migratory a species is, the more 'plastic' it seems to be; that is, the more opportunity there is for the peculiarities of faunal areas to become operative factors in evolution.

A LIST OF THE LAND BIRDS OF SEATTLE, WASH-INGTON, AND VICINITY.

BY SAMUEL F. RATHBUN.

THE topography of Seattle and the surrounding country is peculiar in many respects, and beyond doubt exerts more or less influence on the birds of the region, particularly in causing many of them to be to a great degree locally restricted.

The city, situated on the shore of Puget Sound, is built on a series of irregular benches, generally trending north and south, which attain a maximum altitude, as shown by the Government survey, of 250 feet above tide water. It is bounded on the east by Lake Washington, a body of fresh water some twenty-four miles in length with an average width of two miles; from this lake eastward the lower foothills of the Cascade Mountains begin. North of and within the city limits are two small fresh water lakes, surrounded by country of a similar character, which continues indefinitely northward. South of the city is a broad expanse of tide flats, lying at the mouth of the Duwamish River, which are now being rapidly reclaimed; a beautiful, fertile and cultivated valley extends up this river for many miles.

Originally the rougher country was clothed with a heavy growth of evergreen timber, principally firs of various kinds interspersed with cedar; many of the former attained a height of 200 to 300 feet. In the bottoms and wetter portions the western maple, elm and alder, with a heavy undergrowth intertwined with vines, throve luxuriantly, in many places presenting an almost tropical exuberance. As the country has become settled this growth has been cleared away. The change has necessarily influenced the habits of

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many species of birds, and in the case of the more social kinds, has increased their numbers.

The climate is mild, with no extreme changes of temperature. I am indebted to the kindness of Mr. G. N. Salisbury, section director of the Weather Bureau at Seattle, for the following report, which shows the general climatic conditions for a period of ten years, from 1890 to 1900.

MEAN TEMPERATURE.

(Fahrenheit.)

Jan. Feb. Mar. April. May. June. July. Aug. Sept. Oct. Nov. Dec. 40.8° 41.6° 45.0° 49.9° 55.3° 60.0° 64.3° 64.2° 58.5° 51.4° 45.4° 43.1°

> Mean Annual temperature, 51.6°. Mean Summer temperature, 62.8°. Mean Winter temperature, 41.8°. Highest recorded temperature, 94°. Lowest recorded temperature, 3°.

AVERAGE PRECIPITATION, 1890 to 1900.

(Inches and hundredths.)

Jan. Feb. Mar. April. May. June. July. Aug. Sept. Oct. Nov. Dec. 2.37 1.58 0.66 0.54 1.78 2.98 5.66 6.24 4.37 3.70 3.12 3.21

Average Annual, 37.17.

PREVAILING DIRECTION OF THE WIND.

Jan. Feb. Mar. April. May. June. July. Aug. Sept. Oct. Nov. Dec. S.E. S. E. S. N.W. N.W. S.E. S.E. S.E. S. E. S. s. s.

These statistics readily show why so many of the species found here remain to a greater or less extent during the winter season. In the case of a few, the number of individuals representing the species is quite large.

The following list of species has been compiled from notes taken by the writer during a period of over eleven years. It represents many days of field work, and nothing has been assumed. The sole aim has been to prepare an accurate list, as far as possible, of the land birds, and although the author is aware that the list may be

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increased to some extent, only those species have been enumerated of which there is indisputable evidence of their presence.

The nomenclature used is that of the A. O. U. Check-List of North American Birds. The author desires in this connection to acknowledge the kindness shown him by Dr. A. K. Fisher of the Biological Survey, U. S. Department of Agriculture, for information regarding some of the recent changes in nomenclature.

I. Colinus virginianus. BOB-WHITE. — An introduced species. Moderately common and breeds. Resident.

2. **Oreortyx pictus**. MOUNTAIN PARTRIDGE. — Also introduced. Resident, quite common and breeds.

3. Lophortyx californicus. CALIFORNIA PARTRIDGE. — Another introduced species, resident and breeding. Common.

These three partridges are mostly restricted in their range to favorable localities, and have rapidly increased since their introduction, having been well protected by suitable legislation.

