

in the tropical forest because many species are present. It is likely that many tropical birds seldom interrupt flock-following to visit their nests. Certainly ant-tanagers of both species made few visits to their nests per hour (2 or 3 while feeding young), and it is well known that the size of tropical broods is generally smaller than that of northern broods (e.g., Lack, 1947. *Ibis*, 89:302-352). There may also be more nonterritorial species, more nonbreeding vagrants, and more nonbreeding immatures in tropical than in temperate forests. Some ant-tanager pairs were accompanied by one to three first-year birds, some greenlet territorial groups were trios rather than pairs, and many Dot-winged Antwren (*Microrhopias quixensis*) groups were larger than three birds.

Red-crowned Ant-Tanagers occasionally left a flock, visited their nests or engaged in territorial disputes or other activities for varying lengths of time, and later returned. At times one ant-tanager pair was replaced by a second after a territorial dispute when the flock crossed the ant-tanagers' territorial boundary. A wandering flock containing such birds as ant-tanagers must constantly vary in its composition.

I wish to thank the Belize Estates and Produce Company for their help at their Gallon Jug Camp, the National Science Foundation for fellowships supporting my studies, R. J. Newman of the Museum of Zoology at Louisiana State University for critical review of the manuscript, and G. H. Lowery, Jr., of that Museum, for directing the study.—EDWIN WILLIS, *Museum of Zoology, Louisiana State University, Baton Rouge, Louisiana, May 6, 1959.*

Encounters between Barn Swallows and a Mockingbird.—On two occasions during June, 1958, I observed repeated attacks by Barn Swallows (*Hirundo rustica*) upon a Mockingbird (*Mimus polyglottos*). My home in Bethesda, Maryland, backs on a large golf course where Barn Swallows fly back and forth catching food, and where Mockingbirds nest in the bordering shrubs. (I know of no nesting site of the Barn Swallow within a half mile.) It is only when it is raining that the two species meet, for the swallows sit out the rain preening on a telephone wire which is within the territory of a nesting pair of Mockingbirds.

On June 25 my attention was drawn to several swallows which were making repeated dives on a lone Mockingbird sitting on the wire. I do not know which species arrived first. The Mockingbird attempted to thwart the attacks by directing a head-forward thrust at each diving swallow, and by snapping its bill violently. This action continued for several minutes, during which it appeared that the swallows never actually hit the mocker in their dives.

A similar encounter took place the following day. On this occasion swallows were sitting together on the same wire when a Mockingbird flew to a spot about 5 feet farther along, a place which it had used as a song post throughout the breeding season. The swallows left the wire, chattering, and began diving at the larger bird as before. This time the attack was well-coordinated, the seven swallows diving alternately, one from the east side of the wire, the next from the west. This forced the Mockingbird to turn completely around after each dive in order to thwart the next. Its defense was the same as before, and after several minutes of attacking, the swallows left to join others on a wire about 100 feet away. On other occasions I have observed Barn Swallows peacefully sharing the same telephone line with various species, at least seven in all, without the slightest sign of conflict.

These events bear a striking similarity to those described by Cross (1950. *Wilson Bull.*, 62:39). He observed five Barn Swallows making repeated diving attacks on a Loggerhead Shrike (*Lanius ludovicianus*) perched on a wire. Since it was well past nesting

period, he suggested that the swallows recognized the shrike as a predator (either by instinct or experience or a combination of both), and therefore attacked it. If the Barn Swallow recognized the shrike by obvious "sign stimuli" (e.g., dark body, white wing patches, white outer tail feathers, sitting alone on a wire in the open), could it be that the swallows reported above "mistook" the Mockingbird for the similarly-patterned shrike, and therefore attacked it?—JACK P. HAILMAN, 4401 Gladwyne Drive, Bethesda, Maryland, March 17, 1959.

Common Grackle heavily infested with Mallophaga.—The number of Mallophaga (chewing lice) harbored by individual birds varies considerably even within the same host species. Of many factors limiting population size of the lice, preening by the host is undoubtedly instrumental in removing many lice and their eggs. A female Common Grackle (*Quiscalus quiscula*) (No. 55-A, KSCP), collected January 18, 1959, in Cherokee County, Kansas, was found to be carrying the unusually high number of 323 lice (*Menacanthus*). The bird appears to be normal except for a markedly malformed bill. The upper portion of the distal half of the lower mandible is lacking; the upper mandible is twisted, with irregular tomia and with an elongate horny growth at the tip. A V-shaped gap, 5mm. wide distally, separates the two mandibles for about half their length. When the bird was collected, a great number of mallophagan eggs still adhered to barbs of the under-wing coverts.

Our search for Mallophaga on 130 birds (representing 7 orders, 20 families, 44 species) collected in southeast Kansas during several winter months has revealed that many individual hosts are louse-free. Of those infested, most harbored less than 20 lice and only three were infested with more than 100 lice. Heavy lice infestation in the instance mentioned herein may be due primarily to the inability of the host to preen itself efficiently.—J. C. JOHNSON, JR. AND CHARLES A. LONG, *Department of Biological Science, Kansas State College, Pittsburg, Kansas, April 25, 1959.*