

bare branches of a bush) or not prominent (in the middle of the bush or on the ground), and delivered songs were tabulated by site. During the period of observation, songs delivered from prominent positions amounted to only 12.7 per cent of the total (7 of 55).

In mid-June 1965 experimental confirmation of field observations was sought, using techniques similar to Dilger's (*Auk*, 73:313-353, 1956) procedures. Papier mâché models were prepared; two were painted dull gray ("blanks"), and another was painted as a facsimile of a Black-throated Sparrow. During a trial, two posts 1.5 meters tall were placed 10 meters apart within the boundaries of a known territory, and a model was fastened to the top of each post. Songs from outside the study population were played, using the regular playback system of a Nagra IIBH tape recorder. The experimenter sat with the recorder under a tarpaulin blind beneath the model with which the song was paired. After an initial song burst of 45 seconds' duration to attract the territory holder, the song was played for the last 15 seconds of every minute for 10 minutes, which was the total duration of a trial. Responses to models and song were categorized according to orientation (facing toward singing model, silent model, or neither) and intensity (circle trial site, sing near site, or attack model). Eleven birds were tested; they were distributed among possible trial situations as: three blank with song, facsimile without song; two blank with song, blank without song; and six facsimile with song, blank without song.

Singing was the most intense reaction that could be elicited. Responses reaching attack intensity were not observed. In several trials, birds responded from a distance but did not approach the immediate location of the trial, and in two trials, two birds responded in what had previously been the middle of one bird's territory. The first brood was at or near completion at this time, and some slight shifts in territorial boundaries may have taken place.

The orientation of the birds to the models differed and may be of importance. The only three cases in which the birds appeared to orient toward the singing model were in trial situations of facsimile with song, blank without song. The only instance of apparent orientation to the silent model was in a trial situation of blank with song, facsimile without song. In all other trials the birds showed no particular orientation to either model, but circled the experiment location as a whole.

It is concluded that physical and visual contact are subordinate to vocal signals in territorial defense in the Black-throated Sparrow. The slight orientation toward the facsimile indicates, however, that visual contact has some importance. The role of visual signals may have more significance than is apparent from the experiment; earlier in the spring (22 May 1965) a male bird made an apparent supplanting attack on his mate in response to song playback from the tape recorder. However, this was the only attack witnessed during a total of about nine months of field observation.

It is not surprising that song plays a role dominant to visual display in territoriality in this species. Territories in the population were relatively large, about 120 to 150 meters in diameter, and visibility in the desert scrub habitat was remarkably limited. Thus, territorial defense mechanisms involving visual signals would not seem particularly effective or adaptive, and selection for vocal defense signals could be expected.

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An Additional Specimen of Coues' Flycatcher in California.—A male Coues' Flycatcher, *Contopus pertinax*, was collected on 29 September 1965 at the Imperial Irrigation District Experimental Farm No. 2, about 20 miles east of Holtville, Imperial County, California. This farm, about one mile north of the Mexican border, is an isolated eastern outpost of the vast agricultural lands of the Imperial Valley. It is essentially an oasis, with ornamental trees, groves,

fields, and abundant water. The nearest alternative source of water, except for the All American Canal, is 15 miles away.

The Coues' Flycatcher was in the company of migrant Western Wood Pewees and Olive-sided Flycatchers. It was easily distinguishable from the latter by its conspicuous yellow-orange mandible. The specimen (Los Angeles County Museum no. 60645) had a fully ossified skull, was moderately fat, and weighed 24.6 g. The only other specimen record from California is that of Cardiff and Cardiff (Condor, 55:217, 1953), obtained near the south end of the Salton Sea on 4 October 1952.

Phillips, Marshall, and Monson (Birds of Arizona, Univ. Arizona Press, 1964) describe Coues' Flycatcher as a "Common summer resident in the Transition Zone of southeastern and central Arizona. . . . On migration found in adjacent Upper Sonoran Zone." There are no records given for western Arizona or the Colorado River Valley.—G. SHUMWAY SUFFEL, 1105 North Holiston Avenue, Pasadena, California 91104, 5 August 1966.

Coastal California Record of a Tree Sparrow.—Grinnell and Miller (Pacific Coast Avifauna, 27:512, 1944) list the Tree Sparrow (*Spizella arborea*) as a rare winter visitant to California, found chiefly in the northeastern plateau region. They recorded a specimen from Riverside, Riverside County, on 7 February 1888 and one from Pacific Grove, Monterey County, on 13 October 1916. Another specimen was reported by Stager (Condor, 48:280–281, 1946) taken aboard ship on 14 May 1946, 50 miles south of the Golden Gate and 30 miles offshore. Because of the paucity of coastal reports for this species in California, indeed anywhere in the state west of the Sierra Nevada, a recent record is of interest. A Tree Sparrow was mist-netted and banded by the author at Point Reyes, Marin County, on 11 October 1965. The skull of the bird, when examined by the method described by Baird (EBBA News, 27:162–163, 1964), appeared to be incompletely ossified, and it is assumed that the bird was likely hatched during the 1965 breeding season. Color photographs of this bird, obtained through the courtesy of Barbara Margolis, are on file at the Museum of Vertebrate Zoology, University of California (Berkeley).—WILLET T. VAN VELZEN, Point Reyes Bird Observatory, Inverness, California, 20 July 1966.

Behavioral Interactions of Birds and White-tailed Deer.—A knowledge of interspecific associations between birds and wildlife is useful in understanding the niche of each species in the ecosystem. Rice and Mockford (Wilson Bulletin, 66:273, 1954), Riney (Condor, 53:178–185, 1951), Rice (Auk, 80:196–197, 1963), and Benson (Auk, 81:436, 1964) have mentioned several instances of birds benefiting by their association with ungulates. While studying behavior of white-tailed deer (*Odocoileus virginianus*) on the Rob and Bessie Welder Wildlife Refuge, San Patricio County, Texas, during 1961 and 1962, several observations were made of behavioral interactions between birds and deer. Following is a summary of observed encounters between these animals.

Deer and turkeys. The many encounters observed between deer and Wild Turkeys (*Meleagris gallopavo*) indicate that they tolerate each other peaceably even in close proximity. Intermingled feeding groups of deer and turkeys were seen frequently. The most obvious relationship was that of each species responding to the danger signals of the other. Frequently, strutting gobblers were alerted by the alarm snort of deer. On each occasion the gobblers immediately ceased strutting and moved into nearby brush, while a few began to give the clucking sound that is characteristic of frightened turkeys. On other occasions deer stopped feeding and looked in the direction of turkeys that were giving this sign of alarm.

Deer and vultures. Both Black Vultures (*Coragyps atratus*) and Turkey Vultures (*Cathartes aura*) are common on the Welder Refuge. Most of the many close encounters between deer and vultures were mutually passive. However, two groups of deer (a doe and fawn one time, and three does the other) appeared to be discouraged from drinking at a water tank by the presence of a single Turkey Vulture on a nearby fence post. Each group circled the water several times but did not go in to drink. Yet, on another occasion a doe passed within three feet of a Turkey Vulture on a pole and neither looked at the other.