A REVIEW OF THE RACES OF THE MOUNTAIN QUAIL

WITH MAP

By A. J. VAN ROSSEM

The Mountain Quail (*Oreortyx picta*) is a species whose range has been reduced materially, probably by other than human agency, within fairly recent times. Two thousand or more years ago its range extended east to New Mexico, where its bones have been found in cave deposits in association with human materials of the "Basket-maker" period (see Wetmore, Condor, vol. 34, 1932, pp. 141-142, and Howard and Miller, Condor, vol. 35, 1933, pp. 15-16). What caused the present restriction to the Pacific coast area may never be determined, nor is it conceivable that anything will ever be known concerning the plumage characters of the New Mexico birds.

Nomenclaturally, the history of the Mountain Quail began over a hundred years ago when Douglas, in 1829 (Philosophical Mag., n.s., vol. 5, no. 25, p. 74, and Trans. Linnean Soc. London, vol. 16, p. 143), described the species from the "interior of California as far as 45°." Gould, in 1837 (Icones Avium, vol. 1, pl. 9, and Proc. Zool. Soc. London, vol. 5, no. 52), redescribed and renamed the species, from "California," from specimens collected by Douglas which reached England after the latter's death. Anthony, in 1889 (Proc. Calif. Acad. Sci., vol. 2, series 2, p. 74), named a race from Lower California and, finally, Oberholser, in 1923 (Auk, vol. 40, pp. 80-84), revised the nomenclature of the three geographic forms then recognized. This last paper was an important one, for it determined definitely the type localities (actually in interior Oregon) of the birds described by Douglas and Gould. Since that time the species has not been investigated in a systematic sense, other than that the names of certain intergrades have, naturally enough, been shifted about to conform to the evidence at the disposal of one worker or another.

Over a period of several years, critical series of Mountain Quail have been acquired by the Dickey collection at the California Institute of Technology and by the Natural History Museum at San Diego. I refer particularly to a splendid series of *Oreortyx picta confinis* from the San Pedro Mártir and Sierra Juárez mountains in Lower California; but certain near-topotypes of *Oreortyx picta picta* from south-central Oregon have also proved to be of exceptional interest. Altogether, over 400 specimens have been examined, and 153, representing critical localities and plumages, have been assembled and compared at one time. Since an understanding of seasonal and sex differences is vital to a proper appreciation of the geographic variations, a summary of these is here set forth. Age, apparently, is of little moment, for once the postjuvenal plumage is fully acquired, there seem to be no differences of consequence between immature and adult birds, save for the concealed juvenal primary coverts which are carried until the first annual (first postnuptial) molt.

Among series from the same locality no sex differences are observable in the coloration or depth of tone of the upperparts posterior to the hindneck and upper back. However, it is obvious that in females the brown of the dorsum extends forward and suffuses the gray of the hindneck to a greater extent than in average males. Ventrally, the red of the posterior underparts of females is slightly, but definitely, paler, and is less blackish laterally. The red in females is also less extensive, partly because of the greater amount of white on the median underparts, but chiefly because of the wider white barring on the flanks. This latter is a striking and uniform sex character. The

elongated crown feathers average shorter in females, but there is considerable individual variation in this respect.

The freshly acquired, fall plumage retains its true color values for a relatively short time. Dorsally, the whole plumage is affected by time and abrasion, the brown areas to the greatest degree, the gray areas least. Anteriorly, the brown shading is gradually lost, resulting in a clearing up, or intensification, of the gray of the hindneck. The brown of the upperparts becomes paler and grayer to a degree which may cause spring birds of *palmeri* to be almost indistinguishable from fresh fall *picta*. Similarly, worn *picta* may be as pale and gray as fresh *eremophila*. Neglect to appreciate seasonal variation has been responsible, in great part, for the failure in the past to recognize certain geographic variations which are readily seen when fresh-plumaged birds are compared.

Ventrally, there appears to be little seasonal change, although the mechanical effects of abrasion, in extreme cases, may materially reduce the amount of red on the posterior underparts and thereby expose the plumbeous basal portions of the feathers.

Dorsally, *Oreortyx picta* is darkest and brownest in the humid northwestern portion of its range, and it becomes paler and grayer in the more arid eastern and southern parts. At the extreme southern end of its range, in Lower California, there is a darkening of the gray, a feature which is common to several other subspecies of birds from the same region.

Ventrally, in contradistinction to the upperparts, the posterior underparts are paler and redder in the humid northwest, and darker, with increased lateral blackness, in the south.