4. Dendragapus obscurus fuliginosus. Sooty GROUSE. — Common resident; breeds.

5. Bonasa umbellus sabini. OREGON RUFFED GROUSE. — Common resident; breeds.

6. Columba fasciata. BAND-TAILED PIGEON. — Common, but not as abundant as formerly. Arrives from the south early in May, breeds, and departs early in October. Unless protected by legislation it must eventually become rare, as it is hunted incessantly during its residence here.

7. Zenaidura macroura. MOURNING DOVE. --- Not an uncommon summer resident in the cultivated valley south of the city. Breeds.

8. Cathartes aura. TURKEY VULTURE. — A rather rare summer resident, but of seemingly regular occurrence in the open river valleys and along the sound. Possibly breeds, as it has been observed from May to September.

9. Circus hudsonius. MARSH HAWK. -- Where the rivers from the Cascade Mountains empty into Puget Sound extensive marshes are formed. Here this species is found moderately common from April to October. Breeds.

10. Accipiter velox. SHARP-SHINNED HAWK.—Regular spring and fall migrant.

11. Buteo borealis calurus. WESTERN RED-TAIL. — Not uncommon during the migrations; a few pairs remain and breed.

12. Buteo swainsoni. SWAINSON'S HAWK.—On March 7, 1892, I saw one of this species sitting in a small tree on the east shore of Lake Washington. It allowed an approach sufficiently near to identify it.

13. Aquila chrysaëtos. GOLDEN EAGLE. — In the Cascade Mountains, and east from Seattle 25 miles, I have observed this eagle a number of times.

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14. Haliæetus leucocephalus. BALD EAGLE — Not uncommon along the sound and the larger of our inland lakes. Resident; breeds.

15. Falco peregrinus anatum. DUCK HAWK. — Rare, but observed a number of times during spring and fall. (This may possibly be the subspecies F. p. peulei Ridgw.)

16. Falco columbarius suckleyi. BLACK MERLIN. — On rare occasions I have seen this very dark form of the Pigeon Hawk. Along Lake Washington, on a brushy hillside, interspersed with dead firs, I have observed this bird on the following dates: May 4, 1893; May, 1894; and on several occasions during March, April and May, 1899. On July 10, 1899, I watched one flying about near the business portion of the city, evidently hunting for food. With this exception, my observations were confined to the district above noted, which furnishes a most admirable locality for these birds, and one within which a pair might possibly breed.

17. Falco sparverius deserticolus. DESERT SPARROW HAWK. — Abundant from April to October, and restricted to no particular locality. Breeds. Often seen during the winter months.

18. Pandion haliaëtus carolinensis. AMERICAN OSPREY. — Fairly common summer resident, April to October. Breeds. Not so abundant as formerly.

19. Asio accipitrinus. SHORT-EARED OWL. — Rather common during spring and fall around the salt and partially fresh water marshes bordering the sound, especially the river deltas. Observed during summer, and possibly breeds.

20. Scotiaptex cinerea. GREAT GRAY OWL. — Rare. Have a skin of an adult female taken within the city limits, Nov. 19, 1899. Another specimen was shot five miles south of the city Nov. 21, 1899. These are the only records I know of this species for this locality.

21. Nyctala acadica. SAW-WHET OWL. — Not common. A fine specimen, an adult female, was brought me for identification on Oct. 17, 1901; it had been taken two days previously.

22. Megascops asio kennicottii. KENNICOTT'S SCREECH OWL. — Moderately common resident; breeds.

23. Bubo virginianus saturatus. DUSKY HORNED OWL. — Resident ; breeds.

24. Nyctea nyctea. SNOWY OWL. — Rare visitant. A flight of this species invaded the Puget Sound country during November and December, 1896, when a large number of individuals were taken and many more reported as seen.

25. Glaucidium gnoma californicum. CALIFORNIA PYGMY OWL. — A not uncommon resident, but seems to be locally restricted. Easily escapes observation.

26. Coccyzus americanus occidentalis. CALIFORNIA CUCKOO. — A rare but regular summer resident.

27. Ceryle alcyon. BELTED KINGFISHER. — Common resident, but less so during winter. Breeds.

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28. Dryobates villosus harrisii. HARRIS'S WOODPECKER. - Rather common resident ; breeds.

