

An older nest, now fallen, was located in the swamp woods of the small basin referred to above, in the 1940's. We looked for it in 1958 without finding any trace.

It is interesting to speculate upon the origin of this eagle population. Perhaps it is most likely that a substantial part are Florida eagles summering in the north as suggested by H. K. Job (1908. "The Sport of Bird Study") and confirmed by Broley (1947. *Wilson Bull.*, 59:3-20), but this remains a speculation until more data are obtained. A study of arrival and departure dates for this eagle concentration may shed some light upon this question. Deep lakes nearby do not have eagles, I have been assured both by fishermen and guides, and the concentration described above is certainly seldom found anywhere in the northern Appalachian region.—WALTER R. SPOFFORD, *State University of N. Y. Medical College, Syracuse, N.Y.*, 6 September 1961.

Anting behavior of a Wood Thrush with a snail.—On 30 April 1961, in a wooded tract called Meeting of the Waters, owned by the University of North Carolina at Chapel Hill, I sat down on a foot-bridge at a small stream to watch and listen for warblers. A pair of Wood Thrushes (*Hylocichla mustelina*), foraging on the woodland floor only 30 feet away, were raking aside dead leaves with quick thrusts of their bills. As I watched, one of them seized an object in its bill and ran with it to the nearby woodland trail. There, on more solid ground, it began to hammer the object on the path in an obvious effort to break it. Through my binocular, I could see that the object was a snail, and a relatively large one. The glimpse I had of its flattened shell and spiral suggested that it belonged to *Polygyra*, a genus of land snails with which I am somewhat familiar, and which contains a large number of species.

Suddenly the Wood Thrush did an astonishing thing. Between moments of hammering the snail on the ground, it began in lightning-quick stabs to thrust the snail under its wings, along its flanks, and beneath its under tail coverts, just as a bird will do when anting. It dabbed the snail in its feathers a number of times before it finally broke the snail's shell into two parts and quickly bolted down the larger part, shell and all. Before I could move toward it to recover the remaining piece of shell, with a view to identifying the snail, the thrush ran to the smaller piece and swallowed it.

According to food-habits studies of birds (Junius Henderson, 1933. "The Practical Value of Birds," The Macmillan Company), all of our native thrushes, including the Robin (*Turdus migratorius*) and Varied Thrush (*Ixoreus naevius*), eat some snails. W. L. McAtee, former food-habits investigator with whom I discussed this experience, said that it is likely that many birds eat the shells of snails for their lime content, as well as the meat of the snail itself.

In a search of the literature, I could find no previous record of a bird anting with a snail, though the possibility of it may help to explain the transportation of snails by birds.—JOHN K. TERRES, *P.O. Box 571, Chapel Hill, North Carolina*, 3 May 1961.

A prolonged Starling fight.—On 23 May 1959, while in Spotswood, Middlesex County, New Jersey, I watched an unusually prolonged fight between two Starlings (*Sturnus vulgaris*). The encounter took place between 11:00 AM and 12:15 PM DST on a flat, tar-papered porch roof about 15 feet above the ground. The following is a résumé of notes taken while watching the combatants at a distance of 5 to 10 feet from a window overlooking the roof:

11:00—two Starlings (males, based on length of the hackles on the breast and darkness of the eye) have been rolling around and fighting for two minutes—clawing, biting, and grasping. They finally assume the pose shown in Fig. 1, at 11:02,

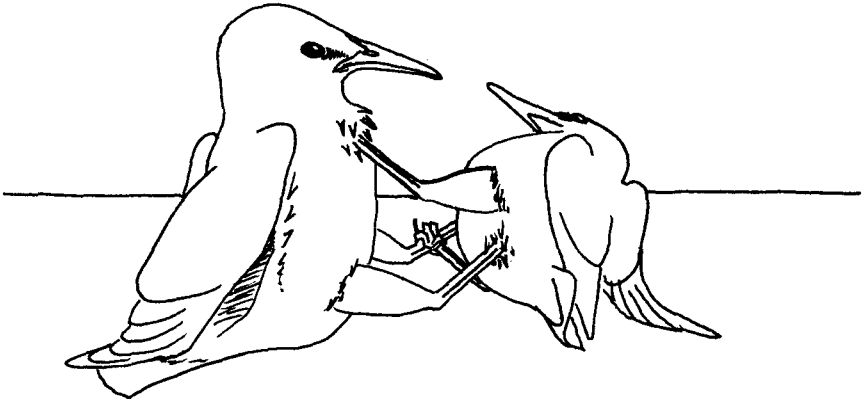


FIG. 1. Starlings locked in battle.

and remain essentially in this position until 11:35. During this time they remain motionless until one or the other renews its grip, and then a brief struggle ensues. During the initial stages of the fight, Starling *A* gave a few alarm notes and at 11:28, while renewing its grip spasmodically, twitched its wings, and gave elements of a song (especially noticeable was the "wolf whistle"). This is followed at 11:29 by sustained *sotto voce* singing.

