

TABLE 1
CHARACTERISTICS OF HIGH ZEES¹

Context	No. calls measured	Highest frequency (kHz)	Frequency range (kHz)	Duration (sec)
Sharp-shinned Hawk	3	8.87 ± 0.2	0.28 ± 0.06	0.10 ± 0.03
Saw-whet Owl	11	8.55 ± 0.19	0.42 ± 0.11	0.10 ± 0.02
Mink	25	7.76 ± 0.17	0.35 ± 0.12	0.07 ± 0.01

¹ Amplitudes were analyzed with a B and K level recorder type 2305. The dB measured at 1 m was 55.8 + 2.4, -3.3 for 25 mink calls. Amplitudes in dB were converted to N/m² for calculation of mean and SD, then converted back to dB (re 0.00002 N/m²).

The suddenness with which the predator appears in the area may be a factor in influencing the type of reaction (Weise pers. comm.).

The characteristics of high zeets are indicated in Table 1. The highest pitch of the call varied in different situations (the calls were lower pitched and of shorter duration in response to the mink). This call is similar to that of other passerines in similar situations (Marler 1957, Behaviour 11: 13). The call has characteristics that make it difficult for a predator to localize the caller: no sharp onset or ending, high pitched, and covering only a narrow frequency range (Marler 1955, Nature 176: 6). Marler and Hamilton (1966, Mechanisms of animal behavior, New York, Wiley) indicate that in other species the call is given only to aerial predators; but in the chickadee at least, it is elicited by a variety of predators regardless of whether they are flying. Marler and Hamilton (loc. cit.) note that birds usually mob perched predators, but that when a hawk flies over they move to cover if in the open and freeze. A more effective strategy for a bird with a predator in close proximity might be to call and freeze immediately.

The role of individuals within the flock in generating and terminating predator alarm is of interest. AOPR was the dominant male at the feeder and for several years had a breeding territory encompassing the feeder (Weise pers. comm.). Of the 8 cases in which we know the identity of the first to give the alarm, 7 involved males and 4 were AOPR. On the two occasions when we noted complete sequences of activities and AOPR was present, his chick-a-dee calls terminated the bout of high zeets after the predator left and seemed to serve as an "all clear" signal eliciting movement of others. Evidently one bird assesses the situation and his signal affects the behavior of other members of the group. These observations suggest that certain adults may be especially important in alerting the group and in signaling the resumption of normal activities.

An important selection pressure for flocking is the antipredator strategies of a flock vs. solitary individuals. This is certainly borne out by the observations that we report. A solitary individual that did not immediately spot a predator would probably be its next meal. However, flock members may benefit by others first sighting a predator. In winter, chickadee flocks typically consist of about four to eight individuals, both adults and immatures (not the offspring of the adults of the flock) (Weise pers. comm.). This flock structure seems especially to benefit the young and inexperienced birds that associate with adults. A more difficult evolutionary question is why adults tolerate the younger birds as kin selection does not seem to be operating.

We thank Robert Ficken and Charles Weise for their comments. C. Weise color-banded the birds and provided data on age and sex. Publication No. 12 of the University of Wisconsin-Milwaukee Field Station, supported by NSF Grant BMS74-19474.—MILLICENT S. FICKEN AND STEVE R. WITKIN, *Department of Zoology, University of Wisconsin-Milwaukee, Milwaukee, Wisconsin 53201*. Accepted 18 Sep. 75.

Predation on Rufous Hummingbird by Wied's Crested Flycatcher.—Reports of other birds preying on hummingbirds are rather uncommon in the literature. Among these reports are those of Lowery (1938, Auk 55: 280), Wright (1962, Auk 79: 112), Peeters (1963, Wilson Bull. 75: 274), and Mayr (1966, Auk 83: 664). With the exception of Wright's account, the other reports of hummingbird predation have involved raptors. Wright saw a male Northern Oriole (*Icterus g. galbula*) seize and peck a male Ruby-throated Hummingbird (*Archilochus colubris*) to death while both birds were feeding on blossoms.

Apparently the specific food habits of the Wied's Crested Flycatcher (*Myiarchus tyrannulus*) are unknown. Although stomach analysis data are absent for *M. tyrannulus*, all *Myiarchus* are known to hawk and forage for invertebrates. The normal prey of *M. tyrannulus* is undoubtedly much smaller than a hummingbird (W. E. Lanyon pers. comm.).

