

THE PALE RACES OF THE STELLER JAY

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Few birds have been as much discussed with as wide disagreement as the pale races of the Steller Jay (*Cyanocitta stelleri*). Within the area from northern Utah to Zacatecas, Mexico, four names have been used in recent years, and all four have been applied, by different authors, to birds taken in Arizona. In 1946, through the courtesy of the late Max M. Peet and the authorities of the United States National Museum, the Fish and Wildlife Service, the American Museum of Natural History, and the University of Michigan Museum of Zoology, I examined a number of specimens, but concluded that it was impossible to understand their taxonomy, nomenclature, and migrations without further collecting. This has now been done, and the present review is based on recently collected material, including additional specimens borrowed from the universities of Utah and Arizona, the Museum of Comparative Zoology, the Museum of Vertebrate Zoology, Carnegie Museum, the Dickey Collection at the University of California, Grand Canyon National Park Museum, and the collections of I. N. Gabrielson, Lyndon L. Hargrave, and Gale Monson, to all of whom I am likewise greatly indebted. An especially critical series from Nevada was made available by Warren M. Pulich.

Fundamental considerations in the geographic variation of this jay are the facts, first, that back color varies widely with wear (season and age) and with museum age; second, that blue feathers, in this as in all species with any blue studied by me, are palest when first grown and become darker with wear; and, third, that adults tend to have longer crests, wings, and tails than immature individuals, and males average larger than females, but the differences are less pronounced than in certain other corvids. Lists of specimens examined will be limited to those used in the final stages of this study and include a larger amount of recently collected material than was available to me earlier.

Previous authors have concluded that the palest populations of *stelleri* inhabit Durango, Zacatecas, and Jalisco (Ridgway, *Birds N. and M. Amer.*, part 3, 1904:359); or southern Nevada and southwestern Utah (Behle, *Bull. Univ. Utah*, 34, 1943:48); or Colorado, New Mexico, Arizona, and extreme northern Sonora (van Rossem, *Pac. Coast Avif.* No. 24, 1936:33; see also other papers of van Rossem cited below). As regards size, we are told that Mexican birds average about 20 mm. shorter in wing length than do specimens from New Mexico and Colorado (van Rossem, *Bull. Mus. Comp. Zool.*, 77, 1934:453), and similar trends are noted by Ridgway (*loc. cit.*) and Oberholser (*Proc. Biol. Soc. Wash.*, 50, 1937:118); whereas Behle (*loc. cit.*) concludes that there are no appreciable size differences in these races. The backs of specimens from Arizona and New Mexico are described in various terms, all of which incorrectly emphasize a brownish cast.

While the Steller Jay apparently performs no regular migrations, it is not entirely sedentary. Its movements are less conspicuous than those of the Blue Jay (*Cyanocitta cristata*), but in some years individuals or even flocks appear at points more or less remote from the breeding range. Presumably most such movements are southward, but Hough (*Condor*, 51, 1949:188) records a bird which had evidently moved nearly 400 miles due north. We know virtually nothing about these movements.

Three races appear to be usefully recognizable in the region in question, even though none is 100 per cent separable from the others:

Cyanocitta stelleri macrolopha Baird

Cyanocitta macrolopha Baird, *Proc. Acad. Nat. Sci. Phila.*, 7:118, June, 1854 (100 miles west of Albuquerque = Agua Fria Spring [now Paxton], Zuni Mts., New Mexico).

Cyanocitta stelleri percontatrix van Rossem, Trans. San Diègo Soc. Nat. Hist., 6:328, June 5, 1931 (Hidden Forest, Sheep Mts., Clark Co., Nevada).

Cyanocitta stelleri cottami Oberholser, Proc. Biol. Soc. Wash., 50:117, 1937 (Provo, Utah).

Diagnosis.—A race of the interior series, with white head markings; decidedly paler than the northern, coastal, or far-southern races, including *annectens*, yet darker both above and below than the birds of central and southern Arizona and adjacent Sonora and averaging slightly larger.

Measurements.—Seven adult males: wing (chord) 149-158 mm. (average, 154.8 in northern Utah, 151.7 in Zuni Mts.); tail 135.0-158.5 (averages, 148.0 and 136.9, respectively). Three adult females: wing 144.2-150.3, tail 131.8-141.4 mm.

