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33rd Year, Bulletin No. 3.  
June, July, August, 1937



*Bird Calendar of the*

*Edited by  
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Prepared *Cleveland, Ohio*  
October 27, 1937

## CLEVELAND BIRD CLUB

A summary of the weather conditions during June, July and August is as follows:

Month	Mean Temperature	Normal Temperature	Total Precipitation	Normal Precipitation
June	67.5	67.1	6.64	3.12
July	73.2	71.4	4.87	3.45
August	74.4	70.0	2.10	2.77

The following people sent in records of field trips or nesting censuses included in this bulletin:

J. W. Aldrich	S. Charles Kendeigh
B. P. Bole, Jr.	Philip Moulthrop
F. W. Braund	Eugene P. Odum
A. B. Fuller	Ralph O' Reilly
Isabelle Hellwig	Donald P. Perry
Russell A. Huggins	Meritt B. Skaggs
Franklin Jedlicka	Arthur B. Williams

This issue of the bulletin was largely prepared by Mr. Eugene P. Odum. The editor also wishes to acknowledge the work done by Dr. Arthur B. Williams in the collecting and the preliminary editing of the breeding censuses which form a large part of this issue.

Only thirty-one trips by two observers were submitted for the summer period so that it does not seem worthwhile to give the usual statistics on abundance with only these as a basis. However, the excellent number of breeding bird censuses, more than makes up for the scarcity of field trips.

From field trips and random notes sent in the following records of the less common birds should be of interest:

American Egret (R.O'R) July 13 (3); (MBS) July 30 (10) both Pymatuning; (ABW) Aug. 17 (1).  
Ruffed Grouse (R.O'R) June 8 (1)  
Cliff Swallow (R.O'R) June 11 (2)  
Purple Finch (R.O'R) July 12 at Pymatuning. Nesting at Gates Mills (nest found, SCK), and on Little Mountain

Mr. Skaggs reports that the first southbound shore birds were noted at Fairport on July 25 as follows: Semipalmated Plover, 10; Least Sandpiper, 20; Sanderling, 28. At Pymatuning on July 30 Pectoral, Solitary and Semipalmated Sandpipers, Wilson Snipe, and Lesser Yellowlegs were noted. On July 29, hundreds of bank and Rough-winged Swallows were gathered for the fall migration.

In addition, Mr. Skaggs reports on July 28-30, several broods of ducklings of Mallard, Black Duck, Blue-winged Teal, Wood Duck, and Shoveller at Pymatuning

and 22 Wood Ducks in juvenile or eclipse plumage at Black Brook, on August 7.

Early fall warblers were noted at North Chagrin by Dr. Williams as follows: Blackburnian, Aug. 20 (1); Bay-breasted, Aug. 24 and 26; Tennessee and Canada, Aug. 26 (1).

Mr. Frank W. Braund sent in a very interesting list of nesting records for northeastern Ohio. The following are especially interesting:

Woodcock	April 14	4 eggs	Cuyahoga County
Red-tailed Hawk	April 25	4 eggs	Ashtabula County
“ “ “	May 3	2 eggs	Ashtabula County
Ruffed Grouse	May 8	15 eggs	Geauga County
Red-shouldered Hawk	May 15	? eggs	Ashtabula County
Marsh Hawk	May 16	1 egg	Ashtabula County
Virginia Rail	May 22	11 eggs	Portage County
Sora Rail	May 27	11 eggs	Portage County
Florida Gallinule	May 27	9 eggs	Portage County
“ “	June 5	2, 4, 7 eggs (3 nests)	Ottawa County
Coot	June 5	6 eggs	Ottawa County
Pied-billed Grebe	June 6	2, 7 eggs (2 nests)	Ottawa County

#### Breeding Censuses

A total of 16 nesting censuses were submitted, including a wide variety of habitats. All of these have recently been published in Bird-Lore (in somewhat different form than here presented) in connection with Bird-Lore's First Breeding Bird Census. It is significant to note that of the total of 30 censuses published, 15, or half, were from the Cleveland area, sub-mitted by members of the Cleveland Bird Club; no other area submitted more than two censuses. Therefore, we may rightly consider ourselves pioneers in breeding bird censusing!