- 11:30—both are doing quite a bit of jerking back and forth, but their position remains the same. Starling *B* is now wing-twitching a little.
- 11:34—*A* is doing quite a bit of backward jerking; *B* lies motionless.
- 11:35—position is changed and now both are lying on their sides. Both close eyes from time to time.
- 11:39—both still lying on sides, with *B* mostly lying on *A*; *A* is twitching his wings and *quirrting*.
- 11:42—both are now singing *sotto voce*.
- 11:45—another violent struggle—*A* is now grasping *B* by the bill and head, covering *B* with outspread wings and tail. They alternately struggle and become quiet, remaining locked in this position until 12:15.
- 12:00—both are now lying on their sides and each has the other by the head with one foot. Each has one or more claws caught in the membrane surrounding eye.
- 12:13—struggle again for two minutes.
- 12:15—one breaks away and flies off, followed shortly by the other, but not apparently in chase.

Kessel (1957. *Amer. Mid. Nat.*, 58:257–331), cites such fighting as a territorial dispute and it is obvious from her account that they are not uncommon; indeed, intraspecific contact fights are frequently reported for many other species. However, most of these described fights are of short duration, lasting from a few seconds to a few minutes. Prolonged fights (such as I described) apparently are not common. This is hardly surprising, since selection must be heavy against individuals engaging in intense, prolonged fights.

One other point which warrants further attention is the singing during the fighting—performed by both of the combatants. Song and various other vocalizations are an integral part of most passerines' breeding behavior, perhaps serving in part to prevent

physical contact between competing males. Since this is apparently also true of the Starling (Kessel, op. cit.), further explanation is needed for the above observation.

As defined by Van Tyne and Berger (1959. "Fundamentals of Ornithology"), primary song is the term given to the full-voiced utterings of a bird that serve to attract a mate, or warn away competing males; the secondary song is low and inward, inaudible beyond a few yards, and has no territorial significance. It was this latter "whispering" song that was rendered by both Starlings during the fight. However, this song occurred only during passive periods, not during the actual fighting—thus, it could be interpreted as another instance of "emotional song," given during the resting periods of an intense encounter. This explanation exceeds the terms of "emotional song" as given by Van Tyne and Berger (who include it as a type of primary song): ". . . a variety of songs that cannot be associated directly with securing a mate and defense of territory." But—it was a subsong, it did appear "emotional," and it was certainly, in the broadest sense, given in defense of territory.

I wish to thank Dr. Andrew J. Meyerriecks for his valued advice and assistance in the preparation of this manuscript.—JAMES BAIRD, *Massachusetts Audubon Society, South Lincoln, Massachusetts, 27 April 1961.*

Dowitcher attacks Willet.—On 3 July 1961, at Beach Haven, N.J., a small group of shore birds were resting and feeding at high tide when I noticed that a Short-billed Dowitcher (*Limnodromus griseus*) had hold of the tarsus of a Willet (*Catoptrophorus semipalmatus*) with his bill. The Willet tried to escape by running on one leg and fluttering. The dowitcher kept bracing himself to hold back the Willet. The Willet dragged the dowitcher about 200 feet in about four minutes. Finally, after the Willet fell down the third time, the dowitcher released the foot and grabbed the Willet by the neck, holding on about three seconds before the Willet escaped and flew away. The original flock, including about 10 Willets and 30 dowitchers seemed unconcerned.—E. I. STEARNS, *206 Lynn Lane, Westfield, N.J., 19 July 1961.*

An opossum-titmouse incident.—On the morning of 2 May 1961, while checking a grid of rodent livetraps at the south end of Lake Carl Blackwell, near Stillwater, Oklahoma, I noticed a pair of opossums (*Didelphis virginiana*). Startled by my presence, they at first remained still; but when I made no further movement they wandered off slowly in the dry oak leaves, amid poison ivy and coralberry. The female stopped and rooted something edible from beneath the leaves. The male followed and attempted to mate, but the female turned and bit him. Followed by the male, the female then climbed a 30–40-foot blackjack oak, to a horizontal limb some 25 feet from the ground. At the same time, I moved to a closer vantage point. Each time the male approached the female too closely, she repulsed him with mouth agape or with a quick sharp bite to the head or ear.

After observing this behavior for 45 minutes I saw a pair of Tufted Titmice (*Parus bicolor*) fly to the tree. Without much hesitation, the bird believed to be the female flew to the back of the male opossum and began plucking out hair. The opossum, at first somewhat startled, made various movements to chase the bird, which flew to a nearby branch, only to return for more hair. Each time the opossum moved she flew away, but soon returned to either the back, the rump, or the base of the tail to pull out more hairs. When the male opossum became too restless the bird flew to the back of the female for hair. After 15 or 20 trips to the back of either opossum, then to a branch