

are never molested by man, it was absolutely impossible to approach these birds except by stealth. I met the birds each morning, and as many times tried to secure a specimen; one hundred to two hundred yards was the nearest approach permitted before they resorted to flight. One was finally secured by taking advantage of a board fence that crossed the island and some intervening bushes; creeping forward as far as was safe without being seen, a 75-yard shot with No. 5 shot secured the long sought for bird.

Rock Wrens (*Salpinctes obsoletus*) were fairly numerous but differed in no way from the same species on the mainland. A pair of Large-billed Sparrows (*Passerculus rostratus*) were seen in a patch of salt grass and one of the two secured. Black Phœbes (*Sayornis nigricans*) Say's Phœbe (*Sayornis saya*) were both present, probably migrants from the mainland.

Mockingbirds (*Mimus polyglottos leucopterus*) breeds sparingly on the island, perhaps less than a half dozen pairs. Only one was seen and taken. One shrike (*Lanius*) was seen but not taken. A Great Blue Heron (*Ardea herodias*) was seen at different times, but always alone.

A LIST OF LAND BIRDS FROM CENTRAL AND SOUTHEASTERN WASHINGTON.

BY ROBERT E. SNODGRASS.

THE list of birds here given is the ornithological result of a collecting expedition sent into the field during the summer of 1903 by the Washington Agricultural College. The expedition started from Pullman and, going westward through Connell and across the White Bluffs Ferry on the Columbia River as far as the town of North Yakima, traversed the southern part of Whitman County, the southeastern corner of Adams County, Franklin County, the extreme south end of Douglas County, and the north-

eastern part of Yakima County. Returning it crossed the central and southeastern part of Yakima County, Walla Walla, Columbia and Garfield Counties, and the southeastern part of Whitman County, coming by way of Prosser, Wallula Ferry on the Columbia River, Walla Walla, Bolles, Dayton, Pomeroy and Almota Ferry on the Snake River.

The collectors were Mr. C. V. Burke, Mr. E. A. MacKay, Mr. E. Crawford, and the writer. Specimens were obtained of nearly all the birds recorded.

The area covered embraces several very different sorts of country. It is all, geologically, a part of the great Columbia lava sheet, but climatic and altitudinal conditions have formed two very distinct biological zones.

The eastern part of Whitman County is a rich wheat-growing section having a comparatively heavy-rainfall and an altitude of 2000 feet or more. It is treeless, except in the cañons, and its original predominant vegetation was bunch-grass (several species of *Agropyron*) which grew luxuriantly everywhere. A characteristic member of the fauna is the extremely abundant Columbian Ground Squirrel (*Citellus columbianus*), and one of the commonest birds in the summer time is the Catbird. As one goes west the climate becomes dryer and a small stunted sage-brush replaces the bunch-grass. The large Columbian Ground Squirrel abruptly disappears and a smaller, grayer species (*C. townsendi*) takes its place. One is here on the transition area between the narrow fertile strip along the eastern border of the State and the great arid region of the middle part.

Franklin County is excessively arid. The eastern half is partly under cultivation, large tracts being ploughed and planted to wheat. Water, however, is so scarce that the farmers have to haul all that they use from the few wells and springs that occur. Many have to go ten and twelve miles for their water, transporting it in large wagon tanks. The country about the town of Connell presents a scene of utter desolation. During the summer there is no solid ground anywhere—all is dust; there is not a green thing in sight and scarcely a stump of anything that ever was green. The dried-up sage-brush is only a few inches high. Most of the country west of Connell is still an unbroken desert. The sage-

brush here is larger, however, and growing with it is considerable bunch-grass, so that this region does not look quite so desolate as the Connell district. Twelve miles west of Connell on the road to White Bluffs Ferry — a distance of nearly thirty miles — there is a spring located in a deep coulee. This is the only water to be had until one gets to the Columbia River. West of this spring the country is covered with sand that has drifted east from the river, and which has buried and obliterated almost every plant form except what sage-brush has been able to continually push up through it. The sand becomes deeper as one approaches the river, but several miles inland it has drifted up into great dunes. The sand, together with the lack of water, makes a journey across this region an extremely hard one on horses. Bird and insect life is almost absent. Occasionally one meets with a few Horned Larks or Sage Sparrows and now and then a Meadowlark. Rather frequently the Pigmy Horned Toad (*Phrynosoma douglassii*) and a small lizard (*Sceloporus graciosus*) are seen. Near the Columbia also another lizard (*Uta stansburiana*) occurs.