The censuses which follow are interesting from many points of view, as, for example:

(1) – Density of population. The number of pairs per acre of areas in the same sort of habitat compare very favorably as shown in Table I. Thus, in fields the density is low, 1.1 to 1.6 pairs per acre, but increases as the field grows up, 2.1 and 3.6. Forests have a lower bird density than shrubby fields. In forests the beech-maple shows a higher bird population, namely 1.9 to 2.3 (disregarding the disturbed area 9), than other forest types. Marshes generally have a high concentration of birds up to 3.5 pairs per acre. The bog forest censused by Dr. Aldrich is interesting because of the very low density of 0.65 pairs per acre. Finally, the country estate, where every attempt is made to produce a favorable environment for birds, has the greatest density, 6.2 pairs per acre, double that of most natural areas, showing what can be accomplished by planting shrubbery, eliminating cats, erecting boxes, etc., around human habitations.

(2) – Distribution of species. It is immediately apparent from looking over the censuses that some species are restricted as breeders to certain habitats while others range more widely but usually are more abundant in some one type of habitat (see especially Table (II)). Each type of habitat usually has one or two species which on the basis of numbers are predominant. Thus, Henslow Sparrows predominate in open upland fields to be replaced by Field and Song Sparrows as the field acquires shrubs. The Red-eyed Vireo and the Ovenbird are the most abundant birds of the undisturbed beech-maple forest. Likewise Black-throated Green Warbler leads in the Little Mountain pine-hemlock forest, and the Red-winged Blackbird predominates in all three marshes.

(3) Comparison of different years. Three of the areas have been censused for three years or more, namely, William's North Chagrin (No. 8), Bole's Little Mountain (No. 14), and the Baldwin Estate (No. 16) and consequently show some indications of yearly fluctuations. The North Chagrin area and the Baldwin Estate agree very closely in that 1935 showed a high density, 1936 a very low density (the abundance indices also showed that this was a low year for most species), and 1937 a considerable recovery from 1936, but not as high as 1935. The Little Mountain area does not fit into this scheme as 1936 was a high year. However, since Little Mountain is an isolated area with a rather different population (Black-throated Greens and Juncos) its cycles of abundance may well be different from the more wide spread habitats. It is hoped that the areas censused for the first time this year will again be censused in future years so as to throw more light on fluctuations in abundance. The fluctuations of individual species will also be worthy of considerable study with a few more years' data.

(4) Comparison of Cleveland Censuses with those from other parts of the country. (See Bird-Lore, September-October issue). – From examining censuses in Bird-Lore submitted from regions other than Cleveland the following interesting comparisons might be noted:

Two marshes, one at Chicago, the other in New York contained 3.4 and 8.6 pairs per acre agreeing with the Cleveland data that marshes are well populated.

Two overgrown fields (Columbus, Ohio and Selwickley, Pennsylvania) compare with like habitats in Cleveland with 2.0 and 2.7 pairs per acre.

No comparisons are available on open fields or beech-maple forests.

A pine-hemlock forest in Quebec had 1.08 pairs per acre as compared with 1.4 pairs on Little Mountain.

Since the species makeup of these similar habitats may vary greatly in the different parts of the country, it is interesting to note at least a rough similarity in total breeding populations.

Except for the New York marsh, the Baldwin Estate had the highest density reported. The Roosevelt Bird Sanctuary at Oyster Bay, New York, has a high density, as 160 nests were located for 12 acres, but as no distinction was made between first and second broods, the number of pairs was not determined. Only a "New Fill on a Salt marsh" and a dry chaparral area in California had a lower population than Aldrich's Bog Forest.

Table I.  
Summary of Nesting Censuses in the Cleveland Area;  
Density of Population in the Different Habitats.