The elongated crest feathers average shortest in the northwest and longest in the southern Sierras; but individual variation, combined with rapid wear, is such that this differentiation is more in the nature of a general trend than a character which can be used to apply to individual specimens.

There are four group tendencies which mark the transition from the dark, brown-backed bird with paler-colored underparts in the northwest to the more plumbeous-backed population with darker underparts in the mountains of northern Lower California. Four geographic races or subspecies should, therefore, be recognized. From north to south these four steps are described, comparatively, from individual male specimens, selected to represent the average characters of each population. The color terms in quotation marks are from Ridgway's "Color Standards and Color Nomenclature."

Oreortyx picta palmeri Oberholser. Northwestern Mountain Quail (Mountain Quail of the A. O. U. Check-list)

Subspecific characters.—No. 26446 Dickey collection; ♂ adult, Tillamook, Oregon, December 30, 1926; collected by A. Walker.

Compared with *Oreortyx picta picta*, upperparts "bister" instead of "olive-brown," this color extending forward to suffuse strongly the gray of the hindneck; scapular stripes strongly tinged with buff or pale brown instead of being white or nearly so; posterior underparts paler red, "mahogany red" instead of "chestnut" or "bay," and lateral blackness reduced to a minimum for the species; gray of head and chest slightly darker and less pure.

Range.—Humid coastal strip of western Washington and western Oregon, south along the coast ranges of California to San Luis Obispo County. Introduced (A. O. U. Check-list) on Vancouver Island.

Remarks.—Palmeri is found in its best developed form in extreme western Washington and extreme western Oregon, that is to say, west of the outer coast ranges. Relatively few Mountain Quail in California, even from the extreme northwest coast, possess the maximum of characters shown by more northern birds, although selected specimens do so. Mostly they show varying

degrees of paleness or grayness, and to the southward these tendencies increase. However, there is no geographical uniformity of characters within the range of *palmeri* in California. As above stated, some individuals are very similar to typical northern birds, others are scarcely to be distinguished from *picta,* while intermediate examples are frequently encountered. There would seem to be no question that many more of the *picta* type are found in the inner coast ranges than on the coast, but even in the interior it is possible to find individuals which appear to be typical *palmeri.*

The mixed and unstable character of the Mountain Quail of northwestern California might be taken to indicate recent fusion of coastal and Sierra Nevada stock. It is known that at least one Sierran subspecies (*Cyanocitta stelleri frontalis*) has reached the coast (Mailliard, Condor, vol. 24, 1922, pp. 127-133). Mr. James Moffitt writes me that the grouse (*Dendragapus*) at a point only twenty miles from the coast in southern Mendocino County show a condition similar to that seen in the Mountain Quail; certain individuals seem to be *fuliginosus* but others appear to be similar to *sierrae.*

Oreortyx picta picta (Douglas). Sierra Nevada Mountain Quail (Plumed Quail)

Subspecific characters.—No. 26217 Dickey collection; ♂ first winter, Willow Creek, Ironsides, Malheur County, Oregon, December 17, 1919; collected by A. Walker.

In depth of color, dorsally, nearest to *Oreortyx picta confinis,* but "olive brown" instead of grayish "mummy brown"; gray of hindneck less pure and suffused with color of dorsum; median underparts between "chestnut" and "bay," not "claret brown"; flanks redder and with less black on anterior portions. Compared with *Oreortyx picta eremophila,* general coloration darker and browner dorsally; underparts paler and redder, with less black on anterior portion of flanks.

Range.—South-central Oregon (east of the Cascades) south through the Modoc region and the Sierra Nevada of California to about latitude 37°30′N and east to immediately adjacent parts of western Nevada.

Remarks.—In marked contrast to the variable nature of *palmeri* in the coastal mountains, the present race maintains stable characters over its entire range. The transition from *picta* to *eremophila* takes place at about the same latitude as that of the northern and southern Sierran races of the Dusky Grouse. *Picta* apparently extends slightly farther south on the western slope than on the east.

Oreortyx picta eremophila, new subspecies. Desert Mountain Quail

Type.—Male adult, no. 17324 Natural History Museum, San Diego; Lang Spring, Mountain Spring Cañon, Argus Mountains, Inyo County, California, elev. 6000 feet; collected by A. J. van Rossem on October 27, 1935.