Along the banks of the Columbia at White Bluffs there is no more fertility than farther inland. A few scattered willows grow close to the water. Birds, however, are more abundant. Besides the Sage Sparrows, Horned Larks, and Meadowlarks, there occur here Sage Hens in abundance, Mourning Doves, Sparrow Hawks, a few Burrowing Owls, many Magpies, numerous Nighthawks, a few Kingbirds, Red-winged Blackbirds, Brewer's Blackbirds, many Shrikes, and a few Rock Wrens along the cliffs facing the river.

Yakima County is more diversified. High hills form the divide between the Columbia and Yakima Rivers. These hills contain almost no water and support the ordinary desert fauna and flora. The narrow Yakima valley, however, is very fertile and, in the neighborhood of North Yakima, the country is covered with large groves of trees — principally cottonwoods. This region is also extensively irrigated and, hence, presents a striking contrast to the region east of it. Although there is a rich bird-fauna here, one is surprised at the absence of a number of common birds. For example, during nine days of collecting, from July 4 to 13, we saw no Owls, Horned Larks, Orioles, Vesper Sparrows, Tanagers,

Shrikes, or Bluebirds. On the other hand, one bird, the Ash-throated Flycatcher, occurs here but was observed nowhere else in the State. The Yakima Ground Squirrel (*Citellus mollis yakimensis*) is not numerous but is characteristic of the Yakima River region.

South of the North Yakima country trees are less abundant along the river, and the fertile country forms only a narrow strip through the sage-brush. A small gray chipmunk (*Eutamias pictus*) and the lizard *Uta stansburiana* are common.

At Prosser we left the Yakima Valley and, after ascending the bluffs south of the town, came out upon the high plateau known as the "Horse Heaven" country. This is a most arid region occupying the area east of the Yakima Indian Reservation and south of the Yakima River. Bunch-grass grows amongst the sage-brush (whence probably the name of "Horse Heaven"), but the country is almost devoid of water. From one well, operated by a company, water is sold to the settlers for miles around. Others haul water ten or fifteen miles out of the Yakima Cañon! We traversed "Horse Heaven" from Prosser to Wallula Ferry, and here crossed the Columbia into Walla Walla County. On both sides of the river from White Bluffs Ferry to Wallula Ferry the country presents the same desolateness as it does farther inland. Just below Wallula the Columbia enters a deep, walled cañon of basalt.

The western part of Walla Walla County is the same sort of desert as the region west of the river. The surface is formed mostly of a fine, white, chalky tufa deposit. This same tufa formation occurs all along the Yakima Valley south of North Yakima interbedded between layers of basalt. Narrow, horizontal beds of it also give the white appearance to the cliffs on the Columbia known as White Bluffs. For about fifteen miles up the Walla Walla River from Wallula the sage-brush prevails. Only along the narrow river bottom are there a few trees and bushes. Here also are a few small alfalfa fields and orchards. Birds are extremely scarce — no Sage Sparrows or Sage Thrashers were seen on this part of the desert.

Near the city of Walla Walla, however, one comes again into the wheat-growing region where water can be obtained by means of wells, and where *Citellus columbianus* flourishes. From here

eastward moisture and fertility rapidly increase. Groves of trees fringe both the Walla Walla River and the Touchet Creek and all the hills are covered with flourishing wheat fields. In all of the arid region wheat grows from a few inches to a foot in height. The Walla Walla wheat-growing country is said to have been originally clothed with bunch-grass. From Bolles to Dayton the narrow cañon of the Touchet supports a thick growth of trees and underbrush. Outside of the cañon the country is treeless and covered with wheat-fields.

From Dayton on through Columbia and Garfield Counties the surface is cut by extremely deep cañons through which the Tucanon, Pataha and Deadmans streams flow northwest into the Snake River. This country is also treeless, except in the cañons, and the higher parts are covered with bunch-grass, much of it still unbroken. In the cañons, however, one descends again upon the Upper Sonoran desert forms. The cañon of the Snake River is an enormous gorge about 2000 feet deep. Its climate is much warmer and more arid than that of the surrounding country, so that within two or three miles one can descend from one biological zone into another very distinctly different one.