<u>Location</u>	<u>Area</u>	<u>Observer</u>	<u>Pairs</u> <u>per</u> <u>Acre</u>	<u>Remarks</u>
<u>Open Treeless Field:</u>				
Cedar & SOM Center	40 acres	O'Reilly	1.6	A few seedling trees.
<u>Scrubby Fields:</u>				
Holden Arboretum	42 acres	Moulthrop	1.4	Some scrub, blackberries, small bog.
Holden Arboretum	55 acres	Fuller	1.1	Some scrub; a few trees.
Bentleyville Village	17 acres	Perry	1.8	8 acres disturbed by Scout C.
Cuyahoga Heights	17 acres	Jedlicka	2.1	Sumac, blackberries, weeds, scattered trees.
<u>Second Growth Scrub:</u>				
Geauga Country Club	15 acres	Hellwig	3.6	Trees 10-15 ft. high; briars and weeds.

Table I – (continued)

Beech-Maple Forests:

Holden Arboretum	39 acres	Williams	2.3	10 acres young Oak-Hickory.
North Chagrin Park	65 acres	Williams	1.9	With hemlock.
Bentleyville Village	26 acres	Perry	1.5	Disturbed by Scout Camp.

Marshes, Ponds and Bogs:

Aurora Pond	15 acres	Aldrich	3.0	Marsh; water high 1937.
Holden Arboretum	5.5 acres	Fuller	3.5	Ponds, bogs.
Cuyahoga Heights	33 acres	Jedlicka	1.5	Marsh, wet meadow (along river)

Flood Plain Forest:

Rocky River	50 acres	Williams	1.3	Characteristic flood plain
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Pine-Hemlock Forest:

(relic climax)				
Little Mountain	75 acres	Bole	1.4	Some chestnut, oak and r. maple

Red Maple-Yellow Birch-Tamarack (relic)Bog Forest:

Aurora Pond	23 acres	Aldrich	0.65	Water table high, 1937
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Country Estate, Sanctuary Area:

Gates Mills	15 acres	(Kendeigh (Huggins (Odum	6.2	“Forest edge”; orchards, lawns, shrubbery, and four acres of maple woods.
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Average . . . . . 1.75 Pairs per Acre.

Censuses of Breeding Birds – 1937

A. Open Field Habitat

1. Southwest corner of the intersection of Cedar and SOM Center Roads. Rolling upland; open treeless field with occasional patches of blackberries and other shrubs, and a number of small seedling trees scattered about. Five bird boxes put up, one of which was occupied by Bluebirds. Approximately 40 acres.

Census by Ralph O’Reilly:

Henslow Sparrow	19 <u>pairs</u>	Boblink	2 <u>pairs</u>
Field Sparrow	11	Bob-white	1
Grasshopper Sparrow	9	Ring-necked Pheasant	1
Song Sparrow	8	Alder Flycatcher	1
Starling	3	Savannah Sparrow	1
Bluebird	2	Vesper Sparrow	1
Northern Yellowthroat	2	Goldfinch	present
Meadowlark	2	Cowbird	<u>present</u>

Total pairs . . . . . 63  
 Pairs per acre . . . . . 1.6  
 Number of species . . . . . 16

B. Scrubby Fields

2. Holden Arboretum, Corning lot, lying east of Sperry Road. Largely open field with tall grasses, blackberries, cinquefoil, wild strawberries. Scrub thorn, choke cherry and young white ash trees scattered throughout, as well as a few large trees. A thicket of scrub apple and pear trees on western edge. 42 acres.

Census by Philip N. Moulthrop:

	<u>pairs</u>		<u>pairs</u>
Field Sparrow	22	Meadowlark	2
Henslow Sparrow	11	Woodcock	2
Song Sparrow	6	Bob-white	1
Red-eyed Towhee	4	Flicker	1
Vesper Sparrow	3	Catbird	1
Grasshopper Sparrow	2	Yellow Warbler	1
Northern Yellowthroat	2	Goldfinch	present
		Cowbird	present
Total pairs . . . . .	59		-----
Pairs per acre . . . . .	1.4		
Number of species . . . . .	15		

3. Holden Arboretum, west of Sperry Road and east of the wooded section. Fallow fields not abandoned long enough to have accumulated much density of vegetation; grass still fairly short and blackberries not yet rampant. A few large sugar maples scattered over the area. Some thorn scrub and small trees. 55 acres.

