

the chick on the branch and exhibited distraction behavior. The female did not appear. Neither adult nor chicks could be found in the vicinity the following day.

There are 4 references to possible rapid chick separation in Whip-poor-wills in the literature (Bent, U.S. Natl. Mus. Bull, 176, 1940; Fowle and Fowle, Can. Field-Nat. 68:37, 1954; Raynor, Bird-Banding 12:98-104, 1941; Tuttle, Bird-Lore 13:235-238, 1911), but the behavior is described nowhere in detail nor interpreted. The adaptive advantage of rapid chick separation is undoubtedly the increased probability that at least 1 of the chicks will survive nest disruption by a predator. I believe rapid chick separation is one more element of an anti-predator repertoire of adaptations in Whip-poor-wills which includes, in addition, cryptic coloration, brood site movement, and adult distraction behavior.—ERIC L. DYER, *Station 17, Vanderbilt Univ. Hospital, Nashville, TN 37232. Accepted 30 July 1976.*

**An intraspecific mortal attack.**—On the morning of January 6, 1976, I was looking out my window as 2 female House Sparrows (*Passer domesticus*) dove (hurtled) into the grass nearby. One held the other by the neck and after a few seconds the struggling victim lay still. The attacking sparrow, still on top of the nearly lifeless one, began to strike hammering blows with its bill on the head of the victim. Several sparrows flew near, and all flew off leaving the motionless body on the ground. Minutes later a House Sparrow returned, jumped on the dead sparrow and again struck it on the head several times, then flew away.

On 8 January I observed a similar incident involving female House Sparrows. The attacking sparrow held the neck of the struggling one, which eventually got loose. Both flew off, one pursuing the other.—VERA LEE GRUBBS, *3816 Elmer Lane, Shreveport, LA. 71109 Accepted 1 Mar. 1976.*

**Rufous-sided Towhees mimicking Carolina Wren and Field Sparrow.**—Eastern populations of the Rufous-sided Towhee (*Pipilo erythrophthalmus*) do not exhibit any marked local dialects, and the high percentage of unique song patterns in the songs of a local population suggests that what a bird hears when it is developing its song does not play an important role in determining the song patterns developed (Borror, Condor 77:183-195, 1975). It is thus of considerable interest to encounter eastern towhees whose songs (or song parts) are excellent mimics of other species. This paper is a report on the songs of 2 towhees (of several hundred I have recorded), one using an introduction consisting of Carolina Wren song phrases, and the other singing Field Sparrow songs. Both birds were seen when recorded.

**Mimicry of Carolina Wren.**—On 27 July 1975 I recorded a towhee near Murray, Kentucky (OSU recording No. 13679, with 67 songs), some of whose songs had an introduction consisting of (or containing) from 1 to 3 song phrases of a Carolina Wren (*Thryothorus ludovicianus*). The recording contained 5 different song patterns, 4 of which are shown in Fig. 1 (*A*, *B*, *E*, *F*); 2 (*A* and *E*) were normal songs for this population (a 2-note introduction followed by a trill) but 2 of the other 3 had Carolina Wren phrases in the introduction (*B* and *F* in Fig. 1), and a 5th contained only 2 Carolina Wren phrases (of the type in *F*, without the buzzy note and final trill). Most of the songs of the *B* pattern were sung in alternation with songs of the *A* pattern, while most songs of the *F* pattern were sung consecutively, only occasionally alternating with

songs of the *E* pattern. There was only 1 song of the 5th pattern, which was in a series of *F* pattern songs. Two Carolina Wrens were heard near where this towhee was recorded, but neither sang songs of the patterns sung by the towhee.

The wren phrases in pattern *B* of this towhee are of a pattern that is fairly common in the wren; I have found it in the songs of 27 birds (of over 380 recorded, from 16 states)—20 in central Ohio, 4 in southern Ohio, 2 in southwestern Kentucky (one about 50 km from the Murray towhee), and 1 near Chincoteague, Va. The towhee songs of pattern *B* all contained 3 Carolina Wren phrases, uttered at the rate of 3.64 per sec; the wren songs of this pattern contained from 1 to 8 phrases (average of 345 songs, 5.10), uttered at rates of 3.23 to 4.61 (average 3.72) per sec. Sonagrams of the final phrases of 2 of these Carolina Wren songs are shown in Fig. 1 (*C* and *D*).