On crossing the Snake River from the south and coming into the elevated region of the Palouse River one is again within the country of the Catbird. The abrupt contrast between the productivity of this country and of that to the west and south is most striking, and shows the great superiority of the Palouse region as a wheat-growing country. The fauna and flora are also richer and more varied, and a list of the birds would show a greater number of species here than occur anywhere in the arid parts.

The following list does not include the Palouse region species.

1. *Pediocetes phasianellus columbianus*. COLUMBIAN SHARP-TAILED GROUSE.— Not seen in any of the sage-brush region of Franklin or Yakima Counties; abundant along the Touchet Creek in Walla Walla County; a few seen in Garfield County.

2. *Centrocercus urophasianus*. SAGE HEN.— This species occurs throughout the entire sage-brush area of central Washington. It was found especially abundant on the sandy desert region along the White Bluffs of the Columbia River in the southern end of Douglas County.

3. *Zenaidura macroura*. MOURNING DOVE.— Common almost everywhere; observed throughout Whitman, Franklin, Yakima, and Walla Walla counties.

4. *Cathartes aura*. TURKEY VULTURE.—A few seen in Franklin County, about North Yakima in Yakima County, and in Walla Walla County.

5. *Buteo borealis calurus*. WESTERN RED-TAIL.—Common everywhere throughout the eastern central and southeastern parts of the State.

6. *Falco mexicanus*. PRAIRIE FALCON.—Found rather common at Almota along the bluffs of the Snake River Cañon.

7. *Falco sparverius phalæna*. DESERT SPARROW HAWK.—Common everywhere.

8. *Megascops asio macfarlanei*. MACFARLANE'S SCREECH OWL.—Two immature specimens taken on the Touchet Creek near Bolles in the eastern part of Walla Walla County, but the species was not seen elsewhere.

9. *Bubo virginianus lagophonus*. WESTERN HORNED OWL.—Several seen at White Bluffs on the Columbia River, southern Douglas County.

10. *Speotyto cunicularia hypogæa*. BURROWING OWL.—Extremely abundant in the southwestern part of Whitman County; occurs all the way across Franklin County; comparatively scarce in Yakima and Walla Walla Counties.

11. *Ceryle alcyon*. BELTED KINGFISHER.—Occurs along nearly all streams. Observed on the Columbia, Yakima, and Walla Walla Rivers, and on the Touchet Creek.

12. *Dryobates pubescens gairdnerii*. GAIRDNER'S WOODPECKER.—Common in the trees along the Yakima River at North Yakima.

13. *Asyndesmus torquatus*. LEWIS'S WOODPECKER.—Extremely abundant in the groves of trees along the Yakima and Walla Walla Rivers and the Touchet Creek.

14. *Colaptes cafer collaris*. RED-SHAFTED FLICKER.—Found wherever trees occur.

15. *Chordeiles virginianus henryi*. WESTERN NIGHTHAWK.—Common everywhere throughout Whitman, Franklin, Yakima, and Walla Walla Counties. In the more desert places, such as at White Bluffs on the Columbia River and in the dry "Horse Heaven" country in southern Yakima County, it has the habit of flying about a great deal at all times of the day. It was not observed to do this nearly so much in the less arid or tree-covered regions about North Yakima and along the Touchet Creek in Walla Walla County, or in the more humid region of Columbia, Garfield, and Whitman Counties.

16. *Trochilus alexandri*. BLACK-CHINNED HUMMINGBIRD.—Common at North Yakima. No other species of Hummingbird seen anywhere.

17. *Tyrannus tyrannus*. KINGBIRD.—Common almost everywhere throughout Whitman, Franklin, Yakima, Walla Walla, Columbia, and Garfield Counties.

18. *Tyrannus verticalis*. ARKANSAS KINGBIRD.—This species is much more local in its distribution than the last. It is abundant in Whitman, Garfield, and Columbia Counties, but very rare about North Yakima,

and in the "Horse Heaven" country of Yakima County. It was found rather numerous in the Yakima valley south of Toppenish, and a number were observed between Wallula and Walla Walla in Walla Walla County, but about Bolles none were seen.

