DISTRACTION DISPLAYS OR "INJURY FEIGNING" IN BIRDS

by William E. Davis, Jr.

Everyone interested in birds knows about the broken-wing act of the Killdeer, but how widespread is this type of behavior among birds? A literature search revealed that a broad spectrum of birds perform such displays. Knowledge of distraction displays dates back at least to Aristotle. Alexander Wilson described this activity in a passerine, an Ovenbird (Hann 1937). By the early twentieth century published reports documented distraction behavior in Worm-eating and Kirtland's warblers (Chapman 1917), and Forbush (1925-1929) mentioned such displays in the species accounts of at least eight passerines.

Attention was focused on the subject by a letter in 1935 to the editor of *The Auk* from Harry Swarth, a noted ornithologist from the California Academy of Sciences. Swarth stated that he had never seen a passerine bird, a grouse, or a quail resort to injury feigning. A veritable deluge of letters in response bore witness to distraction displays in American Redstarts, in Yellow, Chestnut-sided, Kentucky, Magnolia, Black-throated Green, and Bay-breasted warblers, in Ruffed Grouse and Northern Bobwhite, Chipping and Vesper sparrows, Mourning Dove, American Woodcock, Whip-poor-will, Common Nighthawk, and in several owl and duck species. The uproar reached Australia, where A. H. Chisholm (1936) wrote of distraction displays by passerines including Australian robins, whistlers, Australian wrens, quail-thrushes, and Australian chats among others.

More recently, Griscom and Sprunt (1957) added Black-throated Blue and Yellow-rumped warblers to the list of birds observed giving distraction displays. Harrison (1984) described a Canada Warbler spending "several hours at my feet, dragging her wings and trying to lure me away." Alexander Skutch (1976) added a number of Neotropical species to the list. The number of bird families represented on the list is substantial. Margaret Morse Nice (1943) cited thirteen orders and sixteen passerine families in which distraction displays occur.

Ornithologists generally use the term "distraction display" rather than "injury feigning" or "broken-wing act" to refer to this type of behavior. Welty (1975) pointed out that this puts the emphasis on the "demonstrated effectiveness rather than the conjectured intent of the bird." Skutch (1976) uses the terms "feigning injury," "broken wing ruse," "parental ruse," "lure display," and "disablement reaction," as well as his preferred "injury simulation." He points out that distraction displays also include behaviors other than simulation of injury. An example is "false brooding," in which ground-nesting birds

simulate sitting on a nest some distance from their actual nest. Nice (1943) prefers "nest-protection display" or "distraction display."

Many different behaviors are categorized as distraction displays (Armstrong 1947). Some birds, like the Killdeer, seem to simulate a broken wing, whereas many of the warblers appear to be sick or with their wing-quivering simulate helpless baby birds. For example, on my census plot in Foxboro in 1976, my pishing call induced a Nashville Warbler to give a distraction display described in my field notes as follows: "At the edge of an open wooded area the warbler flew and lit within about six feet of me. It then hopped among the branches and finally onto the ground with its tail raised and all the time flapping its wings furiously. Its wings fluttered so furiously that it reminded me of a hummingbird." Another instance occurred in 1977 at the Seney National Wildlife Refuge in Michigan. A Common Yellowthroat responded to my pishing call by "hopping about on the ground, both wings flapping, fanning, furiously." In June 1979 I stumbled upon an adult Ruffed Grouse with young. The mother bird "waddled away, low to the ground, with both wings flipping (short flaps) wildly, tail fully cocked (perpendicular) and fanned, mewing like a kitten."

Skutch (1976) describes what he calls the "rodent run," or "rat trick," in which the displaying bird assumes a hunched posture and scurries about with tail dragging, looking like a small rodent. A Black-and-white Warbler in my census area really had me fooled with this trick: "Injured bird act, fluttering both wings, skulking along dragging its tail. I thought at first it was a small mammal or maybe a baby Blue Jay. I followed it for about forty feet before I lost it in the underbrush." Another time I flushed an ovenbird from a nest in my census area. "The mother (?) bird 'waddled' or skittered off, looking like a small rodent scurrying through the leaf litter—I didn't see wings flapping."

In some birds such as the pratincoles, group distraction displays occur, with a dozen or more feigning injury at the same time (Armstrong 1947). Skutch (1976) gives examples of group displays, mentioning McCown's Longspurs, Parasitic Jaegers, and American Avocets.

Do distraction displays work? Skutch (1976) cites examples of animals that have been observed being "fooled." Besides man and dogs, he lists birds displaying for otters, weasels, stoats, foxes, coyotes, agoutis, and deer. Skutch added his own observation of a Black-striped Sparrow leading away a snake and mentioned reports of a plover leading away an oystercatcher and of an ant-tanager displaying before a motmot.

The frequency and intensity of distraction displays appear to be related to the stage of the reproductive cycle. For example, Nolan (1978) studied the distraction displays of Prairie Warblers and found that display intensity and frequency of display correlated with the stage of nesting. During nest building

only six female Prairie Warblers displayed weakly to moderately, whereas hundreds did not; during incubation another half dozen displayed out of nearly two thousand nest inspections; but when week-old young were in the nest, displays were frequent. For older chicks, displays were always given if the young birds called. At highest intensity the bird had vibrating, fully extended wings held straight out with the head and tail depressed and the tail fanned and in extreme cases depressed nearly ninety degrees from the line of the back. Birds moved with a crawling motion with the apparent difficulty of movement increasing with the intensity of the display.

Nice (1943) noted that Song Sparrows also displayed when the week-old young shrieked. Tuck (1972) reported that the displays of the snipe peaked with the culmination of incubation and suggested that the display may be related to hormonal activity. Common Snipe may also give displays when accompanied by young, as I witnessed on a 1977 trip to the Connecticut Lakes in New Hampshire: "One particular boggy path was crossed by a narrow stream. As I approached, three snipe exploded from the grassy stream, two young birds flying in one direction, an adult bird fluttering a few feet in the opposite direction and then settling back into the stream. This bird, with tail erect showing the reddish undertail coverts, paddled along the stream with both wings, producing the most extraordinary distraction display I have witnessed. I followed the bird and it finally flushed after paddling eight or ten feet."

Distraction displays are widespread, variable, and complex. A future article will examine how these fascinating behaviors evolved.

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WILLIAM E. DAVIS, JR., chairman of the Division of Science in the College of Basic Studies at Boston University, has recently completed a biography of Ludlow Griscom. Ted regularly contributes articles and drawings to this publication and serves on the board of directors. He would like to thank John C. Kricher for reading earlier drafts of this article and Jean D. Allaway for proofreading.