Census by Arthur B. Fuller:

Field Sparrow	25	Red-eyed Towhee	1
Song Sparrow	9	Meadowlark	1
Vesper Sparrow	7	Northern Yellowthroat	1
Robin	3	Catbird	1
Bluebird	2	House Wren	1
Yellow Warbler	2	Black-capped Chickadee	1
Chipping Sparrow	2	Phoebe	1
Henslow Sparrow	1	Flicker	1
Grasshopper Sparrow	1	Cowbird	present
Total pairs . . . . .	60		-----
Pairs per acre . . . . .	1.1		
Number of species . . . . .	18		

4. Bentleyville Village, on west side of the Chagrin River near the junction of Cannon and Solon Roads. 8 acres in use as parade ground, grass short; bordered by scrub thorns. 9 acres not in use and covered with tall grasses, blackberries with thorns and small red maples and black cherries. 17 acres.

Census by Donald R. Perry:

House Wren (in boxes)	7	Black-billed Cuckoo	1
Field Sparrow	4	Phoebe (in building)	1
Red-eyed Towhee	3	Catbird	1
Cardinal	2	Brown Thrasher	1
Song Sparrow	1	Robin	1
Chipping Sparrow	1	Bluebird	1
Goldfinch	1	Cedar Waxwing	1
Bob-white	1	Yellow Warbler	1
Mourning Dove	1	English Sparrow (building)	1
Yellow-billed Cuckoo	1	Cowbird	present
Total pairs . . . . .	31		-----
Pairs per acre . . . . .	1.8		
Number of species . . . . .	20		

5. Cuyahoga Heights; one half mile south of Harvard Road, between East 49th Street and the Cuyahoga River. Hillside covered with tall grass, blackberries, sumacs, and a few scattered willows, cottonwoods, and wild black cherries. Area bordered by a marsh and wet meadow and slag heap-cinder dump. 17 acres.

<u>Census by Franklin Jedlicka</u>	<u>pairs</u>		<u>pairs</u>
Rough-winged Swallow	7	Woodcock	1
Song Sparrow	4	Black-billed Cuckoo	1
Robin	3	Kingfisher	1
Bob-white	2	Kingbird	1
Mourning Dove	2	Phoebe	1
House Wren	2	Crow	1
Catbird	2	Alder Flycatcher	1
Yellow Warbler	2	Tufted Titmouse	1
Field Sparrow	2	Wood Thrush	1
		Cardinal	1
	Total pairs . . . . .	36	<hr/>
	Pairs per acre . . . . .	2.1	
	Number of species . . . . .	19	

#### C. Second Growth Scrub.

6. Geauga Country Club, between East Claridon and Middlefield. Sloping hillsides, western part thickly overgrown with scrub apple trees and thorns, eastern part more open with scattered bushes. Trees from 10-15 feet high. Ground covered with tall grasses, coarse weeds and blackberries. 15 acres.

#### Census by Isabelle Hellwig.

Yellow Warbler	12	Red-eyed Towhee	2
Catbird	10	Green Heron	1
Robin	6	Blue Jay	1
Field Sparrow	5	House Wren	1
Song Sparrow	4	Brown Thrasher	1
Mourning Dove	2	Bluebird	1
Black-billed Cuckoo	2	Cedar Waxwing	1
Rose-breasted Grosbeak	2	Blue-winged Warbler	1
Northern Yellowthroat	1	Chipping Sparrow	1
	Total pairs . . . . .	54	<hr/>
	Pairs per acre . . . . .	3.6	
	Number of species . . . . .	18	

#### D. Beech-Maple Forests.

7. Holden Arboretum, wooded section; rolling upland cut by gullies and revines, including one side of the deep ravine of Pierson Creek. Except for 10 acres of second growth oak and hickory, all beech-maple-hemlock forest with sapling and seedling trees fairly well developed. 39 acres.

