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### ASH-THROATED FLYCATCHERS (*MYIARCHUS CINERASCENS*) RAISE MOUNTAIN BLUEBIRD (*SIALIA CURRUCOIDES*) YOUNG<sup>1</sup>

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Ash-throated Flycatchers (*Myiarchus cinerascens*) and Mountain Bluebirds (*Sialia currucoides*) are secondary cavity-nesters that are sympatric in juniper woodlands of northern Nevada. While conducting a study of Mountain Bluebird reproductive strategies during the 1988-1989 breeding seasons, we observed two instances of Ash-throated Flycatchers raising bluebird nestlings in addition to their own young.

Our study area is located in partially burned juniper woodlands north of Reno, Nevada, and contains 68 nestboxes. These boxes have been used since 1985 by Mountain Bluebirds and are also used occasionally by Ash-throated Flycatchers.

In the first incident, a nestbox which contained two bluebird eggs on 30 May 1989 was taken over by Ash-throated Flycatchers. The adult bluebirds were unbanded, so we are not sure what happened to them after losing the nestbox; they did not use the nestbox again that season. The female flycatcher did little additional nestbuilding (flycatchers in this area use clumps of fur for nest material whereas bluebirds mainly use strips of bark), but laid her clutch of five eggs alongside the two bluebird eggs by 6 June. She incubated the mixed clutch, and all seven eggs hatched on approximately 19 June. In the four times we checked the nest between hatching and 3 July, the rate of nestling development appeared to be equal for both species. Only flycatchers were seen feeding the young. All nestlings

presumably fledged on 11 July, except for one almost completely feathered bluebird nestling found mummified in the nestbox on 12 July (cause of death unknown). Despite repeated searches, we did not see the young after fledging.

In the second incident, an Ash-throated Flycatcher laid two eggs by 22 June 1989 in a nestbox in which a bluebird pair had previously fledged a clutch of four young. On 5 July there was one Mountain Bluebird egg in the nest, along with two additional Ash-throated Flycatcher eggs. The flycatcher incubated all five eggs. On 12 July, we found one bluebird and two flycatcher young along with a dead flycatcher nestling and an unhatched egg. The young were approximately two days old. Again, only flycatchers were seen caring for the young. On 15 July (five days after hatching), the nest contained only two dead young (one flycatcher and one bluebird). The other nestling and the unhatched egg were missing. The adults were not in the area and were not seen again. Since predation is a major cause of bluebird egg and nestling mortality in our study area (unpubl. data), we assume this was the cause of nest failure, though nest abandonment cannot be completely ruled out.

To our knowledge, this is the first report of Ash-throated Flycatchers raising the young of any other species. These two cases are qualitatively different, and we consider two possible explanations for them: 1. competition for suitable nest sites, and 2. facultative brood parasitism.

*Nest site competition.* Two lines of evidence suggest that Mountain Bluebirds and Ash-throated Flycatchers compete for suitable nest sites in this study area. First, we know of four takeovers of bluebird nests by flycatchers since 1985 (two in 1986, one in 1987, one in 1989). There have been no reciprocal takeovers by bluebirds, presumably because flycatchers are much

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larger. On one of these occasions, a flycatcher laid eggs directly on top of a completed bluebird clutch (The bluebird eggs did not hatch in this case. This is probably because bluebird incubation had already begun and was arrested while the flycatcher laid her clutch). Second, pairs of bluebirds and flycatchers nested in boxes less than 0.5 m apart on two occasions, even though Ash-throated Flycatchers are typically quite aggressive (Bent 1942; Austin and Russell 1972; David Bontrager, pers. comm.). Nest site competition is a likely explanation for the first incident described above.

It is possible that the second incident was also an instance of nest site competition. The bluebirds may have laid a single egg in a failed attempt to reclaim the nestbox the flycatchers had usurped. We feel there may be another explanation for this incident, however, since there were unused nestboxes in the area at that time, and we have observed only two instances of interspecific aggression in our population of Mountain Bluebirds (but see Power 1966, Gowaty 1981, Gowaty and Wagner 1988). One involved an Ash-throated Flycatcher, the other a Plain Titmouse (*Parus inornatus*).

*Facultative brood parasitism.* Gowaty and Karlin (1984) documented conspecific brood parasitism in Eastern Bluebirds (*Sialia sialis*) and, based upon two years of study at our site, we strongly suspect its occurrence in Mountain Bluebirds (unpubl. data). The only brood parasite occurring in northern Nevada, the Brown-headed Cowbird (*Molothrus ater*), is not known to parasitize Ash-throated Flycatchers (Friedman and Kiff 1985). These flycatchers, like many other species (Rothstein 1975), may not have evolved defense mechanisms against brood parasitism. Therefore, facultative interspecific brood parasitism by bluebirds on flycatcher hosts is a possible explanation for the second incident.

More data are needed to better evaluate the prevalence of interspecies brood care and to more clearly define the strategies involved in its occurrence.

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