

## A NEW RACE OF BLACK-CHINNED SPARROW FROM THE SAN FRANCISCO BAY DISTRICT

By ALDEN H. MILLER

During the spring of 1928 the author was fortunate in finding a small colony of the Black-chinned Sparrow (*Spizella atrogularis*) in the Berkeley Hills, Alameda County, California. This species of sparrow has been reported from this region of the state but once previously. Mr. D. A. Cohen (Bull. Cooper Orn. Club, 1, 1899, p. 107) records taking a male Black-chinned Sparrow in the coast-range hills of Alameda County on May 27, 1899. Mr. Cohen, during the course of a recent conversation with the author, stated that the bird was collected near the Contra Costa County boundary line, not far from the town of San Ramon. At the time of his observation he believed the species to be breeding in the vicinity although no other individuals were identified with certainty. A few subsequent trips to the same locality have failed to locate the species again, he reports. The bird collected in 1899 is still in Mr. Cohen's possession and has been available for the present study.

Field notes show that Black-chinned Sparrows were first observed by the present writer on May 27, 1928, in Strawberry Cañon on the upper campus of the University of California, Berkeley. The first bird, a male, was found singing on a south-facing hillside covered with *Baccharis pilularis* and *Artemisia californica*. This bird was watched for forty-five minutes and behaved as if stationed for breeding. An hour later a male was heard singing on a similar hillside more than a quarter of a mile to the south of the previous point of observation. On June 6 no birds could be found at the two places where they were noted before, but a male was found across the cañon on a north exposure in a similar type of cover. The bird sang repeatedly from the top of a small eucalyptus tree at the edge of the brush. Search for one and one-half hours for possible female and nest was of no avail. The male bird could not be located on subsequent expeditions to this hillside. On June 10, three males were heard on the steep, south-facing slope of Claremont Cañon, again in *Baccharis* and *Artemisia* brush. A female was located in company of a male and shortly the pair was observed feeding young just out of the nest. A small juvenile, able only to flutter about, was caught by hand and preserved in order to establish the breeding record. Four days later at the same place a male was shot, doubtless the parent of the juvenile previously collected. Immediately after the bird was shot three other males were heard singing on the same hillside. Downy juveniles were found again on June 17 in an adjacent brush area. An estimate of at least five pairs was made for the immediate vicinity on this date. On later visits two more adult males and one immature bird were obtained. The latter, taken August 13, was in fresh fall plumage and was found in a company of Rufous-crowned and Bell sparrows. No other Black-chinned Sparrows were identified at this time.

Birds collected in the immediate vicinity of San Francisco Bay are sometimes found to be considerably soiled and their colors accordingly altered. With this fact in mind the cause of the decidedly dark coloration seen in the local Black-chinned Sparrows was sought. Microscopic examination of the feathers of the breast and side of the head of two of the adults obtained showed an average of sixteen dirt particles on each barbule. Similar examinations were made of southern California specimens of Black-chinned Sparrows taken at the same time of year, with an average of fifteen particles resulting. The averages were based on drawings made of barbules selected from similar points near the feather tips. No difference in the

type of dirt particle on the feathers of the Berkeley birds as compared with southern California birds could be detected under the microscope. Specimens from both Berkeley and southern California, washed in gasoline followed by xylol, showed a reduction of dirt particles to two and one-half per barbule. The general appearance of the birds was changed, in that the colors in both cases were brightened, but the contrast between Berkeley and southern California birds was even more apparent than formerly. The fresh juvenal and first fall plumages of the Berkeley birds have proved to be nearly devoid of dirt and in general have been found to sustain the differences seen in the breeding plumage of the adult males.

In 1929 the sparrows did not return to Claremont Cañon, nor could they be found in any of the brush areas of the Berkeley Hills. The entire day of May 11 was spent without success in a search for Black-chinned Sparrows in the *Adenostoma* brush on Mount Diablo in eastern Contra Costa County. On May 22, near the summit of Las Trampas Peak nine miles west of Mount Diablo, a bird was heard singing, but it could not be located in the strong wind which was blowing at the time. A return to Las Trampas Peak three days later was successful, and two males were collected. The brush cover on the west slope of the hills at this point is almost pure *Adenostoma fasciculatum*, with some *Salvia mellifera*, and a small amount of *Ceanothus*. The males collected were stationed in their respective territories and were singing constantly. Besides these birds, a pair of sparrows, presumably male and female, was seen feeding together in the brush. They were followed for a short time in the hope that a nest might be located, but finally disappeared, and neither was obtained. There is a considerable extent of *Adenostoma* association along Las Trampas Ridge as well as on other ridges in the near vicinity. The birds doubtless are to be found sparsely distributed throughout this association. It may be that the birds did not arrive on the breeding grounds this year until the middle of May, thus accounting for their apparent absence from Mount Diablo on May 11.