<u>Census by Arthur B. Williams</u>	<u>pairs</u>		<u>pairs</u>
Ovenbird	15	Wood Thrush	3
Red-eyed vireo	12	Cerulean Warbler	3
Hooded Warbler	7	Louisiana Water Thrush	3
Wood Pewee	6	Scarlet Tanager	3
Tufted Titmouse	6	Red-bellied Woodpecker	2
Redstart	4	Downy Woodpecker	2
Hairy Woodpecker	3	Crested Flycatcher	2
Acadian Flycatcher	4	White-breasted Nuthatch	2
Black-capped Chickadee	3	Yellow-throated Vireo	2
Red-eyed Towhee	2	Black-thr. Green Warbler	1
Red-tailed Hawk	1	Cardinal	1
Flicker	1	Rose-breasted Grosbeak	1
Phoebe	1	Cowbird	<u>present</u>
Total pairs . . . . .		91	
Pairs per acre . . . . .		2.3	
Number of species . . . . .		27	

8. North Chagrin Metropolitan Park. Sloping uplands cut by deep ravines between bluffs over-looking the Chagrin river valley. Mature climax beech-maple forest with hemlock and a few other species present along ravines and on edges of bluffs. A dark forest, relatively high humidity, ground cover meager except in early spring. 65 acres.

<u>Censuses by Arthur B. Williams:</u>	<u>pairs</u>				<u>1937 - 1936 - 1935</u>		
	<u>1937</u>	<u>1936</u>	<u>1935</u>		<u>1937</u>	<u>1936</u>	<u>1935</u>
Ovenbird	22	14	8	Downy Woodpecker	2	2	2
Red-eyed Vireo	20	24	30	Crested Flycatcher	2	2	2
Hooded Warbler	14	10	9	La. Water Thrush	2	?	1
Redstart	13	13	19	Cardinal	2	2	4
Wood Thrush	6	8	14	Barred Owl	1	1	1
Scarlet Tanager	5	7	8	Flicker	1	0	0
Wood Pewee	5	5	7	Red-bellied Woodpecker	1	0	0
Acadian Flycatcher	5	5	2	Phoebe (on building)	1	0	0
Tufted Titmouse	5	3	4	Yellow-throated Vireo	1	1	3
Black-capped Chickadee	4	2	2	Cerulean Warbler	1	3	0
Hairy Woodpecker	3	2	3	Rose-breasted Grosbeak	1	1	1
White-breasted Nuthatch	3	3	4	Cowbird	pres.	pres.	pres.
Black-th. Green Warbler	3	4	3	Red-eyed Towhee	0	1	1
Total pairs . . . . .				123	114	133	
Pairs per acre . . . . .				1.9	1.7	2.0	
Number of species . . . . .				25	24	24	

This is the sixth year that a nesting census has been taken in this area. 1934, with 2.7 pairs per acre in the high year, and 1936 with 1.7, the lowest.[sic] In addition to the above species the Pileated Woodpecker and Ruffed Grouse have been found nesting previous to 1935.

9. Bentleyville Village. Rolling upland with precipitous sandstone cliffs bordering on gorge of Chagrin River. Beech-maple with red maple and hemlock. Ground cover largely seedlings, herbaceous plants with maple-leaved viburnum, witch hazel and spicebush as shrubs. Use of area as camp site by Boy Scouts has greatly affected ground cover. 26 acres.

Census by Donald R. Perry:

	<u>pairs</u>		<u>pairs</u>
Ovenbird	5	Ruby-throated Hummingbird	1
Red-eyed Vireo	5	Flicker	1
Robin	4	Crested Flycatcher	1
Wood Pewee	3	Crow	1
Tufted Titmouse	3	White-breasted Nuthatch	1
Redstart	3	Wood thrush	1
Black-capped Chickadee	2	Louisiana Water Thrush	1
Black-thr. Green Warbler	2	Red-eyed Towhee	1
Cardinal	2	Cowbird	present
Cooper's Hawk	1		
Total pairs . . . . .		38	
Pairs per acre . . . . .		1.5	
Number of species . . . . .		19	

E. Marshes, Ponds and Bogs.

10. Aurora Pond, north end. Ten and one-half acres of common rush-woolgrass and cat-tail marsh communities. Four and one-half acres of buttonbush, swamp rose, and small willow and aspen shrub communities. Area always flooded winter and spring; water table usually sinks below surface in summer, but in 1937 remained knee deep in height. 15 acres.