29. Dryobates pubescens. DOWNY WOODPECKER. - On Feb. 20, 1892, I took a perfectly typical specimen of this species near the city, — an adult female.

30. Dryobates pubescens gairdnerii. GAIRDNER'S WOODPECKER. -Common resident and breeds.

31. Sphyrapicus ruber flaviventris. Northern Red-BREASTED SAP-SUCKER. - Not uncommon. Have observed this species during every month of the year except January. Found a pair nesting May 9, 1891.

32. Ceophlœus pileatus. PILEATED WOODPECKER .-- Resident throughout the year in the heavily wooded tracts. Not so common as formerly.

33. Melanerpes torquatus. LEWIS'S WOODPECKER. - This characteristic species is a moderately common summer resident, and breeds. Evinces a partiality for the burned-over tracts where some dead timber remains standing, and appears to be quite generally and not locally distributed.

34. Colaptes cafer saturatior. NORTHWESTERN FLICKER. - Resident and breeds. More common from March to November.

35. Chordeiles virginianus henryi. WESTERN NIGHTHAWK. - An abundant summer resident. Breeds.

36. Cypseloides niger borealis. BLACK SWIFT. - This species is a common summer resident, but seems to be locally restricted. The last migrant to arrive in the spring, seldom appearing before May 20, and departing from September 10 to 19, the latter date the latest I have noted. A most interesting species, never seen alone or in pairs, but always a number together, hunting their insect food. Union Bay, Lake Washington, on the outskirts of the city, seems to be a favorite feeding ground, and one can be reasonably sure of seeing them there almost any day during June and early July.

On many occasions I have watched these birds circling about above the city, sometimes appearing as mere specks among the lower clouds, and, with the exception of the dark lowery days with rain threatening, they rarely descend below an altitude of 300 to 500 feet.

37. Chætura vauxii. VAUX's SWIFT.-- In certain localities common as a summer resident but not evenly distributed. Breeds. Evince a partiality for the streams along which may be found numerous tall dead firs and cedars.

38. Selasphorus rufus. RUFOUS HUMMINGBIRD. - Common summer resident, arriving the latter part of March. One of the first of the smaller species to breed, nesting during April and again late in June.

39. Selasphorus alleni. ALLEN'S HUMMINGBIRD. - Rather rare summer resident and undoubtedly breeds.

40. Tyrannus tyrannus. KINGBIRD.—Rare summer resident and breeds. I found a nest June 14, 1893, and am familiar with two localities where a pair may generally be found throughout the summer.

41. Contopus borealis. OLIVE-SIDED FLYCATCHER. — A rather common and evenly distributed summer resident from the Sound to well into the Cascade Mountains. Breeds. Arrives in May, departs in September.

42. Contopus richardsonii. WESTERN WOOD PEWEE. — Common summer resident; breeds.

43. Empidonax difficilis. WESTERN FLYCATCHER.—A not uncommon summer resident; breeds.

44. Empidonax traillii. TRAILL'S FLYCATCHER. — The most common of our Flycatchers, being an abundant summer resident and breeding.

45. Empidonax hammondi. HAMMOND'S FLYCATCHER. — A not common but regular summer resident. Have found two nests of this species.

46. Otocoris alpestris strigatus. STREAKED HORNED LARK. — Have observed this species on the tide flats south of the city; 30 miles farther south, on the prairie near Tacoma, it is a summer resident, breeding. One riding across that gravelly prairie can commonly hear its peculiar note.

47. Pica pica hudsonica. AMERICAN MAGPIE. — Often seen during February, March and April, along the eastern shore of Lake Washington and back to the foothills of the Cascade Mountains, here not far distant. I have never observed it along the west side of the lake, but have seen it in the river valley south of the city.

48. Cyanocitta stelleri. STELLER'S JAY. — Common resident throughout the year. Breeds.

49. Perisoreus obscurus. OREGON JAY. — Not uncommon during the fall and winter months, evidently moving down from the mountains east of the city, where it is more or less common during the summer.

50. Corvus americanus. AMERICAN CROW. — Locally distributed, and not uncommon.

51. Corvus caurinus. NORTHWEST CROW.—A common resident along the sound throughout the year. Breeds.

52. Agelaius phœniceus. RED-WINGED BLACKBIRD.—Resident throughout the year, but more common from February to December. `Breeds.