The plumage of the birds collected on Las Trampas Peak is clean and much less worn than the plumage of the males collected in June of 1928, at Claremont Cañon. The specimens from Las Trampas have confirmed the conclusion that the Black-chinned Sparrows from the San Francisco Bay district are unlike those from southern California. Compared with the habitat of *Spizella atrogularis cana*, the coast range hills of the Bay district present a colder and more humid climate, especially during the breeding season. Either this difference or other associated environmental factors have been potent in changing many vertebrate animals of the Bay region, and seemingly, in like manner, have affected *Spizella atrogularis*. The probable breeding stations for the species, nearest Contra Costa and Alameda counties, are Coulterville, Mariposa County (Grinnell and Storer, *Animal Life in the Yosemite*, 1924, p. 458) and south-central Monterey County (H. R. Taylor, *Nidologist*, II, 1894, p. 10). The former locality is included in the Sierra foothill sub-faunal district and the latter in the San Joaquin, or perhaps better the San Diegan district. Even though the distribution of the proposed subspecies be incompletely known, the distinguishing features are of such a nature and degree as to warrant naming the race at this time.

*Spizella atrogularis caurina*, new subspecies

San Francisco Black-chinned Sparrow

*Type*.—Male adult, no. 53948, Mus. Vert. Zool.; Las Trampas Peak, elevation 1700 feet, Contra Costa County, California; May 25, 1929; collected by Alden H. Miller; orig. no. 523.

*Diagnosis*.—A subspecies of *Spizella atrogularis* characterized in comparison with

the other races by dark and less brown coloration. Neck, lower throat, and breast between no. 6 gray and light neutral gray (see Ridgway, Color Standards and Color Nomenclature, 1912, pl. LIII); whitish area of belly narrowly restricted, and tinged with gray; flanks and under tail coverts pale neutral gray. Pileum and hind neck near deep neutral gray, usually lacking shades of brown; black, cinnamon, and cinnamon brown tones of back deep; rump and upper tail coverts neutral gray. Wing and tail long as in *S. a. atrogularis*. Breast and flanks of juvenile with pronounced streaks of dark neutral gray.

*Comparisons.*—The coloration of the head and under parts in the adult male of the new race most closely resemble *atrogularis* (in the subspecific sense) of Mexico and Arizona, but differs in having deeper and still more slaty tones of gray, particularly on the auriculars and borders of the black area of the chin. It differs further in the deeper color tones of the back and in the darker belly. Although the wing and tail are long as in *atrogularis*, the culmen and tarsus are shorter. *Caurina* differs from *cana* of southern California and Lower California in a decided general lack of brown and buff colors on the body plumage and in the smaller area of white on the belly; the gray of the head is distinctly darker. The cinnamon of the back of *cana* usually becomes more nearly cinnamon-rufous in *caurina*.

*Range.*—In late spring and summer, the Upper Sonoran zone of the coast range hills of Contra Costa and Alameda counties and probably also Santa Clara County.

*Remarks.*—Birds from Santa Lucia Peak and Big Sur River, Monterey County, are clearly referable to *cana*, but the two birds from the latter locality show a slight trend toward *caurina*. No actual specimens are known from the western slope of the Sierra Nevada north of Kern County, although the species has been observed in Mariposa County. Some few birds from southern California taken in March and April approach *caurina* in coloration, but all are of small size and do not attain the true characters of the San Francisco race. They are comparable in every way with the birds from the Big Sur River. At the present time there is no sure evidence to show that *caurina* passes through southern California in migration.

The immature plumage of *caurina* stands in sharp contrast with the same plumage of *cana*, in that the underparts are neutral gray with almost a total lack of the buff tippings so extensively seen in the fresh fall plumage of the southern California birds. The pileum is decidedly darker in the new race, the new feathers being only slightly tipped with brown. In these particulars, as well as in other details, the immature bird, no. 53947, Mus. Vert. Zool., plainly shows the general characters of the new race.

The juvenile, no. 53945, Mus. Vert. Zool., the first specimen collected at Claremont Cañon, aside from the pronounced streaking of the breast, is darker on the head and back than are any of the five available specimens of *cana* in comparable plumage. This small juvenile retains some of the natal down on the feather tips.

COMPARATIVE MEASUREMENTS (IN MILLIMETERS) OF SPECIMENS OF THE RACES OF *SPIZELLA ATROGULARIS*

	Wing	Tail	Exposed culmen	Tarsus
<i>S. a. atrogularis</i>				
Average of four adult males <sup>1</sup>	63.7	70.7	9.0	19.5
<i>S. a. cana</i>				
Average of thirty adult males <sup>2</sup>	62.5	66.7	8.5	18.3
	(59.4-64.9)	(61.7-68.9)	(8.2-8.9)	(17.3-19.5)
<i>S. a. caurina</i>				
Average of five adult males	64.1	69.6 <sup>3</sup>	8.3 <sup>3</sup>	18.3
No.	Sex	Date	Locality	
53948 <sup>4</sup>	♂ ad.	May 25	Las Trampas Peak	64.4
(type)				70.3
524 <sup>4</sup>	♂ ad.	May 25	Las Trampas Peak	64.5
495 <sup>4</sup>	♂ ad.	June 19	Claremont Cañon	61.4
53946 <sup>5</sup>	♂ ad.	June 19	Claremont Cañon	65.2
494 <sup>4</sup>	♂ ad.	June 14	Claremont Cañon	65.2
				69.7
				8.5
				8.4
				8.7
				18.6
				19.7
				17.4
				17.3
				18.7

<sup>1</sup> Compiled from measurements given by Grinnell and Swarth (Auk, XLIII, 1926, p. 477).

<sup>2</sup> Maximum and minimum in parenthesis.

<sup>3</sup> Four measurements only.

<sup>4</sup> Coll. A. H. Miller.

<sup>5</sup> Coll. Mus. Vert. Zool.