On 19 July 1974 at Cave Creek Ranch near Portal, Arizona I watched a Wied's Crested Flycatcher kill a male Rufous Hummingbird (*Selasphorus rufus*) at a hummingbird feeder. A Wied's Crested Flycatcher

had been noted perched in a tree overhanging the feeder for several days prior to the attack and at least one other resident of Cave Creek Ranch had seen a Wied's Crested Flycatcher perched for long periods of time overlooking his hummingbird feeders. The flycatcher swooped down from its perch above the feeder, extended its wings just prior to midair contact with the hovering hummingbird, and knocked the small bird to the ground. I was not able to determine which part of the flycatcher actually hit the hummer. The flycatcher then quickly picked up the stunned hummingbird in its beak by one of its wings and flew to a branch overhanging the feeder with the hummingbird dangling from its beak. The flycatcher repeatedly knocked the hummingbird against the branch with violent side-to-side motions of its head and then flew out of my view to a distant tree with its prey.

On 21 July at the same feeder, I saw a Wied's Crested Flycatcher dive through a swarm of feeding hummingbirds, but on this occasion the flycatcher failed to make contact with any hummingbirds.—GEORGE J. GAMBOA, *Department of Systematics and Ecology, University of Kansas, Lawrence, Kansas 66045*. Accepted 19 Sep. 75.

An unrecorded specimen of Eskimo Curlew from New Jersey.—Several authors have stated that no specimens exist to prove reports that the Eskimo Curlew (*Numenius borealis*) ever visited the shores of New Jersey during its abundance. In the Denver Museum of Natural History is an Eskimo Curlew (No. 14716), sex unknown, shot during the summer of 1880 (probably late August) by G. R. Hardenburgh in Squan (now called Manasquan), New Jersey. It is the first and so far as I can tell the only museum skin from this state.—EVE IVERSEN, *498 Boulevard, Apt. 211, Passaic, New Jersey 07055*. Accepted 17 Sep. 75.

Albino Mourning Dove sightings in Ontario.—During our study of Mourning Doves (*Zenaida macroura*) we saw a partially albino dove on three occasions. The first two sightings were on 18 June 1975 near a corn crib at Concession XIII, Lot 5, Burford Township, Brant County. At 1300 we watched two doves in a tree with 7 × 35 binoculars, from about 30 m for about one minute. One was of normal color, the other was white with some central grey rectrices and a dark eye region. At 1730 two doves, one normal color, the other white, flew from near the corn crib, circling overhead before flying off. The white dove had some dark primaries in both wings, and some central dark rectrices. It flew in an apparent "flap-glide" flight, typical of breeding males (Jackson and Baskett 1964, *J. Wildl. Mgmt.* 28: 293). The normally colored bird had tan breast feathers, characteristic of females. The third sighting was at 1300 on 26 June 1975 at Concession I, Lot 25, Middleton Township, Norfolk County, 24 km minimum straight line distance from the first site. A white and a normal-colored dove dusting together on the road were photographed from about 60 m, and watched through 10 × 50 binoculars. The white dove had some dark rectrices and a light reddish-brown color on its breast, possibly staining from graveling or dust bathing. The birds flew off together in close proximity after about 2 min on the road. In all three sightings, the two doves were similar in size and behavior, except for the "flap-glide" flight.

Numerous studies of Mourning Doves notwithstanding, we found no reports of white individuals. Ross (1963, *Cassinia* 47: 2) reported two museum specimens, "one a light tan and the other spotted," and stated "a pale mutant is described in the literature," without additional details. Gross (1965, *Bird-Banding* 36: 67) recorded some degree of albinism in five individuals of two unspecified species of North American Columbidae. We feel our sightings involved only one albino, so that it must have had a home range at least 12 km in radius. Published data on home range and local movements of Mourning Doves are limited.

Mourning Doves show reversible sexual imprinting, primarily in the initial stages of sexual maturity (Brosset 1971, *Z. Tierpsychol.* 29: 279). Plumage color is apparently important. Goforth and Baskett (1965, *J. Wildl. Mgmt.* 29: 543) found that alterations of appearance affected pair bonding in Mourning Doves only if females were marked. Assuming the white dove we saw was a male and that male preference predominates, we would expect it to mate with a normally colored female.

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