Census by John W. Aldrich:

Red-winged Blackbird	14	Kingbird	2
Yellow Warbler	6	Green Heron	1
Swamp Sparrow	5	Sora	1
Prairie Marsh Wren	4	Florida Gallinule	1
Alder Flycatcher	4	Catbird	1
Least Bittern	2	Northern Yellowthroat	1
Virginia Rail	2	Song Sparrow	1
Total pairs . . . . .		45	
Pairs per acre . . . . .		3.0	
Number of species . . . . .		14	

11. Holden Arboretum. Area including two small enlarged natural bogs and three small artificial ponds. Largest bog well occupied by buttonbush. 5.5 acres.

Census by Arthur B. Fuller:

Red-winged Blackbird	9	Spotted Sandpiper	1
Killdeer	3	Kingbird	1
Pied-billed Grebe	1	Yellow Warbler	1
Mallard	1	Song Sparrow	1
Wood Duck	1	Cowbird	<u>Present</u>
Total pairs . . . . .		19	
Pairs per acre . . . . .		3.5	
Number of species . . . . .		10	

12. Cuyahoga Heights; one half mile south of Harvard Road between East 49th Street and the Cuyahoga River. Low lying marsh and wet meadow flanked by steep hillsides (see census 5) on east. Heavy growth of cat-tails in marsh; sumac, goldenrod, swamp milkweed, common elder, swamp rose, and blackberries in wet meadow. 33 acres.



<u>Census by Franklin Jedlicka</u>	<u>pairs</u>		<u>pairs</u>
Red-winged Blackbird	20	Spotted Sandpiper	2
Swamp Sparrow	6	Sparrow Hawk	1
Killdeer	3	Virginia Rail	1
Prairie Marsh Wren	3	Sora Rail	1
Northern Yellowthroat	3	Black-billed Cuckoo	1
Alder Flycatcher	2	Robin	1
Savannah Sparrow	2	Song Sparrow	1
		Meadowlark	<u>1</u>
	Total pairs . . . . .		48
	Pairs per acre . . . . .		1.5
	Number of species . . . . .		15

#### F. Flood Plain Forest.

13. Rocky River reservation of Cleveland Metropolitan Parks, about one-half mile south of Puritas Road bridge. Characteristic flood plain forest of willows, sycamore, cottonwood and ash-leaved maple in wetter parts; and American elm, slippery elm, butternut, black walnut, Ohio buckeye, and black rock maple where not so wet. Ground cover of coarse, tall, weedy annuals. 50 acres.

#### Census by Arthur B. Williams:

Song Sparrow	9	Red-shoulder Hawk	1
Red-eyed Vireo	9	Bob-white	1
Ovenbird	7	Killdeer	1
Rough-winged Swallow	4	Spotted Sandpiper	1
Northern Yellowthroat	4	Black-billed Cuckoo	1
Redstart	4	Flicker	1
Crested Flycatcher	2	Downy Woodpecker	1
Wood Pewee	2	Crow	1
Tufted Titmouse	2	Black-capped Chickadee	1
House Wren	2	Robin	1
Catbird	2	Yellow Warbler	1
Wood Thrush	2	Alder Flycatcher	1
Cerulean Warbler	2	Goldfinch	present
Indigo Bunting	2	Cowbird	<u>present</u>
	Total pairs . . . . .		65
	Pairs per acre . . . . .		1.3
	Number of species . . . . .		28

#### G. Pine-Hemlock Forest.

14. Little Mountain, northern part of the top, elevation 1200 to 1300 feet. A relic climax community largely of old white pine and hemlock with some chestnut oak and red maple. Understory and sapling stages well developed in most places. 75 acres.