Carolina Wren phrases of the type in *F* (Fig. 1) are less common than those in *B*; I have found such phrases in only 9 birds—6 in central Ohio, 1 in West Virginia, 1 in southwestern Kentucky (about 25 km from the Murray towhee), and 1 near Tallahassee, Florida. The towhee songs contained only 1 or 2 (average, 1.6) of the wren phrases, uttered at the rate of 2.27 per sec; the wren songs of this type contained from 2 to 5 phrases (average of 88 songs, 3.50), uttered at rates of 2.15 to 2.40 (average, 2.28) per

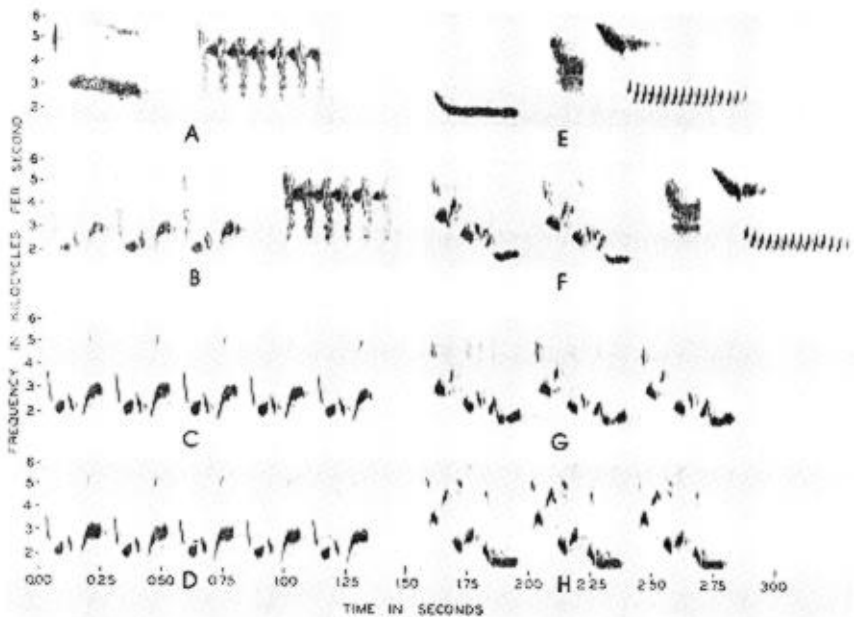


FIG. 1. Sonagrams of songs of a Rufous-sided Towhee (#13679, Murray, Ky., 27 July 1975), and final phrases of Carolina Wren songs. A, towhee, 13679-29; B, towhee, 13679-28; C, Carolina Wren, 12733-19, Blendon Woods, Franklin Co., Ohio, 19 March 1974; D, Carolina Wren, 12785-2, Georgesville, Ohio, 18 April 1974; E, towhee, 13679-58; F, towhee, 13679-55; G, Carolina Wren, 13651-20, Murray, Ky. (about 25 km from 13679), 8 July 1975; H, Carolina Wren, 3863-9, Blendon Woods, Franklin Co., Ohio, 18 April 1959.

