

At Cedar Creek, Black-capped Chickadees have an incubation period of 12–13 days, and F1's eggs should have been laid on 2–7 or 3–8 May. Because M2 was not with F1 on 5 May, he could not have fathered at least the first 4 eggs, and probably fathered none of them. M2 fed the nestlings and fledglings and behaved in a manner typical of a male parent. No second brood was attempted. This is the only case of brood adoption in Black-capped Chickadees I have seen in 325 nestings.

*Discussion.*—M2 clearly helped raise M1's offspring. From the available evidence, M2 could conceivably have fathered one or two of the brood. If so, he would be expected to increase his reproductive output by caring for the brood, because survival in chickadee broods at Cedar Creek is apparently lower for broods cared for by only one parent. It is highly unlikely, however, that M2 fathered any of F1's offspring before M1 disappeared. Broods of mixed paternity recently have been reported in some avian species (e.g., Mumme et al., *Auk* 102:305–312, 1985; Gavin and Bollinger, *Auk* 102:550–555, 1985). Mixed paternity in Black-capped Chickadee broods at Cedar Creek is probably rare or nonexistent as (1) males accompany their mates during the laying period, (2) many pairs are so isolated that the females would have almost no access to males other than their mates, and (3) I have never witnessed attempted extrapair courtship or copulation.

The most probable situation, based on the available evidence, is that M2 fathered none of the nestlings. M2 could have been "primed" to care for nestlings because he and F2 could conceivably have had a nest with eggs that would have hatched about 24 May. Even if M2 fathered none of F1's nestlings, he still could have increased his expected lifetime reproduction by caring for F1's offspring. Male chickadees at Cedar Creek that fledge broods survive from one breeding season to the next at least as well as males that do not fledge broods (64% of 217 vs 51% of 152). Parental care by males apparently does not entail a survival penalty. By pairing with F1 and caring for her offspring, M2 probably increased his chance of mating with her in future years. Eighty-five percent of the chickadee pairs at Cedar Creek in one year breed together the following year, provided both birds survive. Males that retain the same mate from one breeding season to the next fledge, on average, 1.06 more young than do males that acquire a new first year mate. This is due to the greater clutch size of older females compared to first year females ( $\bar{x} = 6.66$ ,  $N = 88$  clutches, vs  $\bar{x} = 6.01$ ,  $N = 134$  clutches), and to decreased predation on broods of older females (24% vs 33%). As in the case reported by Odum, brood adoption by the male I observed may actually have increased his expected lifetime reproduction.—JAMES L. HOWITZ, *Dept. Biology, Univ. Wisconsin-La Crosse, La Crosse, Wisconsin 54601. Received 17 Aug. 1985, accepted 2 Nov. 1985.*

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**Brown Thrashers respond to calls of Northern Mockingbird nestlings.**—Adult birds occasionally mistakenly direct attention to young of other species. Most often, this situation occurs when an adult feeds nestlings of another species (reviewed in Shy 1982). An alternative situation occurs when adults become confused and respond to distress calls (e.g., Norris and Stamm 1965) of juvenile birds of a different species. Stefanski and Falls (1972) showed experimentally that adults react to distress calls of juveniles of closely related species. Here I report a field observation of adults responding to distress calls of nestlings of a closely related species.

To capture adult Northern Mockingbirds (*Mimus polyglottos*) on the University of Arkansas, Fayetteville, campus, I place 5–7-day-old nestlings in a circular bal-chatri trap. Females usually land on the trap and "wing-flash" (e.g., Hailman 1960) while looking down at the noisy nestlings, and become tangled in the monofilament nooses on the outside of

the trap. Males, however, rarely approach the trap, and only observe nestlings from some distance.

On 25 June 1983, I color banded three 5–7-day-old mockingbird nestlings (weights = 34.5–35.5 g) and placed them in a trap beneath the nest shrub. Within seconds, a pair of Brown Thrashers (*Toxostoma rufum*) that had been foraging together about 20–30 m from the trap, and whose breeding status I did not know, flew to the noisy nestlings. One bird of unknown sex stood at the side of the trap and began wing-flashing while facing the nestlings inside. The other approached to about 3 m. After about 30 sec, the adult mockingbirds arrived near the trap and drove off the thrashers. The female mockingbird hopped on the trap and wing-flashed, entangling herself in the nooses.

Brown Thrashers are noted for their vigorous defense of nestlings that are giving distress calls (Bent 1948). Brown Thrashers and Northern Mockingbirds are closely related taxonomically (Sibley and Ahlquist 1984), so it seems reasonable to assume that nestling distress calls of these two species are similar, although, to my knowledge, this remains untested. Similarities in nestling distress calls between the two species would explain why the thrashers responded so quickly. I have not observed any other instances of other species responding to mockingbird nestling distress calls.

The calls of mockingbird nestlings elicited behavior in the thrashers similar to those of the adult mockingbirds, confirming that nestling distress calls are capable of stimulating stereotypic behavior patterns in closely related species (Stefanski and Falls 1972). Particularly intriguing is the wing-flashing behavior of the thrasher. Brown Thrashers have rarely been reported to wing-flash (Hailman 1960), whereas mockingbirds wing-flash in a variety of different situations (e.g., Sutton 1946, Hailman 1960, Selander and Hunter 1960, Taylor 1976).

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