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Some Preliminary Observations on the Roosting of Bronzed Grackles and Their Avian Associates at Ames, Iowa

By JOHN C. W. BLIESE AND GEORGE O. HENDRICKSON

Ames, Iowa is one of those midwestern cities which seem to be favored by several species of birds as their choice of night roosting sites. During the summer and fall months numerous bronzed grackles, starlings, cowbirds, and robins daily come, near sundown, to residential portions of Ames to spend the night in the shade trees, and leave for the surrounding countryside again early next morning.

At the peak of the roosting season up to 100,000 birds are probably involved. Of these it is estimated that perhaps 55-60 percent are bronzed grackles, 25-30 percent are starlings, 10 percent cowbirds, and about one percent or less, robins. The actual numbers vary somewhat from day to day.

Although the history of roosting at Ames has not yet been completely pieced together, it has apparently been going on for a number of years. For some years prior to 1949 the chief center of roosting was on the Iowa State College campus, adjacent to Lincoln Highway near the Memorial Union. Local areas in residential sections were also used. Late in 1948 an intensive campaign of shooting was waged against the birds and some of the trees were cut down. The birds did not return to the campus to roost in 1949, but located at two main sites, both residential areas, some two miles apart. The smaller roost was located less than one-half mile south of the old college roost, the larger in the northeast part of "downtown" Ames. Both areas were again used in 1950, but the smaller roost became even smaller, more of the birds apparently going to the larger roost. In 1951 the smaller roost was virtually non-existent, except for a few trees for a very short period of time.

The several species of birds roost together in various proportions. In many places, however, there is a decided preponderence of the one species over the others. Thus, the corner of Clark Avenue and 7th Street seemed particularly satisfying to starlings in 1951, but all species mentioned above were present. One black maple tree on 7th Street, just west of Wilson Avenue, was a special rendezvous for cowbirds in 1951, but the other species roosted with them. In most places, nevertheless, as one would surmise from the percentages pre-

Table 1

The Species of Trees on the Fifteen City Blocks Comprising the Ames Grackle Roost on August 30, 1951

Species	Total Present	Number Used as Roost	% Used as Roost
Elm, American	201	55	27.4
Elm, Chinese	9	2	22.2
Elm, Siberian	5	0	0.0
Elm, Red	6	1	16.7
Maple, Black (& Sugar)	53	29	54.7
Maple, Norway	31	16	51.6
Maple, Silver	3	0	0.0
Maple, Boxelder	15	2	13.3
Basswood	24	0	0.0
Apple	21	0	0.0
Cherry	15	0	0.0
Walnut, Black	15	1	6.7
Walnut, White (Butternut)	1	1	100.0
Hackberry	15	1	6.7
Red Cedar	11	0	0.0
Yellowwood	11	0	0.0
Poplar, Bolleana	11	0	0.0
Ash, Green	10	1	10.0
Plum	9	0	0.0
Cottonwood	6	4	66.7
Mulberry, White	5	0	0.0
Spruce, Norway	4	0	0.0
Calalpa	3	0	0.0
Peach	3	0	0.0
Arbor Vitae	2	0	0.0
Spruce, Blue	2	0	0.0
Pear	2	0	0.0
Buckeye	1	0	0.0
Birch, Paper	1	0	0.0
Coffeetree	1	0	0.0
Hawthorn	1	0	0.0
Larch, Eastern	1	0	0.0
Locust, Black	1	0	0.0
Mountain Ash	1	0	0.0
Oak, Bur	1	0	0.0
Oak, Red	1	0	0.0
Persimmon	1	0	0.0
Pine, Red	1	0	0.0
Poplar, Lombardy	1	0	0.0
Sycamore	1	0	0.0
Totals	506	113	22.3

viously mentioned concerning the bird population, bronzed grackles were the most numerous.

Several other species were noted in some numbers roosting with the birds chiefly concerned. In 1950 a number of English sparrows roosted nightly in the trees near the corner of 8th Street and Clark Avenue. About 50 or more purple martins were seen roosting with the other species in both 1950 and 1951 during the early part of the season; and during the first part of the migration season of the martins, 500 or more were present on Clark Avenue at least one night in 1951.

As the season advances more and more birds join the roost, and the roosting area consequently expands. By and large, the people do not appreciate thousands of birds in their trees each night and disturb them greatly with shotguns, noisemakers, flashlight beams, etc. as they try to drive them elsewhere. They succeed only to a degree, but it helps to expand the total roosting area still more.

