

## FROM FIELD AND STUDY

**Unusual "Bunching" Behavior of Starlings.**—On September 2, 1958, while driving southeast of Frederick, Frederick County, Maryland, my wife and I observed a "bunching" reaction of a flock of Starlings (*Sturnus vulgaris*) which seems to be unusual in several respects. A loose flock of about 25 individuals was flying over a plowed field when a Marsh Hawk (*Circus cyaneus*) took flight from the ground or a very low bush. The Starlings immediately closed to a dense group and veered quickly to one side. The harrier made no advance toward the bunched flock, but continued to flap, gaining altitude. When the hawk was about 15 feet off the ground, the bunched Starlings dived upon it from the rear, causing the larger bird to pull quickly to one side and lose about half its altitude. The Marsh Hawk paid no further attention to the flock, which was still densely bunched and flying erratically away from the hawk when we left the scene.

It is unusual that the bunching reaction was given in response to a hawk which exhibited absolutely no signs of attacking the smaller birds. Moreover, the evident aggressiveness of the behavior may also be unusual. Bunching is usually an evasive movement by pursued Starlings (Tinbergen, *The Study of Instinct*, 1951:169-170). However, it has been reported to have other functions. Tinbergen (*Bird Life*, 1954:19) mentions that bunched Starlings will fly above a hawk, thus distracting it from hunting. Although the circumstances are not fully described, Tinbergen also notes that "attacks" by bunched birds will actually cause a hawk to flee if it is not hunting too intensively (*Social Behavior in Animals*, 1953:55). The Starlings I saw definitely appeared to move together in an aggressive attack aimed at actively repelling the Marsh Hawk.

From these various reports, it appears that the bunching behavior may be oriented for evasion (probably when the Starlings' escape motivation is very high), for distraction (when attack and escape motivation are about equal), or for actually causing the predator to flee (when motivation is nearly pure attack).

Behavior which is motivated by simultaneously activated tendencies to attack and escape is by definition "hostile" in current ethological terminology. Moynihan (*Auk*, 72, 1955:256), in his excellent review of hostile behavior, suggests that most predator-reactions like mobbing and distraction displays "were originally evolved to induce an intraspecific response." It would be interesting to compare the Starling's bunching with other forms of predator-reactions and with intraspecific hostile displays to see what, if any, relationships exist.

Helpful comments on this note were kindly made by Dr. Andrew J. Meyerriecks.—JACK P. HAILMAN, *Bethesda, Maryland, January 26, 1959.*

**Cave Swallow Nesting in Building Near Cuatro Ciénegas, Coahuila, México.**—In a recent study of Texas populations of the Cave Swallow (*Petrochelidon fulva*), Selander and Baker (*Condor*, 59, 1957:345-363) call attention to the peculiar distribution of the species in México, where it is known only in the southernmost (Chiapas and Yucatán) and northernmost (Tamaulipas and Coahuila) regions. Since only four localities seem to be given for it in the north of México, one in Tamaulipas and three in Coahuila (Saltillo, Sabinas and Monclova), it seems worthwhile to record observations made in the vicinity of Cuatro Ciénegas, Coahuila.

At the Molino del Rey, a flour mill about three miles from Cuatro Ciénegas, from June 27 to July 2, 1958, I saw a mixed flock of at least 10 Cave Swallows, perhaps 30 Cliff Swallows (*Petrochelidon pyrrhonota*), and a few Barn Swallows (*Hirundo rustica*) hawking daily about buildings and a spring-fed stream. Barn Swallows were nesting in the buildings, but I saw no nests of Cliff Swallows and assumed they were using cliffs in the adjacent mountains.

On June 28, swallows were seen flying in and out of the second story of the mill. Investigation disclosed the occupied nests of three species of birds in one of the well-lighted, unoccupied rooms. A Say Phoebe (*Sayornis saya*) was incubating at a nest built upon a narrow board nailed across two ceiling beams. At the opposite end of the room, perhaps 20 feet away, in a nest fastened on the rough-hewn side of a beam, a Barn Swallow was incubating. Some 10 feet distant on the same beam, a Cave Swallow flushed from its nest and four slightly incubated eggs and flew from the building, giving a low cry. On the floor below this beam lay intact a newly made nest of Cave Swallow, together with

fragments of other mud nests, apparently destroyed by children. Four nest scars showed plainly on the beam between the two occupied swallow nests.

