

50 birds have been confined in this study. In addition, ten birds, sexed internally and tagged, were released in natural populations.

Subsequent observations on these tagged birds of known sex, both in the field and in captivity, have shown the original observations to be correct and that sexes can be distinguished in the field with complete accuracy on the basis of voice.

Anatomical studies of more than 60 birds, about evenly distributed for sex (but of unknown age), have shown a consistent difference in the size and shape of the bronchial syrinx characteristic of this species. The accompanying diagrams (fig. 47) illustrate these differences.

The voice differences are less readily indicated. Basically, the female gives a call with a nasal quality whereas the male note invariably lacks the nasal quality. Generally the female calls are at a somewhat lower pitch than the corresponding male notes.

The most readily distinguished notes are their "attention" and "challenge" notes. The former consist of the clear *puhk* of the male and the nasal *poonk* of the female. The latter consist of a crowing *kuh-kuh-kuh* from the male and a cackling *cack-ka, cack-ka* from the female. On other occasions the male gives a single *puhk-uh* or a *puhk-uh, puhk-uh, puhk-up, uhk, uhk*, the female a *punk-unk*. During times of tension the male gives a nervous *puhk-cow-ah* while the female gives a *coo-ah*. Other notes have been recorded, a few of which have not been well enough studied to determine the corresponding note of the other sex. However, these least known notes are seldom given, or are given only in connection with courtship or care of the young.

In no instance has the same note been heard from both birds of known pairs nor have I wrongly identified notes of birds whose sexes later were determined.—GORDON W. GULLION, *Museum of Vertebrate Zoology, Berkeley, California, April 5, 1950.*

A New Race of Mountain Chickadee from the Utah-Idaho Area.—Comparison of several series of the Mountain Chickadee (*Parus gambeli*) collected by the writer in recent years in Utah with specimens on loan from surrounding areas has led to the conclusion that the population of Utah, southern Idaho and southwestern Wyoming differs from those of *P. g. inyoensis* of the Great Basin to the west, *P. g. grinnelli* to the north, and *P. g. gambeli* of the Rocky Mountains to the east and southeast. This population may be described as follows:

***Parus gambeli wasatchensis*, new subspecies**

Type.—Adult male, no. 9203, Univ. Utah Mus. Zool., taken at Silver Lake Post Office (Brighton), 9,000 feet, head of Big Cottonwood Canyon, Wasatch Mountains, Salt Lake County, Utah, on September 29, 1946; collected by William H. Behle, orig. no. 2985.

Subspecific characters.—Closest to *P. g. inyoensis* but distinguished from that race by having the dorsum a darker color with a less grayish tone. Compared with *P. g. gambeli*, dorsum paler, less brownish; bill longer, narrower and more tapering. Likewise differs from *P. g. grinnelli* in having the dorsum lighter, with the bill longer, narrower and more attenuated.

Measurements.—Twenty-seven males: wing 73.3-67.7 (70.4), tail 68.7-59.7 (63.7), bill length from nostril 9.4-8.0 (8.5), depth of bill at base 4.0-3.0 (3.5), width of bill at anterior margin of nostril 4.4-3.2 (3.8). Twenty-four females: wing 69.0-64.5 (66.6), tail 65.8-58.4 (60.8), bill length from nostril, 9.2-8.0 (8.5), depth of bill at base 4.4-3.0 (3.3), width of bill at anterior margin of nostril 4.5-3.2 (3.7).

Geographic range.—The mountains of central and southern Idaho, southwestern Wyoming and all of Utah except along the western margin of the state.

Specimens examined.—IDAHO. Valley County: 5 miles east Warm Lake, 7,000 feet, 1 (July); 5 miles west Cape Horn, Sawtooth Range, 1 (July). Adams County: 3 miles west Payette Lake, 5,400 feet, 3 (July). WYOMING. Uinta County: Fort Bridger, 6,700 feet, 1 (September). UTAH. Summit County: Smith Morehouse Creek, Weber River, 1 (October). Duchesne County: 4 miles up Brown Duck Canyon, northwest Moon Lake, 9,000 feet, Uinta Mountains, 2 (September). Uintah County: head of Ashley Creek, 9,500 feet, near Trout Creek Park, 20 miles northwest Vernal, 6 (September). Davis County: Bountiful Peak Picnic Ground, 8,500 feet, Head of Farmington Canyon, 1 (November). Salt Lake County: Silver Lake P. O. (Brighton), 8,750 feet, head of Big Cottonwood Canyon, Wasatch Mountains, 23 (June, August, September); Bell's Canyon, 7,800 feet, 18 miles southeast

Salt Lake City, 1 (September). Kane County: Duck Creek Ranger Station, 8,600 feet, 22 miles south-east Cedar City, 12 (June); Red Canyon, 5,700 feet, 6 miles north Kanab, 4 (December); Tinny Canyon, 5,400 feet, 4 miles northwest Kanab, 3 (September-December); Kaiparowits Plateau, 7,000 feet, 2 (August).