Just what is there about the sites which the birds select which causes the birds to select them? That question is one of the main points under investigation. It was early thought that the dimensions of the trees and the cover provided were important factors. With that in mind maps were prepared of the roosting areas and adjacent streets and the trees plotted on them. The trees were also measured for diameter of trunk, diameter of canopy, height, distance apart, etc. Periodic tours on bicycle were made through the entire northeast section of Ames and also the section south of the college. Symbols were recorded on hektographed copies of the maps to indicate which trees were used and also to what relative degree they were used, the accumulation of dropping being used as guide.

Little of the total data gathered has as yet been analyzed. Presented herewith however, is that of August 30, 1951. It concerns the roosting area in northeast Ames. On that date 15 city blocks had two or more trees each being used as roost. Since the city block was chosen as our arbitrary unit of study, all trees on all 15 blocks are included in the tables.

Table 1 gives the results by species, tree size differences being ignored. More American elms are present than any other species, and more are used as roosting sites than any other kind. When percentages of trees used is considered, however, the hard maples are seen to be favorite species for roosting sites. Data for butternut and cottonwood show still higher percentages of use, but there are obviously too few such trees to draw any conclusions.

In Table II are given the results according to the sizes of the trees

Table 2

The Use of Trees on the Fifteen City Blocks of the Ames Grackle Roost on August 30, 1951, According to Diameter at Breast Height

Diameter at Breast Height in Inches	Total Number of Trees Present	Number of Trees Used As Roost	% of Trees Used as Roost
1— 2	16	0	0.0
3— 4	46	0	0.0
5— 6	50	0	0.0
7— 8	44	3	6.8
9—10	31	5	16.1
11—12	38	5	13.1
13—14	44	6	13.6
15—16	41	15	36.6
17—18	48	15	31.3
19—20	31	9	29.0
21—22	33	11	33.3
23—24	23	12	52.2
25—26	20	10	50.0
27—28	20	8	40.0
29—30	6	3	50.0
31—32	6	5	83.3
33—34	2	1	50.0
35—36	4	3	75.0
37—38	2	1	50.0
39—40	1	1	100.0
Totals	506	113	22.3

using as index the DBH (diameters of the trunks at breast height) in inches, and ignoring species differences. It will be seen that no tree less than seven to eight inches in diameter was used as roost. The smaller trees are completely ignored under the conditions obtaining at Ames. From the seven-to-eight-inch group on, however, we find trees of every dimension used. A sharp increase in percentage of trees used occurs following the 13-14 inch category, and the new level of use is maintained up to the 23-24 inch category where another sharp increase occurs. Apparently the size of the tree is of significance to the birds.

The reason for the two sudden increases is suggested by Table 3. Correlating with the first increase is a sudden rise in the number of black maple trees of 15-16 inches DBH present in the area as compared with 13-14 inches or smaller diameter. Related to the second increase Table 3 shows that beginning with the 23-24 inches DBH category American elms become almost the only trees available. Their numbers dominate the picture. There may be some other ex-

Table 3

The Three Most Used Species of Trees on the Fifteen City Blocks of the Ames Grackle Roost August 30, 1951

DBH	American Elm			Black Maple			Norway Maple		
	Number Present	Number Used	% Used	Number Present	Number Used	% Used	Number Present	Number Used	% Used
1— 2	1	0	0.0	2	0	0.0	4	0	0.0
3— 4	9	0	0.0	3	0	0.0	4	0	0.0
5— 6	7	0	0.0	1	0	0.0	2	0	0.0
7— 8	7	0	0.0	1	0	0.0	5	3	60.0
9—10	7	0	0.0	1	1	100.0	4	3	75.0
11—12	15	1	6.7	4	1	25.0	2	2	100.0
13—14	23	1	4.3	2	2	100.0	2	2	100.0
15—16	12	2	16.7	16	10	62.5	3	2	66.7
17—18	22	5	22.7	11	6	54.5	3	2	66.7
19—20	17	4	23.5	6	5	83.3	0	0	0.0
21—22	21	7	33.3	6	4	66.7	0	0	0.0
23—24	15	9	60.0				2	2	100.0
25—26	17	10	58.8						
27—28	15	7	46.7						
29—30	6	3	50.0						
31—32	4	4	100.0						
33—34	2	1	50.0						
35—36	1	1	100.0						
Totals	201	55	27.4	53	29	54.7	31	16	51.6

planations, and it is hoped observations in 1952 will help to shed more light on this problem.

The variations in percentage of trees used from the 33-34 inch grouping and on up, shown in Table 2, are probably of no significance. Too few of these sizes are present to warrant any other conclusions. In some cases, no doubt, the location of these trees with reference to other roost trees is of importance.

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