Bluebirds feed the young of other species on occasion (Batts, 1958; Carr and Goin, 1965), and two adult males have been reported feeding at the same nest on three occasions (Wetherbee, 1933; Laskey, 1947; Pinkowski, 1975). Pinkowski (1974b) reported that juvenile bluebirds introduced into the territories of pairs feeding young out of the nest may be accepted and fed by the adults. The behavior of M1 toward the young of F1, however, is unique among bluebirds because M3 did not feed the young after M1 began caring for them, and the young of M3-F1 combined with those of M1-F2 and the two broods remained together thereafter.

Kin selection would normally favor altruistic behavior only among close relatives (Hamilton, 1964). Woolfenden (1975) hypothesized that Florida Scrub Jay (*Aphelocoma c. coerulescens*) helpers may profit as much or more from the existence of younger members of the species, however, and he related this to benefits derived from an increase in group size and a scarcity of breeding territories. Bluebirds also have strict territorial requirements and exist in large groups outside of the breeding period, and a similar line of reasoning may explain observations of apparently altruistic behavior in this species.

I am especially grateful to a number of persons who made these observations possible. James Stevens helped in the tracking operations, Roger Bajorek kept me continually posted on bluebird sightings by the staff at Stony Creek Park, and my wife, Phyllis, was constantly in the field as my assistant.

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Interactions Between Nesting Birds and Carpenter Ants.—On 24 May 1974, we found an abnormally low Starling (*Sturnus vulgaris*) nest in Blacksburg, Montgomery County, Virginia. The entrance to the nest was five cm above ground level in the base of a black locust (*Robinia pseudoacacia*). The bottom of the nest cavity extended 30 cm below ground level making visual observation of the young impossible. When the nest was discovered the adult Starlings were actively feeding nestlings. Upon returning to feed the young, the adults initially landed about 15 m up in the tree, flew down within 2 m of the nest entrance, then ran on the ground into the nest cavity. While examing the nest on 24 May, we noticed significant activity of carpenter ants (*Camponotus* sp.) at the nest entrance. The nestlings gave loud atypical vocalizations continually, even in the absence of parental or human stimulation. On 25 May the adults were not seen around the nest and no sounds could be heard in the nest cavity. On 27 May

we removed three dead nestling Starlings, all about one week old. The eyes, parts of the bill and skull on all the young had been eaten away by ants. The nestlings had neither been removed from the nest nor did they have any visible injuries that might indicate a vertebrate predator. Although carpenter ants may have caused the demise of the nestlings, the possiblity exists that the parents abandoned them or one or both parents died. Starvation in these latter instances could explain the abnormal begging behavior of the nestlings on 24 May. The ants might have started eating the nestlings after they were dead.

On 24 June 1974, we observed another instance of possible ant predation on nestlings. That morning the nest of an Eastern Phoebe (*Sayornis phoebe*) near Ironto, Virginia had been knocked down by some children from its original position under a bridge. With the nestlings still intact, the nest had been placed by the children in the crotch of a tree approximately one m above the ground. In the afternoon, when we returned to examine the nest, the young were dead and being comsumed by the ants. We do not know if the nestlings were alive or dead when the ants found them. The short length of time, five hours, from when we last saw the young alive until when they were dead and being eaten, suggests the possibility that they might have been alive when the ants found them. However, exposure to the direct sun and a lack of parental care could also explain the nestlings' quick death.

A third observation during June and July 1974 of nestling Common Flickers (*Colaptes auratus*) provided additional evidence. We had been observing the young flickers for several days noting that they were fully feathered and nearly ready to fledge. No evidence of ant activity was observed around or in the nest cavity which was two m above the ground in an American elm (*Ulmus americana*). On the morning of 4 July 1974, two nestling flickers fledged from the nest cavity. That afternoon we cut down the nest tree and cut out the section containing the cavity nest. The section was then cut longitudinally in half to reveal the inside dimensions of the cavity. The entire piece of wood was riddled with carpenter ant tunnels and chambers, and was teeming with hundreds of disturbed ants. Apparently, the ants and the nestling Common Flickers had been co-existing without any detrimental effects to the birds.

Ants are a major food item in a Common Flicker's diet. The adults might have eaten some ants that were disturbed during the excavation of the cavity. The nestlings may have also been able to eat ants that ventured inside the nest cavity. But, when first hatched, the young flickers were certainly unable to defend themselves against any foraging ants in the absence of the adult flickers. The ants apparently did not consider the living nestling flickers to be an acceptable food item. Whether this would include all nestling birds or just woodpeckers is unknown to us. Since woodpeckers prey on ants, speculation might suggest that carpenter ants are able to detect the woodpeckers and use a chemotaxis to avoid them. Kilham (*Wilson Bull.*, **83:** 159-179, 1971) suspected that disturbances by carpenter ants caused a pair of Yellow-bellied Sapsuckers (*Sphyrapicus varius*) to desert their nest cavity.

Carpenter ants excavate the tunnels and chambers of their nests in the rotten heartwood of trees, often extending the excavations into undecayed portions of the tree (Sanders, *Can. Entomol.*, **96:** 894-909, 1964). This places the ant colonies relatively close to many tree-nesting birds, especially woodpeckers which also require trees with rotten heartwood in which they excavate their nest cavities (Conner, et al., *J. Wildl. Manage.*, **39:** 144-150, 1975). The natural food of carpenter ants consists mostly of live and dead insects, honey dew, sap, and juices of well ripened fruit (Baker, Eastern Forest Insects, U.S.D.A., Misc. Pub. no. 1175, 642 p., 1972). Foods taken from households include sweets, and raw and cooked meat.

We have only circumstantial evidence suggesting the possibility that carpenter ants attack and kill nestlings. Our observations of the Common Flicker nest cavity, however, provide one instance of direct evidence that carpenter ants do not prey on nestlings even if an excellent opportunity is provided.—RICHARD N. CONNER, *Department of Biology, Viginia Polytechnic Institute and State University, Blacksburg, Virginia 24061, and* VINCENT J. LUCID, *Equitable Environmental Health, Inc., 333 Crossways Park Drive, Woodbury, New York 11797.* Received 12 November 1975, accepted 9 February 1976.