881, 242 (part).

*Telmatodytes palustris paludicola* COUES, Key to N. A. Birds, 1887, 279.

*Cistothorus palustris paludicola* RIDGWAY, Man. N. A. Birds, 1887, 556 (part); A. O. U. Check List, 1st Supplement, 1889, 16 (part); A. O. U. Check-List N. A. Birds, 1895, 302 (part); LAWRENCE, Auk, IX, 1892, 357; RIDGWAY, Man. N. A. Birds, 1896, 556 (part).

CHARS. SUBSP. — *Cistothorus C. palustri plesio similis, sed corpore supra et hypocondriis saturatioribus, pilei partibus obscurioribus magis extensis, alis caudaque brevioribus, nec culmine digito medio, ungue excluso, valde longiore, haud difficile distinguendus.*

AL., 46.5-53 (50.1) mm.; caud., 40.5-48 (43.8) mm.; culm. exp., 11.5-12 (11.9) mm.; tars., 17-20 (18.2) mm.

*Habitat.* — Pacific Coast from Washington to California, south in winter to extreme northwestern Mexico.

*Description.* — *Type.* No. 7141 U. S. Nat. Mus.; Shoalwater Bay, Washington, Oct. 31, 1854; Dr. J. G. Cooper. Pileum and nucha brown, intermediate between mummy brown and bistre; upper parts generally of similar color, but paler and grayer on scapulars, more reddish on rump and upper tail-coverts, the latter heavily barred with black; lateral stripes on pileum, and large triangular patch on lower cervix and interscapulum, dark clove brown, this patch broadest anteriorly, where reaching to sides of neck, the feathers with conspicuous white shaft streaks. Tail like the rump, becoming hair brown on terminal portions of outer feathers, heavily barred with black, these markings more or less confluent on all but the central pair, the basal portions of inner webs of some of the feathers being almost solidly black. Wings dark olive brown; edgings of coverts and indentations on quills brown, nearly like the scapulars; entire outer webs of tertials and spots on external webs of greater coverts black. Sides of head and neck, with auriculars, light mummy brown mixed with grayish; superciliary stripe, and lower parts generally, dull white with a slight buffy wash, heavily shaded with dull buffy across breast; sides and flanks dull cinnamon; crissum strongly barred with mummy brown, and on longest feathers with black.

The much darker colors both above and below, with the greater extent of the dark portions of the pileum, readily distinguish this coast form from *C. p. plesius*. The bill of *paludicola* appears to be relatively as well as actually shorter, being not decidedly longer

than middle toe without claw; and the wings and tail also average somewhat less.

The most conspicuous characters which separate this subspecies from *palustris* are the presence of regular and distinct bars on the tail-coverts and middle rectrices; these differences, particularly the latter, being not, however, entirely constant. The bill of *paludicola* is much shorter than that of *palustris*; the wings and tail average somewhat longer. The Pacific Coast form is also usually much tinged with brownish below, instead of being nearly pure white as in *palustris*. The upper parts, though almost as dark, are more sooty in color, and while there exists considerable individual variation in the ratio of the light and dark areas on the pileum, yet in none of the specimens is the dark portion so nearly black as in normal examples of *palustris*.

One Long-billed Marsh Wren from Fort Tejon, Calif., and three obtained on the Colorado River, in Sonora, by the naturalists of the Mexican Boundary Commission, are quite typical of *paludicola*, but are evidently migrants.

Specimens of *Cistothorus palustris paludicola* from the following localities have been examined, those taken in the breeding season being designated by an asterisk:

**Washington.**—Shoalwater Bay.

**California.**—Marin County; Humboldt Bay; Fort Tejon; San Francisco; Stockton.\*

**Sonora.**—Colorado River, opposite mouth of Rio Hardy.

The difficulties attending identification of the western forms of the Long-billed Marsh Wren have induced the present detailed treatment of the subject. These difficulties, as is so often the case with subspecies, consist in the more or less inconstancy of many of the characters assigned. Specimens frequently occur which do not present all the characters of a particular race; and since such specimens must be identified by the average of characters presented, the necessity for very complete diagnoses becomes at once apparent.

The writer wishes to express to Dr. C. Hart Merriam and to Dr. E. A. Mearns his appreciation of their kindness in regard to the loan of specimens; and for the same and other courtesies he

is under especial obligation to Mr. Robert Ridgway, at whose suggestion the preparation of this paper was undertaken.

Comparative measurements of the forms here treated are given below.

## COMPARATIVE MEASUREMENTS.

*Cistothorus palustris.*

	Wing.	Tail.	Exposed Culmen.	Culmen from base.	Tarsus.	Middle Toe.	Middle Claw.
Average of 27 specimens.	48.6	40.2	13.2	14.9	18.8	12.8	5.3
Maximum.	52	46.5	14	16	20.5	14	6
Minimum.	44	34.5	12	14	17	11.5	5
Average of 17 males.	49.8	41.3	13.5	15.1	19.2	13	5.4
Average of 10 females.	46.8	38.3	12.9	14.5	18.3	12.4	5.2

*Cistothorus palustris plesius.*

Average of 26 specimens.	52.5 <sup>1</sup>	46.1 <sup>1</sup>	12.4	14	18.7	12.4	5
Maximum.	57	51	13.5	15.5	20	13	5.5
Minimum.	48	41.5	11	13	17	11.5	4.5
Average of 13 males.	53.9 <sup>2</sup>	47.4 <sup>2</sup>	12.7	14.4	19	12.7	5
Average of 6 females.	50.4	43.9	12.2	13.6	18.5	12.1	4.8

*Cistothorus palustris paludicola.*

Average of 9 specimens.	50.1	43.8	11.9 <sup>3</sup>	13.3 <sup>3</sup>	18.2	12.6	5.1
Maximum.	53	48	12	14	20	13.5	5.5
Minimum.	46.5	40.5	11.5	12.5	17	11	4.5

<sup>1</sup> Excludes four in worn plumage.

<sup>2</sup> Excludes three in worn plumage.

<sup>3</sup> Excludes one with bill broken.