In a poorly lighted corner of an adjoining room, I found a second nest of the Cave Swallow. This one was fastened into the angle formed by a rough exposed stud and the plastered wall and was about nine feet from the floor and so close to the ceiling that it was difficult to remove the young birds, of which there were four, almost ready to fly. The nestlings flattened themselves in a row across the wide, flaring lip of the nest, all facing outward. On the floor beneath the nest were the eight half-shells of the eggs from which they had hatched.

After I had replaced the young and was standing near the nest, a parent bird entered the room with food. The young made hissing sounds, but the adult did not approach closer than about five feet and soon flew out again and continued flying by the windows, occasionally darting into the room for a moment.

On July 1, I collected the two larger young. When handled, they emitted a low gritty-toned *screet-screet*. Placed on a flat surface, they used their wings as props, moving around on their wrists, much in the manner of bats. When confronted with a cone of rolled newspaper, they backed rapidly into it until squeezed together in the very tip, and there they crouched, heads down, facing the opening. In a partly covered cardboard box, they scooted to the darkest corners whenever the lid was changed about to expose them to the indirect light. These specimens are now in the collection of George M. Sutton, University of Oklahoma.

When I returned to Cuatro Ciénegas on August 22, all nesting activities in the mill had ceased and no birds were seen in the building. Barn Swallows were still present but I failed to find a single Cave Swallow or Cliff Swallow.

I now examined the nest from which the two nestlings had been collected. Built with its long axis parallel to the wall, the nest measured approximately 8 by 5 inches at the rim and it was 6 inches deep, outside measurements. The rim sloped gently to a cup measuring approximately  $3\frac{1}{2}$  by  $2\frac{1}{2}$  inches and 2 inches deep, but the bowl had been so packed with lining that the young virtually had rested on a shelf. A few fine rootlets were pressed into the mud at the bottom of the cup, where considerable chitinous material from decomposed droppings and particles of feather sheathings had collected. On top of this waste was a layer of grass. The remaining space was filled with feathers—principally chicken and dove, with a single feather each of Chachalaca (*Ortalis vetula*), Brewer Blackbird (*Euphagus cyanocephalus*) and Great Horned Owl (*Bubo virginianus*)—bits of thread and string, and one narrow strip of screening silk, pieces of which were scattered on the mill floor.

Cave Swallows were found at two other localities in México in 1958. On June 30, at a cotton plantation 20 miles northwest of Cuatro Ciénegas, on the road to Ocampo, several were flying with Barn Swallows about the doors of houses of farm laborers. On July 6, at Los Indios Courts, Santa Monica, Zacatecas, southeast of the city of Zacatecas, I saw two or three Cave Swallows, again with Barn Swallows, flying around huge, long-abandoned, cone-shaped granaries, some of which had been converted into tourist quarters, now no longer in operation.

The birds at Cuatro Ciénegas seem to be the first reported Cave Swallows nesting in association with Barn Swallows. Their nesting in a building within the foraging territory of the Cliff Swallow was of special interest. Selander and Baker (*op. cit.*) show that in the southern part of its range, where the Cliff Swallow does not breed, the Cave Swallow sometimes uses buildings, as well as caves and cliff crevices, but they report that in the United States (and apparently also in northern México), where both species breed, it has not been known to nest outside of caves. They found "no record of the two species associating" in Texas; and they suggest that "where the two species are sympatric, as in Texas and New Mexico, nesting of *P. fulva* is restricted to caves by competition with *P. pyrrhonota*." Thanks are due Drs. Selander and Sutton for critical suggestions regarding this note.—LOUIE M. WHITAKER, Norman, Oklahoma, April 10, 1959.

**Further Records of the Hudsonian Godwit and Mississippi Kite in New Mexico.**—A recent note by Montgomery (Condor, 61, 1959:58-59) relative to the occurrence of the Hudsonian Godwit (*Limosa haemastica*) and the Mississippi Kite (*Ictinia mississippiensis*) in New Mexico prompts me to add the following records. On May 22, 1951, I collected an adult male Hudsonian Godwit on an intermittent pond near the western side of the usually dry playa known as Laguna del Perro,