Range.—Northern Utah and Colorado south to southern Nevada, southwestern Utah, and the mountains of central northern New Mexico. Sporadically south in winter nearly, if not quite, to the Mexican border, and across that line in 1893-4 (Sonoyta, Sonora).

The application of the name *macrolopha* has been uncertain. Baird's type, taken by Kennerly and Möllhausen on November 17, 1853, was later mounted and therefore cannot be relied upon for color comparisons. It was described a few years later as "dark ashy brown with a gloss of greenish" on the back (Baird, Cassin and Lawrence, Pacific R. R. Repts., 9, 1858:582), but it is now pale. In the absence of other topotypes, I made a special trip at the same season (November 26, 1946) to the type locality and secured three adults which agree in measurements with the type (an unsexed adult). These specimens, which may be considered "neotypes," confirm the dark color mentioned by Baird, and *macrolopha* thus becomes the proper name for the race later named *cottami*.

Specimens from northern Utah agree well in color with the three neotypes. Those from southern Nevada and southwestern Utah seem more variable, a proportion of them (especially in the Pine Valley Mts.) being near the next race, but on the whole they are best associated with *macrolopha*. This agrees with the conclusions of van Rossem (Pac. Coast Avif. No. 24, 1936:34), whose only error was in using specimens from extreme southern Arizona as representative of *macrolopha*.

Size differences are matters of averages, at most. While other populations do not give such large measurements as the four adult males and two adult females from northern Utah, these are probably not truly representative. Of the four immature specimens measured from northern Utah, the largest, although sexed as a female, is the type of *cottami*. The difference between averages from southern Arizonan specimens and southern populations of *macrolopha* is a mere three or four millimeters in both wing and tail. The figures given above are based on specimens from northern Utah and the Zuni Mountains only and not on any from farther southwest, where less typical *macrolopha* occurs. The respective type specimens measure: *macrolopha*, wing 151.0, tail 137.5; *cottami*, 152.0, 141.3 mm.

Specimens recently examined.—ARIZONA, 5: near Eagar, Oct. 18, 1934; White Mts., Sept. 26 and Nov. 26, 1936; east of Flagstaff, Jan. 26, 1936; Burnt Ranch, near Prescott, Jan. 8, 1926. CALIFORNIA, 1: near Blythe, Feb. 23, 1935. NEVADA, 9: Charleston Mts., Feb. 5, 1931, Aug. 13, 1932, Sept. 26, 1930 (2), Oct. 21, 1949 (5). NEW MEXICO, 19: Zuni Mts., Nov. 26, 1946 (3), near Santa Fe, Nov. 10, 1947; near San Antonio, Jan. 2, 1942; Organ Mts., Feb. 25, 1920; near Las Cruces, Jan. 17 (4) and 20 (3), 1920, Feb. 6 (2) and 17 (3), 1920, and Apr. 23, 1920. TEXAS, 1: "Frijole," 8500 feet alt., Jan. 1, 1939. UTAH, 20: Uinta Mts., July 2, Aug. 28 (2), and Sept. 13 and 15, 1937; 20 mi. SW Duchesne, June 19, 1937; east of Ogden, Sept. 10, 1943 (2); Silver Lake P. O., Salt Lake Co., Sept. 10, 1947; White Mt., Sevier Co., Oct. 19, 1941; Zion Canyon, no date; Pine Valley Mts., Oct. 14 (2) and 20, 1937, and Sept. 13, 1941 (6). Total, 55 specimens.

Cyanocitta stelleri browni, new subspecies

Type.—Adult male, no. 731, collection of Allan R. Phillips, taken in Carter Canyon, near Summerhaven, Santa Catalina Mountains, Arizona, September 21, 1947, by A. R. Phillips, original number 1163.

Diagnosis.—Very similar to both *C. s. macrolopha* Baird and *C. s. diademata* (Bonaparte), but averaging paler than either and very slightly smaller than the former. As compared with *macrolopha*, the difference is most distinct on the back, chest, breast, and belly, but the rump, wings, and tail also average a little paler.

