

Thamnophilus guianensis (nec Gmelin) Wied, 1831, Beitr. Naturg. Bras. 3, ii, p. 1016 (Campo Geral).

Laniagra guayanensis Lafresnaye et d'Orbigny, 1837, Syn. Av. I, in Mag. Zool. cl. ii, p. 9 (part; Bolivia).

Cyclorhis wiedii (nec Pelzeln) Pelzeln, 1868, Zur Orn. Bras. II, pp. 74, 137 (part; Bahia, Goiaz, Rio Paraná).

Cyclorhis viridis (nec Vieillot) Allen, 1889, Bull. Amer. Mus. Nat. Hist., II, pp. 123-127 (part; "adult bird in breeding season." Chapada, Matto Grosso); Salvadori, 1900, Bull. Mus. Torino, XV, No. 378, p. 3 (Corumba).

Specific and Subspecific Characters.—Entire crown, occiput and nape gray washed with ochraceous brown; frontal band and sides of crown rusty red forming a well-marked superciliary streak; cheeks and ear-coverts and a band across the hind-neck pale gray; entire upperparts yellowish-green; upper throat, breast, abdomen and under tail-coverts white washed with fulvous; chest and under wing-coverts bright yellow; sides of body yellowish-green.

Specimens Examined.—Brazil: Matto Grosso, Chapada, 20♂, 10 ♀; Tapirapoan, 1 ♂, 1 ♀; Urucum, 2 ♂, 2 ♀; Bahia, 7 ♂, 5 ♀.

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THE BREEDING AND WINTERING OF THE PALLID HORNED LARK IN WASHINGTON STATE.

BY WALTER P. TAYLOR.

ACCORDING to Ridgway¹ and the American Ornithologists' Union Check-List² the range of the Pallid Horned Lark (*Otocoris alpestris arcticola* Oberholser) is northwestern North America; the subspecies is said to breed in Alaska (except the Pacific Coast strip) and the upper Yukon Valley, and to winter south to Oregon, Utah, and Montana. Later information requires a restatement of the breeding range. On at least two occasions C. de B. Green is reported to have found the subspecies breeding in British Columbia. More than fifteen years ago he collected a set of eggs with the female bird on the high mountains above timberline between

¹ Bull. 50, U. S. Nat. Mus., pt. 4, 1907, p. 307.

² Ed. 3, rev., 1910, p. 219.

the Okanogan and Similkameen Valleys¹; and on July 30, 1915 (authority of D. E. Brown, Seattle) Green collected a female specimen of the Pallid Horned Lark and noted seven breeding pairs with large young on Pearson Mountain, British Columbia. Brooks regards *arcticola* as the breeding form on all the high mountains of the Province, *Otocoris a. merrilli* being limited, in his experience, to the arid lower levels, and the breeding ranges of the two forms nowhere impinging on each other. During field work in the State of Washington in 1919 we found the subspecies breeding well south of the international boundary line. On August 5 of that year a small Horned Lark, as yet unable to fly, was captured at an altitude of 7,300 feet on Panhandle Gap, Mount Rainier. The locality is well above timberline, in the Alpine-Arctic Zone, and a favorite resort for Ptarmigan and mountain goat. The so-called Gap is in reality a broad ridge, to the north dropping off abruptly to the Sarvent Glaciers, on the south sloping gently to Ohanapecosh River. Although the date of capture of the young bird (August 5) seems a little late, at least for localities at lesser altitudes, the season on Panhandle Gap was at its height, and the ground, only recently uncovered by the snow, was blanketed with grass and flowers. On being picked up the young Horned Lark disgorged three locust-like insects and a small green worm. The mother remained close at hand while we watched the young bird, uttering a solicitous call-note resembling *chipew*, *chipew*.

During five seasons of field work in Washington we have noted the Pallid Horned Lark, and collected specimens,² at several points in the Cascades. August 5 is apparently the earliest date on which the subspecies has been actually recorded for the State in summer, though it is not impossible that the Pallid is a resident somewhere in Washington throughout the year. On August 6, 1918, a single Horned Lark was seen at an altitude of 7,500 feet on the ridge northeast of Cloudy Pass in the Chelan country. On August 17, 1919, two groups of Horned Larks, all badly molting, were observed at an altitude of more than 7,000 feet on Burroughs Mountain in Rainier Park. These birds may have

¹ Brooks, 'Auk,' XXVI, 1909, p. 62.

