five eggs were warm to the touch throughout the incubation period, an interval during which the box was checked at least every second day. On 18 May, the set of three eggs hatched (Fig. 1B). The set of two eggs never hatched and eventually disappeared on 31 May. Two of the three nestlings disappeared, one six days after hatching, and the other 13 days after hatching. The third fledged 18 days posthatch. A sixth chickadee egg was laid in the nest containing the lone nestling on 2 June, three days before the surviving nestling fledged. This egg disappeared when a House Wren (*Troglodytes aedon*) took over the box on 10 June.

Although Gowaty (Wilson Bull. 95:148–150, 1983) has found two Eastern Bluebirds (*Sialia sialis*) occupying the same nest box, apparently such was not the case here for chickadees. We believe that the same bird laid the aggregate of five eggs in two nest cups because the eggs were laid sequentially, one per day, over a five day period and because the same bird was caught incubating both sets of eggs. Also, except for the female's apparent mate, we never observed any other chickadee around the box.

As the nest box was located directly under the high-voltage line, it is problematical whether the electromagnetic field influenced the bird. During the same breeding season, two other chickadee nests under the powerline were successful (≥ one fledgling) and three nests failed. In a control area nearby, but beyond the powerline's electromagnetic field, no Carolina Chickadee nests were successful and two nests failed. However, only in the one "experimental" nest was the behavior of a female apparently aberrant.

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PAUL F. DOHERTY, JR., *Behavioral Ecology Research Group, Dept. of Zoology, The Ohio State Univ., Columbus, Ohio 43210;* AND JOHN M. CONDIT, *Museum of Biological Diversity, The Ohio State Univ., Columbus, Ohio 43210.* *Received 1 Oct. 1993, accepted 1 Dec. 1993.*

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When is the Common Raven Black?—Adults of the genus *Corvus* typically have plumage similar to that of juveniles, but Wilmore (1977), Coombs (1978) and Goodwin (1986) all state that juvenile Common Ravens (*C. corax*) have "duller" plumage than adults. Kerttu (1973) also describes juveniles as having dull plumage, with only second-year birds acquiring the shiny metallic sheen of adults. However, Witherby et al. (1943) state that in the juveniles the "tail, wings and wing-coverts are much as in the adult, but not so brightly glossed," and then mention that the gloss becomes "almost entirely worn off by the first autumn." Bent (1946) reports that the wings and the tail of juveniles are "much like those of the adult, clear lustrous black with greenish and purplish reflections" and, that at the end of the juvenile molt completed in late summer, "the winter plumage is practically adult, lustrous black." These three conflicting claims could lead to confusion in age determinations so critical in unravelling the social behavior of many corvids (for example, Henderson and Hart 1991).

To distinguish juvenile from adult ravens, Kerttu (1973) delineated three age classes based primarily on palate color. However, palate color is a plastic characteristic in ravens, highly dependent on status and possibly mate-bonding (Heinrich and Marzluff 1992), making it an unreliable indicator of age beyond the first summer. This leaves plumage characteristics as

a possible aging tool, but only if the three conflicting claims regarding juvenile plumage can be resolved.

In *Corvus* the first molt occurs in the summer or early fall and involves the replacement of dull-colored juvenal body plumage and wing coverts with glossy basic feathers. Juvenal remiges and rectrices, however, are not molted until the following summer (Bent 1946) and then only over a relatively long time so that flight ability is not compromised (Gwinner 1966).

To resolve the apparent discrepancies of whether juveniles have dull or shiny feathers, I photographed ravens of various known ages. Observations are based on ten birds hand-reared from nestlings, and 14 wild-captured birds maintained for at least one year in an outdoor aviary, and birds in the wild.

Like Bent (1946), I found that the juvenal body plumage of ravens is dull-colored and that the young lack lanceolate throat hackles. Nevertheless, although the juvenal body plumage is dull-colored, the remiges, retrices, and wing coverts of nestlings are sleek and shiny with bluish, green, and olive sheen, almost indistinguishable from those of adults. By late July the shiny adult-like contour feathers appear as well, including the long lanceolate throat feathers typical of the adults. In addition, the dark sheen of the remiges and retrices remains until at least six months post-fledging. Thus, by late summer or early fall, when the young disperse, they have virtually adult plumage. A few months later, however, they can again be distinguished from adults by their plumage. Photographs are available from VIREO.

All of the 14 wild-caught ravens that had brownish remiges and retrices in February of the first winter had glossy adult-like remiges and retrices the following February. I conclude that the shiny juvenal tail and wing feathers fade to a dull brown over the first winter and that birds aged one or more years remain dark and glossy.

After the first year, a complete prebasic molt occurs every summer, and the second and subsequent sets of wing and tail feathers thus show little or no loss of sheen throughout the year. In summary, these results are in partial agreement with all of the authors cited, but they are not in full agreement with any of them.

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BERND HEINRICH, *Dept. of Zoology, Univ. of Vermont, Burlington, Vermont, 05405.* *Received 1 Dec. 1993, accepted 15 Feb. 1994.*