Subspecific characters.—Except for the posterior and lateral underparts, this is the palest of the races of the Mountain Quail. Back, wings, and posterior upperparts "deep olive," thus paler than *confinis,* and grayer as well as paler than *picta;* posterior underparts "claret brown" medially, with maximum amount of black on flanks. In this last respect *eremophila* and *confinis* are alike and differ from the lighter and more reddish flanked *palmeri* and *picta.*

Range.—From about 37°30′ in the Sierra Nevada of California and adjacent portions of extreme western Nevada, south through the mountains of southern California to the Lower California boundary.

Remarks.—Both of the preceding (northern) races, *palmeri* and *picta,* are, in fresh plumage, brown-backed birds with relatively light-colored, reddish underparts. The southern races, *eremophila* and *confinis,* are more gray-toned dorsally and have darker-colored underparts which tend to be black on the anterior part of the flanks. Of these latter two, *eremophila* is the paler, in fact, it is the palest race of the species; hence it certainly is not a transitional form. If that dubious distinction is to be conferred on any race it must be on *picta,* but the great extent of territory inhabited by *picta* in stable form is significant. Intergradation between *eremophila* and *confinis* is discussed in connection with the latter.

Oreortyx picta confinis Anthony. Lower California Mountain Quail (San Pedro Quail)

Subspecific characters.—No. 10865, Natural History Museum, San Diego; ♂ adult, La Joya, San Pedro Mártir Mountains, Lower California, Mexico, September 30, 1926; collected by L. M. Huey.

Very similar in depth of coloration to interior Oregon and northern Sierra Nevada specimens of *Oreortyx picta picta,* but brown of upperparts grayer and slightly darker, grayish "mummy brown" instead of "olive brown"; gray of head, neck, and chest slightly darker and purer, scarcely, or not at all, tinged with brownish on the hindneck; posterior underparts darker ("claret brown"), with maximum amount of black on anterior parts of flanks. Compared with the geographically adjacent *Oreortyx picta eremophila,* coloration darker throughout, except for the posterior underparts which are equally dark in both. In *confinis* there is perhaps a more abrupt line of demarcation between the gray of the hindneck and the dorsum than in any of the other races.

Range.—The mountains of northern Lower California, from the Sierra San Pedro Mártir north, through the Sierra Juárez, to the southern California boundary.

Remarks.—Anthony's description was based on late April specimens. He correctly emphasized the grayness of the race, but the paleness which he also gave as a character was obviously due to the season at which his birds were collected. I am not able to verify the supposed occurrence of a thicker bill in this race.