² I am indebted to Harry C. Oberholser for identifying specimens taken, and to Edward A. Preble for calling my attention to a reference I had overlooked.

bred in the vicinity, but undoubted migrants from the north began to arrive soon after. The northerners evidently appear first in the high Cascade Mountains, dropping to more moderate altitudes when driven out by storms. On September 3, 1920, a company of some 100 to 200 individuals was flushed from a grassy ridge top between 7,000 and 7,500 feet on Sheep Mountain, Okanogan County, Washington, near the Canadian boundary. In addition to the big flock, smaller groups of from 2 to 15 or 20 individuals were observed. The following day I found the same flock, or another, 100 to 200 birds, circling and feeding in the warmth of the morning sun on the grassy slopes near the main peak. At about the same time (on September 3, 1920), Stanley G. Jewett saw a small flock of Horned Larks near the summit of Castle Mountain, in the high Cascades near the upper Skagit River, not far from the international boundary. During the fall of 1918 (September 4 to 8) a company of from 6 to 8 individuals could ordinarily be observed at or above timberline, altitude 7,000 feet, on the Mount Aix ridge, which is east of Mount Rainier on the Yakima side of the Cascade summit; it was impossible to tell whether these Horned Larks had bred in the vicinity or were migrants. Horned Larks were encountered September 5 to 7, 1920, on Bald Mountain, east of Sheep Mountain, in Okanogan County near the Canadian boundary, at altitudes ranging from 7,000 to 7,900 feet. On September 17, 1920, a flock of Horned Larks containing perhaps 150 individuals was noted feeding among the herbs and on the snow close to the highest point on the Chopaka Mountain ridge, altitude 7,879 feet, this record being our latest for the high Cascades.

The surroundings in which the Horned Larks were observed in these Alpine-Arctic localities were very similar to those in which the species is usually noted at lower levels: the landscape was practically always wind-swept; the vegetation, while sometimes making a grassy sward of not a little attractiveness, was usually sparse and often depauperate; the ground was often extremely rocky and poor; and trees, when present at all, were the dwarfed and gnarled types of the timberline region.

The onset of wintry weather in November is followed by the departure of the Pallid Horned Lark from the heights and its

appearance on the plains of eastern Washington. George G. Cantwell observed a flock of some fifty individuals at Moses Lake, Grant County, on November 18, 1921. The Horned Larks were distributed over several acres of wheat stubble, and were shy, keeping constantly on the move. F. R. Decker reports the subspecies to be of common occurrence in winter in Benton County, especially in the Horse Heaven country. In this district, in company with Hepburn's Rosy Finch and the Dusky Horned Lark, the Pallid subspecies is often found in large numbers on the fields of wheat stubble. In 1917 flocks of 1,000 birds were seen. In severe weather the Horned Lark is easy to approach. On February 7, 1916, Decker observed a flock of about 300 Horned Larks, mixed Pallid and Dusky, in snow about a foot deep. A sheep-herder had fed his flock on the snow and as soon as the sheep left the Larks gathered where they had been. The latest record for the Pallid Horned Lark on its winter range in Washington is that of S. H. Lyman,¹ who reports a specimen taken near Walla Walla during the first part of March.

Specimens of Horned Larks taken by us on Mount Rainier, Mount Aix, Sheep Mountain, and at Moses Lake are all *Otocoris alpestris arcticola* Oberholser. Field identification of most subspecies of Horned Larks is difficult if not impossible, and there is always the chance that some of the flocks here referred to *arcticola* may have contained other forms. Even if this were the case our conclusions in regard to the Pallid Horned Lark would be but little affected.

An unusual fall record of the subspecies is that of an example collected September 18, 1897, by Dr. A. K. Fisher, at Oyhut, near the coast of western Washington, in southwestern Grays Harbor County.

The status of the Pallid Horned Lark in Washington may therefore be summarized as follows: The subspecies occurs as a common migrant and breeding bird at least from July to September in the Alpine-Arctic Zone of the Cascade Mountains south at least to Mount Rainier (Taylor); east to Chopaka Mountain (Taylor); and west to Mount Baker (J. M. Edson); in winter, as early as November and probably to March, it is found in the lowlands of

¹ Dice, 'Auk,' XXXV, 1918, p. 148.

eastern Washington, north and east to Cheney,¹ south to Walla Walla (Lyman)²; and west to Moses Lake (Cantwell) and Benton County (Decker); it is of accidental occurrence, during migration, in western Washington (A. K. Fisher).

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THE OUTER PRIMARY IN RELATION TO MIGRATION IN THE TEN-PRIMARIED OSCINES.

BY CHARLES K. AVERILL.

A FACT that seems to have escaped the attention of ornithologists is that the outer primary in the ten-primaried Oscines is not only of taxonomic value but that its length in relation to the wing length is an indication of power of flight and therefore of the extent of migration. The outer primary varies inversely as the wing varies in length, and, as extent of migration depends largely on wing length, we may determine much of distribution by this obscure member. This is well shown by the family Vireonidae, basing our tables on Ridgway's 'Birds of North and Middle America' from which work all the data used in this work, unless otherwise stated, are taken. The outer primary is called the 10th and the next one the 9th.

VIREONIDAE.

Group I. Five genera, *Neochloe*, *Laletes*, *Pachysilvia*, *Vireo-lanius* and *Cyclarhis*, containing altogether 175 species and subspecies. Wing generally averaging three times the length of the tarsus; outer primary about one half the length of the next. None of these species reach north to the United States.

Group II. Genus *Vireo*, 31 species and subspecies. Wing averaging three times the length of the tarsus; outer primary one-third to a quarter the length of the next. About 10 forms, breed within the United States mostly in southerly districts, none reaching the northern boundary except *V. huttoni obscurus*, which reaches Vancouver Island.

¹ Johnson, Condor, VIII, 1906, p. 26.

² Dice, 'Auk,' XXXV, 1918, p. 148.