

Great Crested Flycatcher observed copulating with an immature Eastern Bluebird.—On 11 June 1970, I was observing breeding birds in a second-growth cove hardwood forest along Abram's Creek in Cade's Cove, Great Smoky Mountains National Park, Blount County, Tennessee. The calls of a Great Crested Flycatcher (*Myiarchus crinitus*) attracted my attention to a small deciduous grove bounded on one side by a grazed pasture. Within the stand the flycatcher was calling repeatedly. Several small passerines were moving through the trees including a family of Eastern Bluebirds (*Sialia sialis*) consisting of the two adults and three grown young-of-the-year in the spot-breasted juvenal plumage. The family was moving slowly with the parents searching ahead for food and returning to feed the begging fledglings that followed. As the bluebirds moved across a small open area beneath the canopy a Great Crested Flycatcher flew down from a treetop perch and hovered facing one of the juveniles for a few seconds. The young bluebird assumed the begging-feeding posture with fluttering wings whereupon the flycatcher moved from his hovering position in front of the young bird to its back. The flycatcher then proceeded to copulate with the juvenile bluebird. This the flycatcher accomplished by standing on the bluebird's back while keeping balanced with fluttering wings. This attempt lasted one to three seconds whereupon the flycatcher returned to a higher perch and resumed calling. The young bluebird remained almost motionless for approximately a minute before flying to rejoin the family group.—FRED J. ALSOP III, *Department of Zoology and Etymology, University of Tennessee, Knoxville, 37916 11 September 1970.*

Adaptive behavior of tits which have lost one eye.—I have systematically observed the behavior of two tits each of which had lost one eye, a Carolina Chickadee (*Parus carolinensis*) and a Tufted Titmouse (*P. bicolor*). The case histories are as follows.

On 6 July 1969, when I brought food to a feeder at my house in southern Maryland, a Carolina Chickadee with dishevelled feathers attracted my attention. It appeared that the left eye with a portion of skin and feathers was missing. The wound extended from the left ear to the bill, exposing the bone of the upper mandible. However, the bird was able to eat. It alighted on my hand to take a crumb of walnut. (All the tits that live on my wooded tract had been trained to alight on my hand.) As if aware of his defect, the male chickadee devoted much time to examining the surrounding area with his only eye. The head was usually moving from one side to the other, but more often to the left so that, in forward motion, the right eye could control the front of the bird. Sometimes the chickadee even performed several counterclockwise spins, especially when taking part in the lively chatter and sportive exercises of the flock of tits.

The right eye has become more extroverted due to its intensified use. This adaptive modification, combined with rapid swings of head and body, has evidently led to an increase in the efficiency of the remaining eye. In addition, the physical defect has brought about an extremely swift reaction to unusual sounds, notably to the opening of the camera shutter which is accompanied by a click. To arrest the bird in the lens field, the clicking sound had to be eliminated.

The Tufted Titmouse (Fig. 1) lost its eye sometime in December 1969. It had no other injury, and the defect was brought to my attention by a peculiar behavior of the bird. In contrast to the one-eyed chickadee, the Tufted Titmouse avoided superfluous motions. After each change of perch, the bird sat motionless for a while. The flight of the titmouse was slowed down and almost noiseless as the bird kept its feathers fluffed when moving around.