

About ten or twelve years ago the first pair of Robins bred in Houston. Since then the number of breeding birds has steadily increased, until now there must be as many as twenty-five pairs. The center of their distribution is on the grounds of the Houston Country Club but for the last two years they have been breeding in the vicinity of our home at No. 16 Courtlandt Place. There is a hiatus between the coming of these breeding birds and the leaving of the winter residents, the latter leaving two or three weeks before than the arrival of the summer residents. It would be very interesting if observers in other parts of Texas and southern Louisiana, where I understand Robins also breed, would investigate the earliest appearance of these summer residents and their present status. The identification of my bird was by Dr. Harry C. Oberholser.—J. J. CARROLL, *Box 356, Houston, Texas.*

The Migrant Shrike in the North Carolina Mountains.—For the past 23 summers the writer has paid considerable attention to the birds of the mountains of western North Carolina, and not until 1934 did he ever note the occurrence of any Shrike in that territory. On August 31, 1934, however, he saw two of these birds at the roadside between the town of Old Fort, and the resort of Ridgecrest, at an elevation of about 2400 ft., in the county of Buncombe. The birds were seen from a car, at a range of only a few feet, and were about a mile apart. They are referred to *Lanius l. migrans* as this is the form found in the western part of the state; *ludovicianus* being confined to the coast region. *Migrans* is mentioned by Cairns as a migrant in Buncombe County but it must be a very rare bird there, unless it passes through during October or later. The writer's residence in the mountains usually terminates on or about October 1.—ALEXANDER SPRUNT, JR., *R. F. D. No. 1, Charleston, S. C.*

Food Carrying by the Crested Starling.—While feeding meal worms (larvae of the Tenebrio beetle) to a specimen of the Crested Starling (*Galeopsar salvadorii*) in the National Zoological Park, I noticed that instead of eating them at once he took them one at a time from my hand and held them in his beak, working each one back towards the base of the beak and repeating the process with the next one offered. I purposely fed the bird all that he could hold between his mandibles until there were 21 worms protruding from the sides of the beak.

He was apparently following the practice, so common during the time that the nestlings are fed, when the parent secures a beak full of food before visiting the nest. This bird however having no youngsters, I was interested to see what he would do next. He simply walked to the rear of the cage, which he shared with a number of Doves, dropped all of the worms and devoured them in haste seeming to lose any further impulse to feed young.—MALCOLM DAVIS, *Nat. Zool. Park, Washington, D. C.*

Some Observations on the Behavior of Starlings and Grackles in Relation to Light.—From the middle of September to October 17, 1934, large numbers of Bronzed Grackles (*Quiscalus quiscula aeneus*) and Starlings (*Sturnus v. vulgaris*) roosted in the shade trees of a residential district of Columbus, Ohio, a half mile from our home; an acquaintance informs us that this is the first time that this has happened in the fifteen years he has lived in this district.

On nine mornings and five evenings, between October 6 and 15, I watched the flights of these birds from our lawn, noting the time and also the light as measured by a Weston photometer lent me by Dr. W. M. Barrows of the Zoology Department of Ohio State University. This instrument received full zenithal light. In the morning I faced the roost, so could easily see the first flock that rose. Many flocks consisted of one species only, while others were mixed. The roar from the roost was

plainly audible to me, starting two or three minutes before Civil Twilight (28 minutes before sunrise) at light of .2 foot-candles.

The light at official sunrise on nine mornings that I called clear ranged from 27.5 to 44 foot-candles, the median being 36.5; on two cloudy mornings it was 19.5 and 22. The light at sunset on two clear evenings was 33 and 35.5 foot-candles; on two slightly cloudy evenings 28 and 29, and on one really cloudy evening 22.

The first flight of Starlings on seven clear mornings left the roost 10 to 14 minutes before sunrise, the median being 11 minutes; light values ranged from 7 to 9.9 foot-candles, median 7.5. On the one cloudy morning they left 5 minutes before sunrise at 9.9 foot-candles. The date on which they left 14 minutes before sunrise was the exceptionally clear morning of October 12, when the light at sunrise amounted to 44 foot-candles. From the 8th to the 13th (except for the cloudy morning of the 10th) the first flight took place at from 7.0 to 7.6 foot-candles, but on October 14 and 15 the light values were 9.9 and 8.2 foot-candles; these mornings were markedly cooler than the others.

The largest flocks left on clear mornings from 10 to 4 minutes before sunrise at light values of 12 to 25 foot-candles, and on the cloudy morning one minute after sunrise at 22 foot-candles, the majority of the birds leaving between 20 and 25 foot-candles. The last flocks left from one to eleven minutes after sunrise at light values ranging from 44 to 85 foot-candles.

As to the Grackles on seven clear mornings their first flights left from 7 to 9 minutes before sunrise at light values of 13 to 16 foot-candles (median 14); on one cloudy morning they left 3 minutes before sunrise at a light value of 13.5 foot-candles. On the very clear morning of October 12 the first birds left exceptionally early—13 minutes before sunrise at a light value of only 8.5 foot-candles.

Curiously enough one or two Grackles that roosted alone not far from our house made their first flights very much earlier: on clear mornings from 15 to 21 minutes before sunrise at light values of 1.2 to 4.8 foot-candles, and on the cloudy morning 11 minutes before sunrise at 3.8 foot-candles. Since there was a deafening din from the roost for a full half hour before sunrise, it is clear that the birds are awake for some time before they fly. It is interesting how the solitary individuals started out so much earlier than the sociable members of the species.

The largest flocks of Grackles left at light values of 20.5 to 29 foot-candles, the median being 22; on clear mornings they left from two to seven minutes before sunrise, on the cloudy day one minute after sunrise. The last flocks were recorded at about the same times as the Starlings.

In the evenings the first flocks of both species were seen about one-half hour before sunset. The largest flocks passed over from 14 to 9 minutes before sunset on clear evenings and from 16 to 5 minutes before on more or less cloudy evenings. Light values ranged from 114 to 40 foot-candles, but the height usually occurred between 65 and 52 foot-candles. The flight ended just about sunset—from one minute before to three after.

This study covered a period of ten days only; observations on Starlings should be made throughout the year, as V. C. Wynne-Edwards (*British Birds*, 1931, 24, pp. 346-353) found a decided seasonal difference in the time of leaving the roost in southern England, the birds flying very early on December mornings and late in February and March.

My observations have shown that the first Starlings left the roost at lower light values than did the Grackles; that the flocks of Grackles were much later than single birds of this species; and that leaving the roost and returning to it were very closely correlated in both species with light.—MARGARET M. NICE, *Columbus, Ohio*.