

When I checked the trap the morning of 30 June, two eggs were about one foot behind the trap and a third was in the netting. I set up a canvas blind 12 feet (4 m) from the nest and waited in it. After two hours the hen returned to the nest (about 1300 hours) via a series of short flights from the nearby ditch. Immediately she pushed the eggs already behind the trap into the shade with the dorsal surface of her bill. She then pulled the egg in the netting toward herself with the ventral surface of her bill. As soon as it was through the net she wrapped her head and neck over, around, and under it so that it was wedged between the undersurface of her bill and her breast much in the manner described by Lorenz and Tinbergen ("Taxis und Instinkthandlung in der Eirollbewegung der Graugans," *I. Z. Tierpsychol.*, 2: 1-29, 1938) for the Greylag Goose (*Anser anser*). She then walked backwards for about a foot and left the egg. Immediately she tried to reach the remaining ones. She poked through the net, neck outstretched, apparently trying to get her bill in front of the eggs. Several times I thought she had reached far enough to pull an egg, but she never did so. Although there were opened areas to the sides of the trap, the hen never went around and under the trap to reach her eggs. As time went on, she became more frantic in her attempts to reach them. She charged the net, thrusting her weight forward, then backing up and charging through another opening. This went on for about half an hour at which time she became aware of my presence and hid in the phragmites near the trap. For three hours we watched each other. Finally I left the blind and flushed the hen. I returned in the evening to find the eggs unmoved. Soon after dark I left the blind and picked up the eggs. I thought the hen had deserted the nest, but when I started to walk off she flew from about 10 feet away. I replaced the eggs and waited in the blind another hour but the hen didn't return. I brought the eggs to the hatchery and removed both the trap and blind.

In the course of the summer I set traps over the nests of 10 other Pintails and 15 Gadwalls (*Anas strepera*), none of which moved their eggs. Of the three nests where egg-moving occurred, only the area around the second Pintail nest was cleared in order to set the trap. Both Lyle Sowls and Charles Dane have nest-trapped large numbers of ducks at Delta and they reported (pers. letters) no instances of egg-moving by incubating hens. Why only the three above-mentioned hens moved their eggs, I don't know. Perhaps the trap nets over their nests dangled a little too low, perhaps the base of the trap was too near the nest, and perhaps there is still another answer yet unknown.

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**Swaying display of a female Bell's Vireo.**—Among vireos, metronome-like swaying, an uncommon display, has been recorded with certainty only for males. Swaying is known in an appeasement context in the Red-eyed Vireo (*Vireo olivaceus*; V. Nolan, *Condor*, 64: 273-276, 1962) and in certain courtship situations in Bell's Vireo (*V. bellii*; J. C. Barlow, *Univ. of Kansas Pubs., Mus. Nat. Hist.*, 12: 241-296, 1962). On 18 May 1961, on the grounds of the Laboratory of Aquatic Biology of The University of Kansas, Lawrence, Kansas, where I was experimenting in the field with a dummy of Bell's Vireo (a mounted bird), I saw a female Bell's Vireo perform a swaying display as part of an aggressive response. This is the only instance of a female swaying that I have recorded in some 550 hours of field work on this species.

In the field the dummy was placed within one foot (30.5 cm) of a nest, suspended from the terminal fork of a branch of a sapling American elm (*Ulmus americana*). The nest, three feet (1 meter) up, was in the third day of construction, the bag having been built and the lining of this structure and the smoothing and polishing of its exterior being in progress. Shortly after I placed the dummy, the male sang five feet from the nest. He remained visible throughout the activities described below. The female approached the nest and landed a few inches from the dummy. She then displayed in a manner that resembled an abbreviated precopulatory display of the male. Her tail was broadly fanned and somewhat depressed vertically, her thoracic feathers were ruffled, and she swayed, but through an arc much smaller than that described by a male in epigamic display. Her only vocalization was a call note, *chee*. The entire performance lasted 20 seconds and was terminated by a flying lunge at the dummy. The female then flew from the nest tree. At this time the male approached the dummy and executed a typical epigamic sequence, as herewith described. The male, with tail fully fanned and depressed, body feathers ruffled, head withdrawn and slightly thrown back, mouth opened, legs flexed, and emitting a courtship song, faced the dummy and swayed laterally. His head and body traversed a horizontal arc of about 100°; vertically they traversed an arc of slightly less than 180°.

In the actions just described, both the female and the male responded to a silent, immobile bird (the dummy) as they would to another female. The female perhaps reacted aggressively, as toward a potential "rival," and the male perhaps courted a potential "mate." Use of the dummy has not evoked similar responses in either earlier or later stages of the breeding cycle.

Nolan (*op. cit.*: 275) suggested that swaying, as seen in the Red-eyed Vireo, is primarily an appeasement display. The evidence just given suggests more strongly that aggressive and courtship behavior are also involved, at least in Bell's Vireo and probably in other vireos. The simple motor act of swaying from side to side has been modified by adding, in various combinations, wing-flicking, tail-fanning or tail-depressing or both, erecting or sleeking of crest or thoracic feathers or both, gaping, and various vocalizations. Perhaps the highly specialized epigamic swaying of male Bell's Vireos has been derived from less complicated aggressive display resembling that of the female above described. I suggest that aggressive and epigamic swaying, as demonstrated by Bell's Vireo, are of higher intensity than appeasement swaying and occur more rarely, perhaps because sufficiently strong stimuli and greatest psycho-physiological excitation occur only in a few days of the total courtship and nest-building period, and therefore more rarely than contacts liable to evoke appeasement displays.

Bell's Vireo (subgenus *Vireo*) erects its feathers in all known swaying contexts. The Solitary Vireo (subgenus *Vireo*) also has been observed to erect its feathers while swaying (Townsend, *Mem. Nuttall Orn. Club*, 5: 1-196, 1912). On the other hand, the Red-eyed Vireo (subgenus *Vireosylva*) addresses its feathers when swaying (see Nolan, *op. cit.*: 274, for references to swaying in vireos of this subgenus). Thus data available for these three species suggest that, in addition to other slight behavioral differences in nest building and care of young, members of the subgenera *Vireo* and *Vireosylva* differ with respect to position of the head and thoracic feathers while swaying. My current studies on vireos are in part supported by a grant-in-aid from the Society of Sigma Xi.—JON C. BARLOW, *Museum of Natural History, The University of Kansas, Lawrence, Kansas.*