

Unusual behavior of a Cowbird and Scarlet Tanager at a Red-eyed Vireo nest.—During the summer of 1947, while studying a nest of the Scarlet Tanager (*Piranga olivacea*) in the midst of an oak-hickory woods on the Edwin S. George Reserve, Pinckney, Michigan, I was able to observe also, about 15 feet from my ground-blind, a nest of the Red-eyed Vireo (*Vireo olivaceus*) which was placed on a slender white oak sapling branch 5 feet above the ground, about 45 feet from the Scarlet Tanager nest, and 3 feet from a woods road.

Dr. George M. Sutton found the nest June 24, at which time it contained four Vireo eggs and one Cowbird egg. On June 27 the nest contained four Vireo and two Cowbird eggs. At 4:55 a.m., June 28, hearing a disturbance, I observed a female Cowbird (*Molothrus ater*) on the ground 10 feet from the Vireo nest and about 6 feet from my blind. A Vireo (possibly two, but my field of vision was limited) was scolding and flying at the Cowbird and striking her with its wings. Then a male Tanager flew down from a near-by sapling and dove at the Cowbird's head. The Cowbird flew out of my vision; the Vireo(s) and Tanager withdrew.

Approximately 40 seconds later, I again heard a disturbance and saw a female Cowbird fly to a bush 3 to 5 feet from the Vireo nest, then directly to the nest branch, landing approximately 10 inches from the nest. It was attacked by a Vireo, which made short flights 3 to 5 feet above the Cowbird, diving at the Cowbird and appearing to strike it with the wings, for a loud slapping noise was heard at the end of each dive. The Cowbird crouched low and, head and neck outstretched, advanced, walking or hopping toward the nest, which was occupied by a Vireo. The Cowbird reached the nest and made a distinct pecking motion at the nest as the Vireo left. The action was so rapid that I could not see whether the Vireo flew as the Cowbird pecked or as a result of the peck. The Cowbird was facing away from me, and I could not see whether or not she took anything from the nest. She settled on, or over, the nest and was immediately attacked by the displaced Vireo. Both Vireos, continually scolding, dove and struck at the Cowbird with their wings. Meanwhile a male Tanager lit on the nest branch, 2 to 3 feet from the nest; with tail high and wings held well below the tail, he advanced on the Cowbird, giving the high *chip* alarm note. He hopped to the nest, head outstretched, and gave the Cowbird one distinct and apparently vicious peck, walked or hopped back a foot or two, still looking at the Cowbird and scolding, then flew to a near-by sapling. The Vireos continued their attack during the Tanager's advance. The Cowbird left the nest 2 to 6 seconds after the Tanager's peck, having been on, or over, the nest for approximately 30 seconds. After this occurrence, the nest contained six eggs, but unfortunately I failed to make sure that they were the same eggs (four Vireo and two Cowbird) as on June 27.

A Cowbird egg hatched June 30 between 11:30 a.m. and 2:26 p.m.; the nest then contained the one Cowbird, two Vireo eggs, and one Cowbird egg. On July 2, between 7:35 and 11:00 a.m., a Vireo egg hatched; the nest then contained one Cowbird and one Vireo nestling and two Cowbird eggs. At 11:00 a.m., July 2, A. E. Staebler and I found a Vireo egg on the ground directly below the nest. The egg had a hole in the larger end and a distinct V-shaped incision in the side, the apex of the V directed toward the smaller end of the egg. The egg (examined by Dr. Sutton) proved to be in an advanced stage of incubation.

Later history of the nest may be of interest: On July 3, it contained one Cowbird and one Vireo nestling and two Cowbird eggs; on July 7 and 8, the two nestlings and one Cowbird egg; on July 10, only the two nestlings. On July 10, the Cowbird (aged 10 days) was able to fly a few feet; the Vireo nestling (aged 8 days) was quiet, seemed weak, and kept its eyes closed most of the time. On July 14, the nest was empty, and I could not find either of the young, but the adult Vireos (one of which I had banded) protested my presence near the nest by scolding close overhead.—KENNETH WADE PRESCOTT, *University of Michigan, Ann Arbor.*