53. Sturnella magna neglecta. WESTERN MEADOWLARK. — This delightful species is resident to some extent throughout the year, but is especially abundant in the river valleys on the fields and pastures, where it is so common as to impress one with its numbers. As yet it is practically undisturbed, consequently very tame, and seems to be increasing. From February to July a trip to these valleys is a pleasure on account of the number of these birds, all in full song. Its notes are far superior to those of its eastern relatives; one of our finest song birds.

54. Scolecophagus cyanocephalus. BREWER'S BLACKBIRD. — Common spring and fall migrant, some remaining during the winter months.

55. Coccothraustes vespertinus montanus. WESTERN EVENING GROS-BEAK. — Occasional visitant during winter and early spring. Previous to the winter and spring of 1901, I had met with this species but once near

Auk Apr. Seattle, and that record was of only two individuals some six years prior. During the months of February, March and April, 1901, this locality was, however, favored with a visit from this beautiful bird, which appeared in small flocks. The first were noted February 22, and thereafter a number of small flocks were observed throughout the city, up to April 19. I saw them on six different occasions; the bulk of the individuals appeared to be males, some of them being very highly colored; they were in every case tame and unsuspicious.

56. Carpodacus purpureus californicus. CALIFORNIA PURPLE FINCH. — Moderately common summer resident and breeds. Arrives in February, departs in November.

57. Loxia curvirostra minor. AMERICAN CROSSBILL.—Irregular winter visitant in this immediate locality. In the Cascade Mountains, east of the city, however, from an elevation of 1000 feet upwards, I find this species of common occurrence during the summer months.

58. Acanthis linaria. REDPOLL. — An irregular winter visitant.

59. Astragalinus tristis salicamans. WILLOW GOLDFINCH. — Not an uncommon summer resident. Breeds. More common of late years.

60. Spinus pinus. PINE SISKIN. — A common winter resident, especially abundant during the spring months; have observed them up to the middle of June. By the actions of a few pairs, I am inclined to think that they may have nested.

61. Poœcetes gramineus confinis. WESTERN VESPER SPARROW. — Have observed this species on several occasions during the summer in the settled and cultivated valleys near the city and on the meadows and pasture lands.

62. Ammodramus sandwichensis alaudinus. WESTERN SAVANNA SPARROW. — Rather common throughout the summer in the same localities as *P. g. confinis*, noted above; have a specimen taken near Seattle in April, 1894, along the shore of Lake Washington.

63. Zonotrichia leucophrys nuttalli. GAMBEL'S SPARROW. — One of the commonest and most characteristic of our birds, always arriving in the spring between the 2nd and 8th of April, and is soon scattered throughout the city. Breeds in almost any suitable location; departs in the fall during October.

64. Zonotrichia coronata. GOLDEN-CROWNED SPARROW. — A regular spring and fall migrant but not very commonly observed.

65. Spizella socialis arizonæ. WESTERN CHIPPING SPARROW.— Rather common summer resident and breeds. April to October.

66. Junco hyemalis oregonus. OREGON JUNCO. — Common winter resident.

67. Junco hyemalis connectens. SHUFELDT's JUNCO. — Common summer resident. Breeds abundantly.

68. Melospiza melodia morphna. RUSTY SONG SPARROW. — An abundant resident throughout the year. Breeds.

69. Passerella iliaca unalaschcensis. TOWNSEND'S SPARROW. -- Mod-

erately common spring and fall migrant, the first individuals arriving in February.

70. Pipilo maculatus oregonus. OREGON TOWHEE. — Resident throughout the year but more abundant from March to November. Breeds.

71. Zamelodia melanocephala. BLACK-HEADED GROSBEAK. — Rather common summer resident, arriving early in May; departs last of September. Breeds.

72. Cyanospiza amœna. Lazuli Bunting. — Not uncommon summer resident. Breeds. More common than formerly.

73. Piranga ludoviciana. LOUISIANA TANAGER. --- Common summer resident and breeds.

74. **Progne subis.** PURPLE MARTIN. — Common about the business portion of the city from April to September, nesting in the cornices of the buildings and wherever it can find a suitable place.

I have called this *P. subis*, which I believe it to be; it may, however, be *P. s. hesperia*, but specimens are very hard to obtain, as the birds are only found about the business part of the city.

