

0128, 0134, 0135, previously noted feeding the fledglings; and two previously unbanded adults now designated 0136 and 0142.

Explanations of supernumerary birds in the vicinity of a nest commonly fall into three categories. Siblings, often from earlier broods or previous years, have been observed feeding young from subsequent broods. Another explanation is that adults that have lost their broods are stimulated to feed gaping young. A third possibility is that adults that are unable to establish breeding territories may comprise a "floater" population in the vicinity of breeding conspecifics. These birds are likewise stimulated to feed gaping young.

The genetic relationships of the birds I observed is unknown except in the case of the obviously unrelated Dusky Flycatcher. As all of the captured birds were adults, it is unlikely that they were siblings or fledglings.

Data collected over two years at two sites in the area suggest that either or both of the remaining explanations may apply. First, not all adults present bred. Some males held territories and never acquired a mate, and adult flycatchers of unknown sex were often observed in the vicinity, suggesting a substantial "floater" population. My observation of a female moving into a territory and nesting late in the season after another female had lost her nest is further evidence of a floater population. At my two sites, only three of eight nests (38%) successfully fledged young; therefore, late in the breeding season, the floater population may include unsuccessful nesters. This is further evidenced by the brood patch of flycatcher 0135.

Acknowledgments.—I thank B. Valentine for his input as co-worker on the project and criticism of the manuscript. L. Benjamin, S. Boland, and J. Halstead aided with field work. The Kings River Conservation District funded the project.—MICHAEL D. STAFFORD, *Kings River Conservation District, 4886 E. Jensen Ave., Fresno, California 93725. Received 19 Feb. 1985, accepted 23 Sept. 1985.*

Wilson Bull., 98(2), 1986, pp. 312–313

Brood adoption by a male Black-capped Chickadee.—In species such as the Black-capped Chickadee (*Parus atricapillus*), where males provide extensive parental care, mechanisms that decrease the likelihood of a male raising unrelated young should be selected for. A male that helps raise unrelated young may, however, actually be increasing his expected lifetime reproduction. Odum (Auk 58:314–333, 1941) reported a case where a male Black-capped Chickadee that lost his mate helped raise the nestlings and fledglings of a female that had lost her mate. These two birds then raised a second brood, which he fathered. In this instance, caring for a brood fathered by another male enabled the male to obtain a mate and to father a brood that season. I report here another case in which a male Black-capped Chickadee "adopted" nestlings that he did not father, and increased his own expected reproductive output.

Observations were made during the ninth year of a population study of color-banded Black-capped Chickadees at the Cedar Creek Natural History Area in northern Anoka County, Minnesota. In early April 1985 one chickadee flock consisted of four males and two females. On 21 April, 1985 a third year male, M1, was paired with a first year female, F1, and a second year male, M2, was unmated. On 25 and 28 April M2 was paired with an unbanded female, F2, that almost certainly had arrived on the study area that week. On 5 May M1 and F1 were together and F1 was soliciting food from him, indicating that she had probably begun laying a clutch. M2 and F2 were also together, and F2 was trapped and color banded. On 25 May I found a nest with six 4-day-old nestlings tended by M2 and F1. M1 was not seen again and almost certainly had died. F2 also was not seen again and probably also had died.

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.*

Wilson Bull., 98(2), 1986, pp. 313–314

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