#### Census by B. P. Bole, Jr.:

	pairs 1937 – 1936 – 1935				pairs 1937 – 1936 – 1935		
Black-thr. Green Warbler	14	19	15	Red-eyed Vireo	2	7	5
Phoebe	11	5	11	Blue-headed Vireo	2	0	0
Slate-colored Junco	10	8	9	Rose-breasted Grosbeak	2	3	1
Hooded Warbler	7	12	9	Ruffed Grouse	1	0	1
Ovenbird	5	10	9	Pileated Woodpecker	1	1	1
White-breasted Nuthatch	5	4	3	Crow	1	0	0
House Wren	5	4	4	Cedar Waxwing	1	1	0
Robin	5	7	11	Cerulean Warbler	1	1	1
Hairy Woodpecker	5	6	4	Purple Finch	1	1	0
Wood Pewee	4	5	3	Chipping Sparrow	1	4	5
Black-capped Chickadee	4	4	2	La. Water Thrush	0	3	2
Scarlet Tanager	3	5	4	Yellow-throated Vireo	0	1	1
Indigo Bunting	3	3	1	Broad-winged Hawk	0	1	1
Mourning Dove	2	2	2	Great Horned Owl	0	0	1
Chimney Swift	2	0	0	Song Sparrow	0	1	1
Crested Flycatcher	2	2	0	Hummingbird	0	0	1
Blue Jay	2	1	1	Acadian Flycatcher	0	0	1
Wood Thrush	2	4	3				
				Total pairs . . . . .	104	125	113
				Pairs per acre . . . . .	1.4	1.7	1.4

#### H. Bog Forest.

15. Aurora Pond, north end. Red maple-yellow birch bog forest. Relic of boreal type with some tamarack, white pine and hemlock, and characteristic bog shrubs like toothed vibernum, mountain holly, and tall blueberry. Ground cover cinnamon fern, swamp dewberry, and considerable sphagnum moss. Area flooded in winter and spring, but usually the water table sinks below surface in summer; in 1937 remained several inches deep on forest floor. 23 acres.

#### Census by John W. Aldrich:

Downy Woodpecker	2	Black-capped Chickadee	1
Ovenbird	2	House Wren	1
Crested Flycatcher	1	Catbird	1
Wood Pewee	1	Bluebird	1
Blue Jay	1	Red-eyed Vireo	1
Tufted Titmouse	1	Grinnell Waterthrush	1
		Scarlet Tanager	1
		Total pairs . . . . .	15
		Pairs per acre . . . . .	0.65
		Number of species . . . . .	13

#### I. Country Estate (Forest edge habitat)

16. Baldwin Bird Research Laboratory Sanctuary. Sloping upland, west side of Chagrin River valley. "Forest Edge" habitat; vicinity of laboratory and dwellings; lawns gardens, orchards and abundant shrubbery (much of which is berry bearing), - plus four acres of hard maple woods with thick undergrowth. Water and nesting boxes (about 75, including all types) available. 15 acres.

#### Census by S. C. Kendeigh, E. P. Odum and R. A. Huggins:

	1937		1936	1935
	No.of <u>Nests</u>	No.of <u>Pairs</u>	No.of <u>Nests</u>	No.of <u>Nests</u>
Robin	23	12	32	56
English Sparrow (nest destroyed)	20	9	30	31
House Wren	19	11	16	16
Chipping Sparrow	16	8	14	12
Purple Martin	9	9	3	12
Starling (most nests destroyed)	8	8	11	10
Catbird	8	6	9	10
Song Sparrow	6	10	8	10
Mourning Dove	5	4	6	8
Flicker	2	1	2	1
Wood Pewee	2	1	0	1
Phoebe	2	1	3	5
Sparrow Hawk	1	1	0	0
Black-billed Cuckoo	1	1	0	1
Chimney Swift	1	1	1	0
Bluebird	1	1	1	1
Cedar Waxwing	1	1	4	3
Yellow-throated Vireo	1	1	0	0
Purple Finch	1	1	0	0
Ruby-throated Hummingbird	0	1	0	0
Red-eyed Vireo	0	1	1	0
Yellow Warbler	0	1	0	1
Rose-breasted Grosbeak	0	1	0	0
Goldfinch	0	2	1	2
Cowbird	present		present	present
White-breasted Nuthatch	0	0	0	1
Crested Flycatcher	0	0	0	1
Barn Swallow	0	0	0	1
Blue Jay	<u>0</u>	<u>0</u>	<u>0</u>	<u>1</u>
Number of Nests	127		142	182
Approximate Number of Pairs		93	82	119
Pairs per Acre . . . . .		6.2	5.5	7.9