75. Petrochelidon lunifrons. CLIFF SWALLOW. — Rather common summer resident; breeds.

76. Hirundo erythrogastra. BARN SWALLOW.--Common summer resident; breeds.

77. Tachycineta bicolor. TREE SWALLOW. — An abundant resident from early March to October. Breeds.

78. Stelgidopteryx serripennis. ROUGH-WINGED SWALLOW.— A rather common summer resident. Breeds.

79. Ampelis cedrorum. CEDAR WAXWING. — More or less resident throughout the year. Breeds.

80. Lanius borealis. NORTHERN SHRIKE. — An irregular winter and early spring visitant. Was noted frequently during February to April, 1900.

81. Vireo gilvus swainsoni. WESTERN WARBLING VIREO. — Commom summer resident.

82. Vireo solitarius cassinii. CASSIN'S VIREO. — A regular and not uncommon summer resident and breeds.

83. Vireo huttoni obscurus. ANTHONY'S VIREO. — Rare. Am aware of only one record for this locality, an adult male taken by myself May 14, 1895, this being, I believe, the first recorded specimen for this State. Dr. A. K. Fisher, however, informs me that a pair, male and female, with nest and eggs, were secured near Tacoma in the early summer of 1896.

84. Helminthophila celata lutescens. LUTESCENT WARBLER.--Common summer resident, arriving early in April and departing in October. Breeds.

85. Dendroica æstiva. YELLOW WARBLER. — An abundant summer resident. Breeds.

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86. Dendroica coronata. MYRTLE WARBLER. — A regular and not uncommon spring migrant, associating with *D. auduboni*. Have no fall record.

87. Dendroica auduboni. AUDUBON'S WARBLER.—An abundant resident from March until November. Breeds. I have records of this species for every month of the year except January.

88. Dendroica nigrescens. BLACK-THROATED GRAY WARBLER. — Common resident from middle of April until October. Breeds.

89. Dendroica townsendi. TOWNSEND'S WARBLER. — Rather rare. A fine adult male taken June 4, 1893, and single individuals seen on two other occasions, are the only records I know of for this locality.

90. Geothlypis tolmiei. MACGILLIVRAY'S WARBLER. — Common summer resident, arriving early in May; departs in late September. Breeds.

91. Geothlypis trichas arizela. PACIFIC YELLOW-THROAT. — Rather common summer resident. Breeds.

92. Wilsonia pusilla pileolata. PILEOLATED WARBLER. — Common summer resident and breeds, arriving early in May and departing the latter part of September.

93. Anthus pensilvanicus. AMERICAN PIPIT. — Common spring and autumn migrant.

94. Cinclus mexicanus. AMERICAN DIPPER. — Common resident along the mountain streams of the Cascade Mountains, from the foothills east of the city almost to the summits. More abundant from March to December.

95. Thryomanes bewickii calophonus. NORTHWEST WREN. — Common resident throughout the year. Breeds. On any pleasant day during the winter the song of this species may be heard.

96. Troglodytes aëdon parkmanii. PARKMAN'S WREN. — Common summer resident; breeds.

97. Anorthura hiemalis pacifica. WESTERN WINTER WREN. — Abundant resident, but more common from October to May. Breeds.

Am inclined to think that this species raises its first brood during April, in the Sound country, and that then the bulk of the individuals retire to the mountains and nest a second time; but its beautiful song may be heard in the low dense woods throughout the summer.

98. Cistothorus palustris paludicola. TULÉ WREN. — Common resident from March to November, but quite a number remain during the winter. Breeds.

99. Certhia familiaris occidentalis. CALIFORNIA CREEPER.— Observed throughout the year, but most common during spring and autumn. Breeds.

100. Sitta carolinensis aculeata. SLENDER-BILLED NUTHATCH.— Have noted this species a number of times, but it is apparently not very common.

IOI. Sitta canadensis. RED-BREASTED NUTHATCH. — Common from September until May. Possibly breeds, as I have noted it during the summer months.

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102. Parus atricapillus occidentalis. OREGON CHICADEE. — An abundant resident. Breeds.

