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BEHAVIORAL IMPLICATIONS OF THE DEFENSE OF A SHOVELER BROOD BY COMMON EIDERS

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Several hundred pairs of Common Eiders (*Somateria mollissima*) breed in the Mast River delta at La Pérouse Bay, 40 km east of Churchill, Manitoba. Nesting was clumped and the incident described below happened in the vicinity of one of the nesting aggregations. I made the following observations during the first week of July 1977, when eider young were hatching.

A female Northern Shoveler (*Anas clypeata*) and a brood of 12 young about five days old were flushed from the vegetation at the edge of an island in the river delta. The female began leading the brood across open water toward an island 100 m away. A Herring Gull (*Larus argentatus*) flying above me immediately flew to the brood, making several progressively lower passes over them. Each time the shoveler rose out of the water at the gull with wings spread and bill open, issuing alarm calls. Five female eiders from an unknown location flew directly to the brood and landed in a close circle around the shoveler and her young. The gull swooped twice more over the brood and was repelled by several of the eiders rising out of the water. At that point, the gull ceased attacking and the shoveler, brood and eiders continued unharassed to the next island. The shoveler persistently rushed at the eiders with the head low and neck extended. In spite of this, the eiders maintained a tight formation around the shoveler and her brood at least until 15 min later, when they were lost from sight.

Crèche behavior is well documented in Common Eiders (Gorman and Milne, Ornis Scand. 3:21, 1972; Munro and Bédard, Auk 94:759, 1977), although the selective advantage of the associated behaviors remains controversial. The response of the female eiders described above closely resembled the behavior of "visiting" females when eider crèches are threatened by larid predation (Munro and Bédard, J. Anim. Ecol. 46:799, 1977). Munro and Bédard (Auk 94:759, 1977) attributed such behavior to latent broodiness in unsuccessful nesting females although this is qualified by the statement that females who fail early in incubation will be indifferent toward ducklings. However, Gorman and Milne (Ornis. Scand. 3:21, 1972) maintained that only females who successfully hatch young associate with crèches. Although I did not know whether or not the five eiders had bred successfully, it seems unlikely that latent broodiness in unsuccessful females was sufficient to explain the observed behavior. Since the eiders responded to a shoveler, perhaps the broodiness observed was due to a hormonal state maintained at a high level after successful nesting.

In a crèching system, many females who are hatching young will lose their young to crèches controlled by more dominant females (Munro and Bédard, Auk 94:759, 1977). Subsequent mixing of broods may make it impossible for the displaced females to keep track of their young, resulting in selection for generalized defense of crèches. Strong selection pressure for such behavior would explain why occasionally the individuals defended may be unrelated or even of a different species, due to the presence of a stimulus similar to that which elicits the correct response.

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PHYSICAL DEFORMITIES IN A POPULATION OF WINTERING BLACKBIRDS

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Bill deformities are usually reported as isolated sightings of single individuals. The significance of such abnormalities has been discussed (Fox 1952) but almost nothing is known about their frequency. We have found no data indicating the proportion of abnormalities that might be expected in a blackbird population. Individuals with abnormal bills have been reported for the Yellow-headed Blackbird (*Xanthocephalus xanthocephalus*; Easterla and Todd 1971) and the Red-winged Blackbird (*Agelaius phoeniceus*; Morton 1963). We report here several additional cases of abnormalities, most of which were in Red-winged Blackbirds and Brown-headed Cowbirds (*Molothrus ater*).

Observations of birds were made during March 1976, between November 1976 and April 1977, and from November 1977 through April 1978 at six backyard feeders in an urban area of northwest Ft. Worth, Tarrant Co., Texas. All sightings were made at a distance of 8 m or less. Birds at these feeders were principally Red-winged Blackbirds, Brown-headed Cowbirds, Common Grackles (*Quiscalus quiscula*), Great-tailed Grackles (*Cassidix mexicanus*) and House Sparrows (*Passer domesticus*). Counts were made to allow estimation of total numbers observed. Bill length was estimated visually on abnormal birds, and drawings were done to show the kinds of deformities noted (Fig. 1).

When the first abnormal bird was seen approximately 100–150 Red-winged Blackbirds (99% males) were feeding daily. The total population observed was estimated at 500 to 1,000 birds based on the repeated return of birds with bill abnormalities. Thus the frequency of bill deformities was about 0.3 to 0.6% in the first time period and 0.5 to 1.0% in the second period.

Birds with deformities or disabilities may have re-