19. *Myiarchus cinerascens*. ASH-THROATED FLYCATCHER.— This species was found only along the Yakima River; several specimens were secured at North Yakima. It was not common, however, and has not been reported from any other part of the State.

20. *Sayornis saya*. SAY'S PHOEBE.— Common everywhere east of the Columbia, and north of the Snake River. Very rare in Yakima County — one individual seen near the station of Satus in the Yakima River valley. Common also in Garfield County between Pomeroy and Alnota Ferry. It is curious that this bird should be so scarce in the fertile and wooded country along the Yakima River and yet be found all over the desert region east of the Columbia River. Elsewhere it does not shun trees.

21. *Empidonax difficilis*. WESTERN FLYCATCHER.— Common in all suitable country where there are at least a few trees. Observed at North Yakima; along the Walla Walla River; on the Touchet Creek; in Columbia and Garfield Counties, especially in the deep cañons of the Tucannon, Pataha and Deadmans streams; and found very abundant at Almota in the Snake River Cañon.

22. *Otocoris alpestris merrilli*. DUSKY HORNED LARK.— Abundant everywhere; the prevailing bird in nearly all desert places; no matter how arid and desolate a region may be the larks are sure to be there, even when other birds are almost entirely absent. Found especially numerous on the sand and sage-brush covered region east of White Bluffs, in the excessively arid "Horse Heaven" country of Yakima County, and in Garfield and Columbia counties.

23. *Pica pica hudsonica*. AMERICAN MAGPIE.— Common in all of the lower or wooded parts of the region traversed. Abundant along the Columbia River at White Bluffs; in the trees along the Yakima River at North Yakima; along the Walla Walla and Touchet streams; and in the deep cañons of the Tucannon Creek and Snake River.

24. *Corvus americanus*. AMERICAN CROW.— Not found abundant anywhere. A few small bands and single individuals seen at North Yakima and in Walla Walla County.

25. *Molothrus ater*. COWBIRD.— Common in Whitman County. A few seen in Yakima and Walla Walla Counties.

26. *Agelaius phoeniceus neutralis*. SAN DIEGO RED-WING? — Lacking material from other localities for comparison, the writer cannot state definitely to what variety the Red-wing of the inland Northwest belongs. It is not very abundant anywhere in the central or southeastern parts of the State since marshes and swamps are scarce. A few, however, occur in congenial places.

27. *Sturnella magna neglecta*. WESTERN MEADOWLARK.— Common everywhere in all kinds of country.

28. *Icterus bullocki*. BULLOCK'S ORIOLE.—Scarce over all the region traversed. None were seen anywhere in the open, sage-brush desert areas, nor were any met with in the fertile, tree-covered country about North Yakima. Several individuals were seen farther south in the Yakima valley at Prosser. A few also occur in the strips of trees and brush along the Walla Walla and Touchet streams in Walla Walla County. Common in eastern Whitman County.

29. *Scolecophagus cyanocephalus*. BREWER'S BLACKBIRD.—Abundant almost everywhere, except in sage-brush regions where there is no near access to water.

30. *Astragalinus tristis*. AMERICAN GOLDFINCH.—This species is common in Whitman and Garfield Counties, but it is almost rare in the arid regions to the west. A few were seen at North Yakima and in Walla Walla County.

31. *Poœetes gramineus confinis*. WESTERN VESPER SPARROW.—The distribution of this bird in the central parts of the State is rather curious. It is abundant throughout all the sage-brush country of Lincoln County and the northern half of Douglas County from the edge of the timber west of Spokane to Waterville. Here it is the predominant bird of the sage-brush and wheat fields. To the south, however, in Franklin, Yakima, and Walla Walla Counties, we did not meet with it, and the Chipping Sparrow was the predominant bird. In Whitman and Garfield Counties both of these species are common field birds.

32. *Chondestes grammacus strigatus*. WESTERN LARK SPARROW.—A common bird in Whitman, Garfield, and Walla Walla Counties, and a few individuals were seen at North Yakima in Yakima County. Generally it avoids the dryer desert regions.