Measurements.—Twelve adult males: wing 141.7-151.5 (average, 148), tail 125.2-140.7 (134). Seven adult females: wing 141.3-146.0 (142.7), tail 127.7-133.5 (130.7). Six immature males: wing 141.8-147.0 (144), tail 128.0-136.4 (130).

Range.—Mountains of Arizona generally, and southern and presumably central New Mexico south to western Texas (Davis Mountains), northern Chihuahua, and northern Sonora (San José Mountains and Los Pinitos). Winter visitor irregularly in adjacent lowlands.

This race may appropriately be dedicated to Herbert Brown, the pioneer resident naturalist of the inland southwest. Its distribution probably extends into extreme southern Utah at Navajo Mountain; specimens from adjacent localities in Arizona are distinctly closest to *browni*, a conclusion already announced by Woodbury and Russell (Bull. Univ. Utah, 35, 1945:86). To the west, however, the range of *browni* is more restricted, including the Prescott area and the Hualpai Mountains, but perhaps no farther north. A single specimen from the Juniper Mountains, one from near Jacobs Lake on the Kaibab Plateau, and two from near Frazier Well (Hualpai Indian Reservation), all taken in October and early November, 1948, are as near one race as the other. Like other indeterminate specimens, therefore, they are not included in the list of specimens examined. Birds from central southern Arizona are most typical.

Specimens recently examined.—ARIZONA, 51: Hualpai Mts., Nov. 28 (2) and Dec. 2, 1947, Aug. 27 and 29 and Sept. 29 (3), 1948, and Sept. 15, 1949; Prescott, Aug. 2, 1928; South Rim of Grand Canyon, Aug. 14, 1941; near and east of Flagstaff, Dec. 9, 1931, and Nov. 26, 1936; Betatakin Canyon, Tsegi Canyons, Navajo National Monument, Jan. 14, 1938; Tsailee Camp, Lukachukai Mts., May 25, 1935; near Eagar, Apr. 1, 1935; White Mts., Sept. 15 and 16 (2), 1934, Oct. 2 (2), 1934, Mar. 8 and 27, 1935, Sept. 15, 1936, Oct. 6 and 7, 1936, and Dec. 14, 1936; near Granville, below Blue Range, May 6, 1935; Chiricahua Mts., Nov. 15, 1948 (2); Huachuca Mts., April 20 and 29 (2), 1937, and May 13, 1938; near Patagonia, Jan. 17 and Mar. 5, 1948; Santa Rita Mts., July 6, 1932, Nov. 13, 1948, and Aug. 26, 1949; Santa Catalina Mts., June 5, 1933, Aug. 31 and Sept. 3, 1938, Sept. 21 and Dec. 28, 1947, Aug. 19 and Sept. 4 (2), 1949, and Feb. 9, 1950; near Tucson, Dec. 20, 1943; Phoenix, Oct. 27, 1943; Camp Creek, northeast of Phoenix, Dec. 2, 1934. NEW MEXICO, 2: West Pueblo Creek, Catron Co., May 18 and 19, 1937. Total, 53 specimens.

Cyanocitta stelleri diademata (Bonaparte)

Cyanogarrulus diadematus Bonaparte, Consp. Avium, 1:377, May 6, 1850 [= Feb. 3, 1851] (Zacatecas, Mexico).

Diagnosis.—Similar to the preceding two races, but darker below. According to van Rossem (Bull. Mus. Comp. Zool., 77, 1934:453) "darker throughout, with the dark color of the pectoral region extending well down onto the chest," and averaging slightly smaller. The size difference is insignificant; lack of proper material makes it impossible for me to verify any differences in dorsal coloration, but Durangan specimens are dark below and apparently on the crown-streaks. I therefore follow the A.O.U. Committee (Auk, 63, 1946:430) in accepting this separation.

Measurements.—"Males" average 142.5 mm. in wing length (van Rossem, *loc. cit.*).

Range.—Sierra Madre Occidental from southern Sonora and Chihuahua south to Zacatecas, Jalisco, and Nayarit.

The dark birds that occur in the southernmost United States in winter are generally small, and should be compared with *diademata*. I have seen little material from Mexico, and Mexican specimens in good plumage seem to be scarce in collections. No specimens of this race have been examined recently.

Museum of Northern Arizona, Flagstaff, Arizona, March 26, 1950.