Remarks.—In accord with its central geographic position, this new race has color characters that are intermediate between the races *inyoensis* and *gambeli*. The total aggregate of features of *wasatchensis*, however, shows closer affinities with the former, for the Utah population has the same size as *inyoensis* as well as the same type of slender, attenuated bill. It differs in being darker on the flanks and back. *Wasatchensis* is not so dark, however, as *gambeli* and further differs from that form in bill characters, the bill of *gambeli* being shorter, wider and deeper at the base, thus giving the general impression of being stubbier. The races *gambeli* and *grinnelli* are very close in their characters, the latter being darker, perhaps, on the back. Thus, *wasatchensis* differs from *grinnelli* in essentially the same way as it does from *gambeli*.

As compared with the extensive range ascribed to *gambeli*, this new race has a relatively restricted range and on its fringes intergrades with all surrounding races. The chickadees of the mountain ranges of western Utah, namely the Pine Valley, Deep Creek and Raft River mountains, are intergrades between *wasatchensis* and *inyoensis* although on the whole closest to the latter. The northern limits of *wasatchensis* are seemingly reached in central Idaho, intergradation with *grinnelli* occurring to the north until *grinnelli* in typical form occurs in Kootenai and Bonner counties. Breeding specimens from 5 miles east of Warm Lake and 5 miles west of Cape Horn, Sawtooth Range, Valley County, and 3 miles west of Payette Lake, Adams County, are still referable to *wasatchensis* even though they are intergrades toward *grinnelli*. Farther east the chickadees are intergrades toward either *grinnelli* or *gambeli*, since it is not clear where the latter two races are best divided. A single worn specimen from 3 miles northwest of Victor, Teton County, and 5 in fresh fall plumage from near Ashton, Fremont County, are dark but have longer bills than *grinnelli* or *gambeli* and are thus seemingly closest to *wasatchensis*. A single August specimen from Green River Lakes, Sublette County, Wyoming, is also intermediate with a shorter bill closest to the average condition of *gambeli* or *grinnelli*.

Three September birds from near Saratoga, Carbon County, Wyoming, and one from Centennial, Albany County, Wyoming, are *gambeli*. Specimens from the Uinta Mountains in northeastern Utah and a fall straggler from nearby Fort Bridger, Wyoming, are *wasatchensis* in typical form. Probably *wasatchensis* and *gambeli* intergrade along the mountains of central eastern Utah and western Colorado, for a few birds from the La Sal Mountains are browner than typical *wasatchensis* and have stubby bills, thus suggesting *gambeli*.

Concerning the southern limits of the range of this new race, the chickadees from the Cedar Breaks area in southern Utah are clearly *wasatchensis*. A blending, however, occurs with *gambeli* in northern Arizona as indicated by a few worn specimens from Navajo Mountain and Mt. Trumbull. A series of fall-taken chickadees from the San Francisco Mountains are closest to *gambeli*.—WILLIAM H. BEHLE, *University of Utah, Salt Lake City, Utah, March 20, 1950.*

Eastern Phoebe in San Diego County, California.—A "different" phoebe first seen at Catfish Cove, Henshaw Lake, northern San Diego County, California, October 26, 1949, was tentatively identified as an Eastern Phoebe (*Sayornis phoebe*) by Mrs. Sidney S. Doner of Escondido, California, on October 29, 1949, and positively identified by Mrs. Doner and myself November 23, 1949. The bird had not been seen in the area on the preceding October 15th and 25th. It was seen on eight days during the two-month period from October 26 to December 26 and observed carefully seven times for periods of three hours or more from noon until mid-afternoon. On January 3, 1950, it was absent. According to Grinnell and Miller (Pac. Coast Avif. No. 27, 1944:252), the Eastern Phoebe is a casual visitant in California.

An attempt was made to study the bird in its unusual wintering area. Most interesting was its relation to the resident Black Phoebe (*Sayornis nigricans*). On November 3, the Eastern Phoebe followed and associated with the Black Phoebe as closely as a fledgling does with a parent bird. It was so active as to make the Black Phoebe appear lethargic. It called "phe-be" almost constantly.

On November 6 we found the association weakened. The Eastern Phoebe followed the Black but not closely nor as often as in our first observation period. It called less persistently. It perched motionlessly for intervals. On November 11 the two phoebes associated together in the same manner