

YAHNER, R. H. AND T. E. MORRELL. 1991. Depredation of artificial avian nests in irrigated forests. *Wilson Bull.* 103:113–117.

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Potential predatory attack by Common Ravens on porcupines.—Reports of Common Ravens (*Corvus corax*) attacking mammals are scarce. Several authors have documented corvids attacking (mainly immature) mammals and birds (Ostbye 1969, Rowley, 1970, Maser 1975, Mallory 1977, Long and Killingley 1983, Lawrence 1986, Kilham 1989). I report here an incidence of aggressive behavior exhibited by a group of ravens toward an adult porcupine and its young. I am unaware of any previous mention of such an event in the literature.

At 19:00 h CST on 21 June 1992, I observed four ravens attacking an adult and a young porcupine (*Erethizon dorsatum*). Two ravens consistently provoked the adult porcupine through vocalization and tail-pulling. In response, the adult porcupine displayed the typical defense mechanism of flaring its quills and turning its rump toward the ravens (Nowak 1991); however, it also charged at the ravens. As one raven stood in front of the adult porcupine, another pulled the porcupine's tail from behind. The adult porcupine often turned toward the "tail-pulling" raven and charged, thereby exposing its rump and tail to another raven. Several times the ravens appeared to prevent the adult porcupine from entering a hazelnut (*Corylus americana*) thicket. The ravens also prevented the porcupine from climbing a nearby jack pine (*Pinus banksiana*) by pulling its tail. I also observed two additional ravens vocalizing loudly, hopping, and flapping their wings in nearby shrubs. After approximately 15 min, the ravens became aware of my presence and flew away. As I approached the scene, the adult porcupine climbed approximately 3 m up a jack pine tree. I could not see any wounds on its tail or body. I noticed a young porcupine huddled in a hazelnut clump 5 m from the adult. Upon closer examination of the young, I noticed that quills were missing from a circular patch approximately 9 cm in diameter on the lower third of its back. The last 3 cm of its tail was also missing quills and had two cuts, approximately 1 cm wide. The end of the tail was void of fur and skin so that muscle tissue and vertebrae were visible. The young porcupine appeared to be in shock, as it was immobile and shaking. Due to lack of quill development, time of year, and body size (total length was 23–25 cm), I estimate that the young porcupine was 2–4 weeks old (Shadle 1948).

I believe that had I not interrupted this event, the ravens would have killed at least the young porcupine. I base this judgment on the physical condition of the young porcupine after the attack and its apparent inability to defend itself.

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Sexual differences in bill shape and external measurements of Crested Auklets.—Most alcids are sexually monomorphic in plumage, ornaments, and body size and consequently cannot easily be sexed in the field (Bédard 1985). In a few species, external measurements can provide clues about the sex of a bird in the hand. For example, sex can be determined with 95% certainty from bill depth for 94% of individual Cassin's Auklets (*Ptychoramphus aleuticus*, Nelson 1981), for 70% of individual Ancient Murrelets (*Synthliboramphus antiquus*, Gaston 1992), and from an index combining bill depth and culmen length for 65% of individual Atlantic Puffins (*Fratercula arctica*, Corkhill 1972). Discriminant function analyses utilizing additional characters have not proved to be any better at identifying males and females (Nelson 1981, Gaston 1992). The only method for determining the sex of individual alcids by observation alone has been by their position during mounting or by observing marked individuals performing sex-limited displays (Jones 1992, Jones et al. 1989).

Bédard and Sealy (1984) reported sexual differences in external measurements of Crested Auklets (*Aethia cristatella*), but a sexing technique based on external appearance has not been published for any member of the genus *Aethia*. Nevertheless, observation of color-banded Crested Auklets at nesting colonies has led several researchers to tentatively identify the sex of some individuals by behavior. For example, individuals exhibiting an advertising display in which all feathers on the nape and hindneck are erected and the head is brought into a vertical position during a trumpeting vocal display have been assumed to be males (Flint and Golovkin 1990, Kharitonov 1980, Zubakin 1990, I. L. Jones, pers. obs.). These putative males are aggressive and attack other displaying individuals and other male-like birds that approach them. In contrast, female-like individuals do not exhibit the trumpeting display, are attracted to male-like individuals, are socially subordinate to these putative males, and rarely engage in aggressive behavior. Furthermore, courting pairs show stereotyped behavior in which the putative female adopts a crouched posture and nibbles at the bill of the putative male. These supposed males and females differ in bill-shape, as do specimens of known sex that have been examined (R. H. Day, pers. comm.; N. B. Kon-