103. Parus rufescens. CHESTNUT-BACKED CHICADEE. — Rather common from October until May. A few remain and breed. I found a nest of this species June 3, 1894, containing almost full-fledged young, and on three other occasions have seen young with the parent birds in June and July.

104. Psaltriparus minimus. BUSH-TIT. — Common from March to November, and individuals can always be found throughout the winter. Breeds.

105. Regulus satrapa olivaceus. WESTERN GOLDEN-CROWNED KING-LET. — Common spring and autumn migrant, and many remain during the winter.

106. Regulus calendula. RUBY-CROWNED KINGLET. — A common migrant during the spring and fall.

107. Myadestes townsendii. TOWNSEND'S SOLITAIRE. — One record of the occurrence of this species for this locality is all I have. On December 25, 1894, I observed one of these birds perched in a small tree in the yard adjoining a house in the residence district of the city. The soft warbling notes of the bird first attracted my attention, and a close approach, within twenty feet, enabled a full identification of the species.

108. Hylocichla ustulata. RUSSET-BACKED THRUSH. — An abundant resident from May until early October, breeding commonly in almost any suitable locality. The sweet notes of this bird are heard frequently throughout the less settled parts of the city during its sojourn here.

109. Hylocichla aonalaschkæ. DWARF HERMIT THRUSH. — A not uncommon and regular spring and fall migrant.

110. Merula migratoria propinqua. WESTERN ROBIN. — Abundant from February until November, and many remain during the winter.

111. Hesperocichla nævia. VARIED THRUSH. — Common from October until the end of April. During March and April, 1899, there was an unusual migration of these birds. They appeared to be almost everywhere scattered about the city, running on the lawns and evincing the same fearlessness as the Western Robin. This species may possibly breed sparingly in the Cascade Mountains. On July 30, 1901, while climbing the trail running up the middle fork of the Snoqualmie River, and distant due east from Seattle about thirty miles, hearing the familiar note of this bird, I saw, not twenty-five feet distant, a fine plumaged male, and near by the female. This was not far from the stream. Later the same day, about a mile from this place, I saw another male.

112. Sialia mexicana occidentalis. WESTERN BLUEBIRD.—A commom species, arriving early in February and departing in November. Breeds abundantly about the city in any suitable locality. This bird has apparently increased in numbers during the past few years.

Passer domesticus. ENGLISH SPARROW.— Prior to the spring of 1897 I had never seen this species in Seattle, but in June of that year I noted Vol. MEARNS, Ca. us Wrens of the United States.

a pair. The following season I saw fourteen; in 1899 this number had increased to about seventy, associating in small flocks. The year 1900 showed an increase, and this season, 1901, it appears scattered about the business part of the city, and although as yet not in such numbers as in the eastern cities, the time seems not far distant when it may be.

THE CACTUS WRENS OF THE UNITED STATES.¹

BY EDGAR A. MEARNS.

WITHIN the United States are three forms of the Cactus Wren, all subspecies of the Mexican *Heleodytes brunneicapillus* (Lafresnaye), occupying, respectively, the coastal region of California, the Texan region, and the arid interior region of the Southwest; and a fourth race is confined to southern Lower California.

Heleodytes brunneicapillus brunneicapillus, first described by Lafresnaye (Mag. de Zool., 1835, p. 61, pl. 47), was supposed to have come from California; but, as the Cactus Wren of the portion of California west of the Coast Range Mountains is different from that east of them, it became necessary to determine with certainty to which form of *Heleodytes* Lafresnaye's name *brunneicapillus* pertains. At my request, in the year 1897 the authorities of the Boston Society of Natural History kindly forwarded the type of *Picolaptes brunneicapillus* Lafresnaye to Mr. Robert Ridgway, at the Smithsonian Institution, and the following are his conclusions respecting it:

"The type of *Picolaptes brunneicapillus* Lafresnaye, which I have been able to compare with an extensive series of specimens from the southwestern border of the United States, does not agree with any specimens from north of the Mexican boundary-line, and certainly is not from California, as alleged. It is much deeper colored beneath than any United States specimen, the sides, flanks and abdomen being deep ochraceous-buff. In this respect it

¹These, the largest of our Wrens, are about the size of the Scarlet Tanager, and in the United States are confined to the tier of States and Territories bordering on Mexico, and to portions of Utah and Nevada.