33. *Spizella socialis arizonæ*. WESTERN CHIPPING SPARROW.—Abundant over all the region traversed: in the tree-covered country about North Yakima and along the Walla Walla and Touchet streams of Walla Walla County; on the sage brush deserts of Franklin and Yakima Counties; and on the bunch-grass or wheat regions of Columbia, Garfield, and Whitman Counties. Very rare in the northern half of the desert regions of the central part of the State. None were seen last summer during a trip through Lincoln County and the Grand Coulee region of Douglas County.

34. *Spizella breweri*. BREWER'S SPARROW.—This bird has, very curiously, almost the same distribution over the desert region of the State as has the Vesper Sparrow. In Lincoln and northern Douglas Counties the two invariably associate together. In Franklin and Yakima Counties, where the Vesper Sparrow is apparently absent, Brewer's Sparrow is very rare. We obtained one specimen of the latter at North Yakima and saw one or two small birds at White Bluffs that appeared to be this species. On our way east from Wallula, through the southern tier of counties, we came upon the Vesper Sparrow again in Garfield County and, simultaneously with it, we found Brewer's Sparrow.

35. *Amphispiza belli nevadensis*. SAGE SPARROW.—In going west through Franklin County we first came upon this bird just a little to the east of Connell. One is here, also, well within the arid desert region. West of Connell the Sage Sparrow became the predominant Fringillid of the sage-brush. The Horned Larks outnumber them everywhere, but the latter are numerous everywhere else as well and are, hence, in no way characteristic of the desert. In Yakima County we found the Sage Sparrows abundant all the way from White Bluffs Ferry on the Columbia to the cultivated parts about North Yakima. Here they were absent. To the south again, across the "Horse Heaven" arid country and in the western half of Walla Walla County, they prevailed everywhere. During the previous summer we found this bird between Adrian and Ephrata on the Great Northern Railway and about Loop Lake in the southern end of the Grand Coulee but nowhere to the north of here. Hence, their range northward is not coincident with the extent of the desert.

During the summer the Sage Sparrow is a very quiet bird. None were heard singing and the only sound they uttered was a low *peet*-like note. They generally associate in small flocks composed of both adult and immature birds. The food consists of seeds and insects.

36. *Melospiza cinerea montana*. MOUNTAIN SONG SPARROW.—There appears to be only one form of Song Sparrow occupying the entire eastern, southeastern and central part of the State. Comparisons of a large number of specimens from Whitman, Lincoln, Douglas, Yakima, and Walla Walla Counties show an absolute uniformity of color and proportions in the specimens from all the localities.

Abundant in Whitman County; absent on desert regions; extremely numerous about North Yakima; a few along the Walla Walla and Touchet streams in Walla Walla County.

37. *Pipilo maculatus megalonyx*. SPURRED TOWHEE.—A few Black Towhees occur about North Yakima, and a few were found in the thickets along the Touchet Creek in Walla Walla County. The same form occurs in eastern Whitman County, along the Snake River, and along the Clearwater River in Idaho. Comparison with specimens from other localities shows that the eastern and central Washington form is probably *P. m. megalonyx*.

38. *Zamelodia melanocephala*. BLACK-HEADED GROSBEAK.—Common at North Yakima, less abundant in Walla Walla County, common in eastern Whitman County and in the Snake River cañon at Almota.

39. *Cyanospiza amœna*. LAZULI BUNTING.—Common everywhere except in arid sage-brush regions.

40. *Piranga ludoviciana*. LOUISIANA TANAGER.—Rare on all the region traversed. One specimen obtained at Prosser in Yakima County and another at Bolles in Walla Walla County.

41. *Petrochelidon lunifrons*. CLIFF SWALLOW.—Common wherever swallows occur.

42. *Hirundo erythrogaster*. BARN SWALLOW.—Occurs almost everywhere but is less abundant than the last.

43. *Ampelis cedrorum*. CEDAR WAXWING.— Common at North Yakima but not seen elsewhere.

44. *Lanius ludovicianus excubitorides*. WHITE-RUMPED SHRIKE.— Occurs on all arid sage-brush country. Extremely numerous on the very desolate desert to the east of White Bluff on the Columbia River. Scarce in the fertile and cultivated country about North Yakima.