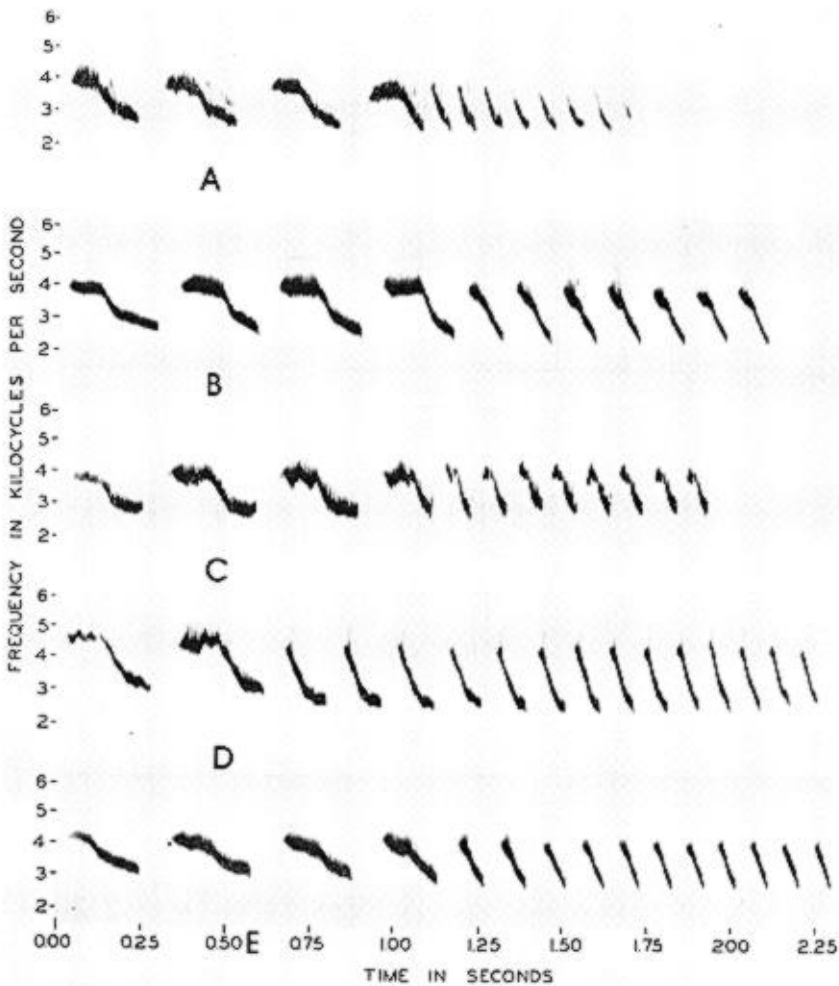


FIG. 2. Sonograms of Rufous-sided Towhee (A) and Field Sparrow (B-E) songs. A, towhee, 3146-10, Blendon Woods, Franklin Co., Ohio, 2 April 1958; B, Field Sparrow, 9840-4, Blendon Woods, 6 April 1969; C, Field Sparrow, 3897-1, Blendon Woods, 24 April 1959; D, Field Sparrow, 3830-1, Blendon Woods, 1 April 1959; E, Field Sparrow, 9271-1, Blacklick Woods, Franklin Co., Ohio, 29 March 1968.

sec. Sonograms of the final phrases of 2 of these Carolina Wren songs are shown in Fig. 1 (G and H).

*Mimicry of Field Sparrow.*—On 2 April 1958 I recorded a towhee in Blendon Woods, Franklin Co., Ohio (OSU recording No. 3146, with 13 songs), singing Field Sparrow (*Spizella pusilla*) songs. When I first heard this bird I thought it was a Field Sparrow, and it was not until I saw the bird and watched it sing that I realized that these songs

were being sung by a towhee. All the songs in the recording were of the same type or pattern; the songs were distinctly 2-parted and the notes were down-slurred, with the 3 or 4 notes in the first part uttered at the rate of 3.54 per sec, and the 4 to 8 in the second part uttered at the rate of 12.90 per sec. Individual songs contained 8–12 notes (average, 10.7), and averaged 1.46 sec in length (Fig. 2, A). Field Sparrows are common in the area where this towhee was recorded.

Field Sparrow songs are subject to considerable variation, and while one rarely finds 2 birds singing identical songs, the various song patterns may be classified in a number of major groups. Goldman (Ph.D. Thesis, Ohio State Univ., 1972), in a study of 197 Field Sparrows, mostly from central Ohio, recognized 40 major song pattern types; the songs of this towhee were of a type he found in 8 of the birds he studied. Other people might recognize a different number of major song pattern types in Field Sparrows; in my studies I have recognized 15 major types, and the songs of this towhee were of a type that I found in about 9% of the birds I studied; 4 songs of this type are shown in Fig. 2(B–E).

The songs of this towhee are shorter and contain fewer notes than most Field Sparrow songs; the songs Goldman studied averaged 2.64 sec in length, with an average of 23.20 notes. The final notes in the towhee songs are uttered more slowly than those in most Field Sparrow songs; Goldman found the note rate in the last part of the song to range from 5.9 to 35.7 notes per sec, and averaged 16.97 per sec.

*Discussion.*—Except for the Mockingbird (*Mimus polyglottos*), mimicry of 1 species by another in wild North American passerines appears to be quite rare. It has been reported in several species, but in only a few cases has the report been supported by audio-spectrographic analyses (e.g., in the House Finch, *Carpodacus mexicanus*, by Baptista, Z. Tierpsychol. 30:266–270, 1972). Most reports of mimicry in passerines (e.g., Snow, Wilson Bull. 86:179–180, 1974; Immelman, in Bird Vocalizations, R. A. Hinde, ed., Cambridge Univ. Press, London pp. 61–74, 1974; Nottebohm, Am. Nat. 106: 116–141, 1972; and others) involve species occurring outside this country. In passerines exhibiting local dialects it is generally assumed (and has been demonstrated in several species) that an individual's songs are learned from other birds, but in species that do not exhibit local dialects there is less evidence of the bird's ability to mimic.

The excellent mimicry by these 2 towhees of the songs of another species indicate that this species is at least capable of mimicking other birds, even though data from other sources (e.g., Borror, Condor 77:183–195, 1975) suggest that the song patterns a towhee develops are not greatly affected by what it hears. Both of the areas where these 2 mimicking towhees were recorded contained other towhees, yet their songs were unique; even the "normal" introductions and trills of the Murray bird were unlike those of 4 other towhees I recorded the same day within 1 km of this bird. These mimicking towhees must have had unusual exposure to the species they mimicked, and copied them in developing their own songs.—DONALD J. BORROR, *Dept. of Entomology, Ohio State Univ., Columbus 43210. Accepted 21 May 1976.*

**Heat loss from the nest of the Hawaiian honeycreeper, "Amakihi."**—The Amakihi, *Loxops v. virens*, is the most adaptable of the endemic Hawaiian honeycreepers, in many instances nesting successfully under conditions which are surprisingly cold for islands within the tropics (Berger, Hawaiian Birdlife. Univ. Press of Hawaii, Honolulu, 1972). One of the factors that might enable them to accomplish this is the construction