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Comparisons between single-parent and normal Mourning Dove nestings during the postfledging period.—Reports on the success of single parent Mourning Dove (*Zenaida macroura*) nests observed in the field (Laub, M. S. thesis, Ohio State Univ., Columbus, Ohio, 1956; Haas, Proc. S.E. Assoc. Fish and Wildl. Agencies 34:426–429, 1980) and in captivity (Goforth, Auk 81:233, 1964) have been published previously. The field studies indicated that two squabs could be raised to fledging by a single parent if the squabs were 5–8 days old when the other parent was lost. However, for single-parent nest success to equal normal nest success squabs had to be 9–10 days old when deprived of one parent (Haas 1980). The sex of the parent removed in that study did not influence fledging success. Goforth (1964) reported that a single captive male parent successfully incubated (starting 4 days postlaying) a normal clutch of two eggs and then raised the two squabs until they fledged. However, no studies have reported interactions between single parents and their offspring during the postfledging (PF) interval. Herein we describe such interactions between single female parents and fledgling Mourning Doves.

Behavioral interactions among adult Mourning Doves, 35 radio-tagged nestling/fledglings (12–30 days old), and the single wing-tagged nestmates of 34 of these, were observed during a 2-year study in east-central Alabama (Hitchcock and Mirarchi, J. Wildl. Manage. 48:99–108, 1984). Nestling/fledglings were observed three times daily, from 15 min before to 2 h after sunrise, 12:00–14:00, and 2 h before to 15 min after sunset. Data from two single-parent nests were compared to those from 33 normal two-parent nests. The male parent disappeared between 12 and 15 days posthatching (PH) at one single-parent nest, and before 12 days PH at the other. The following variables were compared: relative number of parental feedings (RNPF = the total number of nestling/fledgling feedings by, or feeding associations with, parents at each age divided by the total length of observation period at each age); net duration of parental feedings (NDPF = length of time nestlings/fledglings were fed at each age divided by number of times nestlings/fledglings were fed at each age); relative duration of fledgling self-feeding (RDFSF = the total time nestlings/fledglings were observed feeding themselves at each age divided by the length of time nestlings/fledglings were actually observed at each age); and relative duration of parental brooding (RDPB = the total time nestlings/fledglings were brooded by parents at each age divided by the length of time nestlings/fledglings were actually observed at each age). The Wilcoxon 2-sample rank sum test was used to examine the significance of any differences between treatment means ($\bar{x} \pm$ SE [N]) because of the lack of normal distributions.

Treatment values for RNPF (N/min) and NDPF (min/N) were summed across selected nestling/fledgling age classes (12, 15–21 days PH) because parent-nestling/fledgling feeding interactions were most critical at that time. Single female parents fed fledglings less often (RNPF, 0.9 ± 0.1 [84], $P = 0.02$) and for shorter periods of time (NDPF, 0.7 ± 0.1 [62], $P = 0.03$) than did those parents still mated (1.2 ± 0.2 [606] and 1.0 ± 0.03 [398], respectively). Although parental feeding rates were reduced, no obvious morphological or behavioral anomalies were detected in the fledglings by the end of the critical dependency period (20–21 days PH). Parent-fledgling feeding interactions normally end at 16 days PH for female parents and between 27 and 30 days PH for male parents (Hitchcock and Mirarchi 1984). In the present study, one single female parent was observed feeding fledglings through 27 days PH and the other through 31 days PH. This extension of parental care probably reflected a reduction in the female's hormonal progression during the reproductive cycle caused by the absence of a mate and/or the time required for establishing a new pair bond and subsequent nest initiation.

Treatment values for RDFSF (min) were summed across 17–21 days PH, and across 24

and 27 days PH because the development of self-feeding techniques and the transition to independence from parental care occurs during these two periods, respectively. There were no differences ($P = 0.78$) in RDFSF between fledglings (17–21 days old) from one and two parent nests (5.3 ± 1.9 [53] and 5.3 ± 0.9 [343], respectively). Consequently, no slowdown in the development of self-feeding behavior was indicated for fledglings from single-parent nests. There also were no differences ($P = 0.74$) in RDFSF between one and two parent nests (20.2 ± 10.2 [10] and 19.0 ± 3.0 [90], respectively) for fledglings 24–27 days old. Apparently the feeding rates of the single female parents were not reduced sufficiently to cause fledglings to increase independent feeding behavior during the transition period from parental to self-feeding which is the usual fledgling response to reduced feeding rates in other bird species (Davies, Behaviour 59:280–295, 1976).

Treatment values for RDPB (N/min) were compared at 12 days PH because all biologically important brooding observed in this study occurred then (Hitchcock and Mirarchi 1984). No differences ($P = 0.22$) in RDPB were observed between single parent (52.7 ± 14.8 [6]) and normal nests (69.6 ± 4.7 [54]). One single parent was observed brooding during the entire noon observation period (12:00–14:00) accounting for the lack of significant difference in brooding between treatments. Female Mourning Doves normally do not brood at this time (Taylor, M.S. thesis, N.C. State Univ., Raleigh, North Carolina, 1941; Harris et al., Am. Midl. Nat. 69:150–172, 1963) but appear capable of doing so when their mates are lost. This apparent ability to change incubation habits also has been reported in Ringed Turtle-Doves (*Streptopelia risoria*) (Wallman et al., J. Comp. Physiol. Psych. 93:481–492, 1979). This flexibility in brooding behavior is critical to Mourning Dove nestling survival under adverse weather conditions before homeothermy is achieved. Six fledglings (ages 14 days and younger), which had prematurely fallen from their nest during this and a subsequent study, were observed to die of exposure without consistent parental brooding (R. R. Hitchcock and J. B. Grand, unpubl.).

These observations demonstrate that wild, single-parent female Mourning Doves can care for their young PF by feeding and brooding them at times when normal female parent-fledgling interactions do not occur. However, the reduced number and duration of single-parent female feedings during the critical part of the fledgling dependency period indicates the possibility of slower development and increased mortality for single-parent fledglings. More extensive orphaning experiments should be combined with radiotelemetry studies during the fledgling dependency period to determine if differential rates of growth, development, and mortality are related to the sex of the parent removed and fledgling age class.

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Nest-sites of Turkey Vultures in buildings in southeastern Illinois.—Turkey Vultures (*Cathartes aura*) are known to nest in a variety of places: on the ground in thickets, under overhanging rocks or in caves, on exposed faces of cliffs, and in hollow trees, logs, and stumps (Jackson, J. A., pp. 247–270 *in* Vulture Biology and Management, S. Wilbur and J. A. Jackson, eds., Univ. Calif. Press, Los Angeles, California 1983), a pig-sty (Jackson, Bird-Lore 28:175–180, 1903), a tumbled-down house (Sprunt and Chamberlain, South Carolina