45. *Vireo olivaceus*. RED-EYED VIREO.— Found along the Touchet Creek in Walla Walla County and in the Snake River cañon at Almota. Neither seen nor heard at North Yakima.

46. *Vireo solitarius cassinii*. CASSIN'S VIREO.— Found only at North Yakima, and not common there.

47. *Dendroica æstiva*. YELLOW WARBLER.— Common in all suitable places — never seen on open desert country.

48. *Geothlypis tolmiei*. MACGILLIVRAY'S WARBLER.— Found at North Yakima, and at Bolles on the Touchet Creek in Walla Walla County. Not common at either locality and always found in dense thickets.

49. *Geothlypis trichas occidentalis*. WESTERN YELLOW-THROAT.— Abundant at North Yakima.

50. *Icteria virens longicauda*. LONG-TAILED CHAT.— Occurs in all suitable localities in the central and southeastern parts of the State. Excessively abundant about North Yakima. Almost everywhere else they are extremely shy and retiring, but here they continually exposed themselves and sat openly in the trees while singing. Their notes were the most numerous of all bird sounds heard.

51. *Oroscoptes montanus*. SAGE THRASHER.— Not observed on the desert of Franklin County, but rather numerous on the west side of the Columbia River between White Bluffs and North Yakima, especially on the Yakima side of the divide. A very few inhabit the tree-covered area along the Yakima River near North Yakima. Numerous in the arid "Horse Heaven" country of southern Yakima County. None observed in the desert western part of Walla Walla County. None heard singing anywhere.

52. *Galeoscoptes carolinensis*. CATBIRD.— Common in the eastern part of Whitman County, but not observed in any of the other counties traversed.

53. *Salpinctes obsoletus*. ROCK WREN.— Common in all deep cañons and in rocky places. Observed at White Bluffs on the Columbia River, in the cañon of the Tucannon Creek in Columbia County, in similar cañons in Garfield County, and in abundance in the Snake River cañon at Almota.

54. *Catherpes mexicanus punctulatus*. DOTTED CAÑON WREN.— One specimen taken at Almota in the Snake River cañon. Only one other individual seen here. It occurs also at Wananaí Ferry a few miles farther up the river. Not observed elsewhere.

55. *Troglodytes ædon aztecus*. WESTERN HOUSE WREN.— Rather common at North Yakima where four specimens were taken. Not

observed elsewhere on the trip, although a House Wren occurs in the eastern part of Whitman County. The three adult specimens are very pale grayish-brown above and, hence, probably belong to the variety *aztecus* rather than to *parkmanii*.

56. *Parus atricapillus occidentalis*. OREGON CHICKADEE.— Common everywhere in trees and bushes along streams. Taken at North Yakima and at Bolles.

The specimens appear to belong to the variety *occidentalis* rather than to *septentrionalis*. The tail is equal to the wing or is slightly shorter. Fall specimens taken at Pullman in Whitman County have the back a brownish olive-gray, the sides and flanks widely and strongly shaded with brownish, the white being reduced to a small median area on the breast and upper part of the belly; tail feathers without whitish terminal margins. Compared with specimens of *P. a. septentrionalis* from Colorado they are decidedly darker above and more fulvous on the sides. The summer specimens are in poor and ragged plumage.

57. *Hylocichla ustulata*. RUSSET-BACKED THRUSH.— Excessively abundant in the groves and thickets along the Yakima River near North Yakima. Their clear, loud, ringing, metallic notes to be heard everywhere and at all times from early in the morning until late in the evening. A common song resembled *rhy'a-cha-veel'-ya, rhy'a-cha-veel'-ya*. The bird itself was much less frequently seen than heard. They were extremely wary and always kept themselves concealed in a thick bush or densely-leaved tree. They seemed always to know just when they were discovered, for invariably when one had just about located a bird after long looking the latter would suddenly but quietly dart out of its concealment to some other bush or tree some distance off. The same form occurs at Pullman in eastern Whitman County, and this is probably the thrush commonly met with in any part of the State.

58. *Merula migratoria propinqua*. WESTERN ROBIN.— Occurs everywhere except in desert regions. Common at North Yakima, especially amongst the trees in town; rather scarce in Walla Walla County.