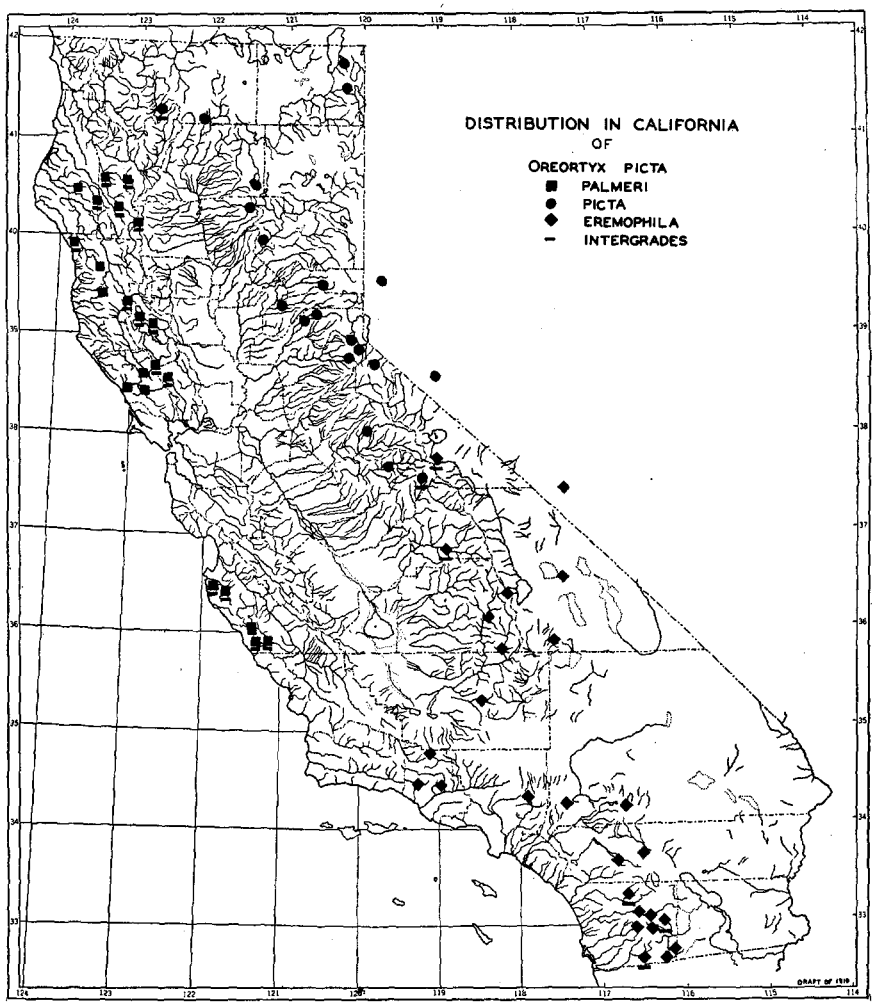

Fig. 7. Map showing distribution of races of *Oreortyx picta* in California.

As before stated, worn *confinis* are essentially like fresh *eremophila* in color. Several factors have led, therefore, to the confusion of *confinis* and *eremophila*. Lack of comparable material, particularly fresh *confinis*, failure to give proper value to the seasonal changes in all races in the matter of dorsal coloration, and the "pale" coloration originally ascribed to *confinis*, are all probably in part responsible for the action of one reviser who included southern California in the range of *confinis* and for the contrary opinions of other authorities who believed that *picta* extended to the Lower California boundary.

It may be worth while again to emphasize that *confinis* is not a pale race. It has the dark coloration comparable to that shown by most of the subspecies of the San Pedro Mártir faunal area, among

which may be mentioned the local races of valley quail, wren-tit, bush-tit, brown towhee, spotted towhee, and rufous-crowned sparrow.

Intergradation between *conjinis* and *eremophila,* which takes place in extreme northern Lower California and southern San Diego County, tends to be "spotty," but there can be no doubt that the average north of the boundary is closer to the latter form. In a series of twenty-seven specimens from San Diego County I find four which by every test are *conjinis,* if one cares so to identify them individually. These are from La Puerta Valley, the Laguna Mountains (Nat. Hist. Mus.), and Campo (Dickey coll.); but other specimens from the same localities are clearly *eremophila,* or else are intermediates. Under the circumstances it seems doubtful if *conjinis* can be considered to occur north of the California-Lower California boundary.

MEASUREMENTS

Although it was at first thought that southern birds were larger than those from farther north, this was not borne out by measurements of large series. There is, however, a slight lengthening of the crest to the southward from *palmeri* to *eremophila,* as the following measurements (in millimeters) show.

	Males			Females	
	Extremes	Average		Extremes	Average
10 palmeri	39-73	(65)	14 palmeri	36-57	(51)
17 picta	59-72	(67)	13 picta	43-60	(55)
15 eremophila	70-87	(73)	12 eremophila	56-70	(58)
25 confinis	60-73	(63)	14 confinis	53-62	(55)

In conclusion I wish to thank the Museum of Vertebrate Zoology for the privilege of examining its entire series of mountain quail and for the outline map upon which the ranges of the races are shown.

Dickey Collections, California Institute of Technology, Pasadena, California, November 5, 1936.

NOTES ON THE INTRODUCED SKYLARK IN THE VICTORIA DISTRICT OF VANCOUVER ISLAND

WITH MAP

By G. D. SPROT

Because little has been published on the Skylarks (*Alauda arvensis*) of Vancouver Island since their introduction over thirty years ago, the following observations made in the course of an exceptionally open season, from September 10 to December 28, 1935, may hold something of interest. The area under observation represents about one-third of the range of the Skylark on the Island.

The first introduction of the species was made in 1903 when the British Columbia Natural History Society, with financial assistance from the Provincial Government and a number of island residents, placed an order with a New York foreign bird importer for 200 Skylarks and a few other species of European birds. These birds left England about the middle of October, arriving on the Island late in November. The losses en route were heavy among the other species, but the hardy Skylarks, although badly cramped in two small cages, stood the journey with the loss of but two birds.

The exact number of Skylarks liberated on Vancouver Island unfortunately is unknown. The minutes of the Society give the number as 100. According to the correspondence, the secretary could only make "as fair a division as was possible under the circumstances" of the 198 survivors of the journey, and about one-half was shipped directly to the mainland, the remainder being released in aviaries in Beacon Hill Park. Late in December this "remainder" was made up into "parcels" (the number in each