

The strategy of the hunting Pigeon Hawks seemed quite apparent. They took advantage of the fright induced among small birds along the track by the noisy and swiftly moving locomotive. They hung back several cars from the front of the train, thus allowing the attention of their intended prey to become entirely focused in one direction. Then, as the small birds hurried away from the tracks, without thought of any aerial attack, they became the easy victims of as skillful a flier as the Pigeon Hawk. The nearness with which three of the Pigeon Hawks approached the side of the train, flying just outside our window, made identification certain; while the size, dark color and manner of flight of the others seen at greater distances dispels any doubt from my mind as to their identity.—KARL W. KENYON, *La Jolla, California*.

A hummingbird feeding habit.—On September 13, 1941, a female Ruby-throated Hummingbird was observed to hover before several spider webs, which it visited successively, and to feed upon several small insects entrapped therein. The webs were located at a height of about ten feet in the dead branches of small trees situated at the edge of a swamp. They seemed to be undamaged by the operation. The observation was made along the Potomac River near Alexandria, Virginia. No showy blossoms of the types usually frequented by hummingbirds were seen in the vicinity and no spiders were evident at the webs.—GEORGE A. PETRIDES, *National Park Service, Washington, D. C.*

Coöperative feeding of White Pelicans.—On June 28, 1941, the writers were privileged to witness an effective coöperative feeding venture of twelve White Pelicans in Blitzen Valley at Malheur National Wildlife Refuge, Oregon. Observation was made from a commanding position on top of volcanic 'Rim Rock,' which rises almost perpendicularly some sixty feet above the valley floor. When first observed, the birds were loosely grouped and leisurely swimming about the small pond that is a unit of a larger impounded body of water. The pool is some fifty or sixty feet from the observation point; consequently, from their elevated position the writers could see into the water and observe very clearly the movement of the birds.

It appeared that a school of fish swam into the pool through a connecting area leading from the larger body of water. Suddenly the birds assumed a circular position, surrounding the school. All the pelicans moved slowly but cautiously toward the center of the circle, their heads near the surface of the water or partly submerged and their necks slightly extended. The birds moved in perfect unison, making the circle progressively smaller, and ready to engulf their helpless victims at the first opportunity. When all twelve pelicans were close to the fish, the birds made rapid jabs at the fish and apparently consumed a large number of them. It appeared that every bird got from one to several fish. The degree of dexterity and the rapidity of movement of these large, awkward-appearing creatures were surprising. The birds seemed to know instinctively that coöperation materially benefited each individual.

Coöperative action in obtaining foods is probably much more prevalent than has been recorded for aquatic birds. Occasional instances have been observed at the Bear River Marshes in Utah of White Pelicans doing the actual herding of fish, the Forster's Terns and California Gulls flying overhead and darting down to pick up small carp and chub which the pelicans missed or forced to the surface. Avocets and, to a lesser extent, the Black-necked Stilts, also band together for coöperative drives on small fry and aquatic insects. Such drives are made in water of wading

depth; instead of forming circles, the birds present compact spearhead and wedge formations and sweep the bottom muck with the characteristic back and forth side movements of their long bills. As many as 13,000 Avocets have been observed taking part in such coöperative feeding projects. The operations may frequently be observed during the flocking period following the time when the young of the year are full grown.

The coöperative feeding of most, and possibly of all birds is probably incidental or accidental as birds are attracted to areas where feed is available and presence of one bird feeding usually attracts others.—CLARENCE COTTAM, C. S. WILLIAMS, AND CLARENCE A. SOOTER, *U. S. Fish and Wildlife Service, Washington, D. C.*

Goldfinch and Field Sparrow rifle small galls.—Watching Eastern Goldfinches (*Spinus tristis tristis*) forage over the twigs of bare white oaks on several days early in the spring of 1939, the writer was struck by the fact that, although the birds seemed to be attacking buds—they worked chiefly at the tips of the twigs, where buds were visible, and occasionally a fragment suggesting a scale dropped down—it never was possible to see a bud disappear. Because of the height at which the feeding was done, none of the particular twigs the Goldfinches visited could be examined. During the same period, however, Eastern Field Sparrows (*Spizella pusilla pusilla*) were noticed feeding, with the same appearance of budding, on white-oak saplings only a few feet tall. One of the twigs these had worked on was inspected, with the result that every leaf-bud on it was found to be intact, but among the cluster of terminal buds, and at the bases of some of these and of lateral buds, there proved to be a scattering of thin-shelled brown galls from a sixteenth to an eighth of an inch in diameter, some of which had been freshly torn wide open and were empty. The other saplings in which the Field Sparrows had worked were then examined; on those, too, the buds were intact but more rifled galls were found.

Plainly, the sparrows had not been budding, but opening the galls. This discovery suggested that the Goldfinches, too, had been doing that; in three different mixed woods they had fed exclusively in white oaks; the galls' positions again would account for the appearance of budding, and their small size for their invisibility. In the spring of 1940, this conjecture was circumstantially confirmed: the Goldfinches were found to feed longest in the trees most heavily infested with galls, and although it again was impossible to examine the particular twigs they visited while under observation, rifled galls were found elsewhere on the same trees.

Through the interest of Dr. Harry C. Oberholser of the U. S. Biological Survey, and Mr. C. F. W. Muesebeck, in charge of the Division of Insect Identification of the Bureau of Entomology and Plant Quarantine, specimen galls and an adult fly obtained from one were identified by Mr. Lewis H. Weld of East Falls Church, Virginia, as *Neuroterus vesicula* (Bassett), a gall-maker peculiar to the white-oak group. The insect, incidentally, Mr. Weld states, appears to be of no economic significance. Circumstantial evidence much like that in the case of the Goldfinch indicated that Field Sparrows also attacked the galls again in 1940, so that the habit appears to be a regular one of both species.

The galls' contents are taken at all stages of development—larva, pupa and adult. Of the two birds under discussion, the Goldfinches are the more assiduous hunters; flocks numbering up to twenty have searched the trees closely to heights of fifty and sixty feet and ferreted out even one type of the gall which, instead of growing out unprotected, displaces the heart of a bud and itself springs up partly enwrapped by the scales. The Field Sparrow rifling so far seen has been done by