The following table (Table II) is a summary by species of all 16 of the Cleveland censuses. Instead of listing the number of pairs found on each area, the number of pairs per 100 acres is given in an attempt to eliminate differences, due to variations in size of area censused. While such a figure is recognized as being somewhat arbitrary, especially when areas censused are small, it puts the occurrence of each species on a comparative basis. Thus for each species we can see at a glance in which of the 16 areas and in what type of habitat it was found to be most abundant. Tentative comparisons between species are also interesting, for instance, an idea as to the comparative size of nesting territory is indicated, if we assume that the highest concentration of a species in its preferred habitat is somewhere near the saturation point. Thus the highest concentration of Red-eyed Vireos is about 30 pairs per 100 acres, or 3.3 acres per pair, while the highest for Red-winged Blackbirds is 163 pairs per 100 acres, or about 0.6 acres per pair. The vireo does all its feeding inside its territory, but the redwing often goes outside, even into the upland for food. Note also there is little correlation between the taxonomic arrangement (check-list order) and habitat occurrence.

[Transcribers note: the following pages were printed in a vertical format in the original. They are herein rotated 90 degrees for easier readability.]

Table II - Page 1

Summary of Nesting Censuses in the Cleveland Area; Species and Pairs per 100 Acres in Different Habitats and Areas

Habitat	Open Field	Scrubby Field				2nd. Gr'th	Beech Maple Forest			Marshes, Ponds and Bogs			F.	P.	B.	C.
		1	2	3	4		5	6	7	8	9	10	11	12	P.F.	H.F.
Census Areas:	1	2	3	4	5	6	7	8	9	10	11	12	13*	14*	15*	16*
Pied-billed Grebe											18.2					
Green Heron						6.7				6.7						
Least Bittern										13.4						
Mallard											18.2					
Wood Duck											18.2					
Cooper's Hawk									3.8							
Red-tailed Hawk							2.6									
Red-shouldered Hawk													2.0			
Sparrow Hawk												3.0				6.7
Ruffed Grouse														1.25		
Bob-white	2.5	2.4		5.9	11.8								2.0			
Ring-necked Pheasant	2.5															
Virginia Rail										6.7		6.0				
Sora Rail										6.7		3.0				
Florida Gallinule										6.7						
Killdeer											54.6	9.0	2.0			
Woodcock		4.8			5.9											
Spotted Sandpiper											18.2	6.0	2.0			
Mourning Dove				5.9	11.8	13.4								2.5		26.8
Yellow-billed Cuckoo				5.9												
Black-billed Cuckoo				5.9	11.8	13.4							2.0			6.7
Barred Owl								1.5								
Chimney Swift														2.5		6.7
Ruby-throated Hummingbird									3.8							6.7
Belted Kingfisher					5.9											
Flicker		2.4	1.8				2.6	1.5	3.8				2.0			6.7
Pileated Woodpecker														1.25		
Red-bellied Woodpecker							5.2	1.5								
Hairy Woodpecker							7.8	4.5						6.25		

\* 13 = Flood Plain Forest; 14 = Pine-Hemlock Forest; 15 = Bog Forest; 16 = Country Estate

Table II - Page 2

Summary of Nesting Censuses in the Cleveland Area; Species and Pairs per 100 Acres in Different Habitats and Areas

Habitat	Open Field	Scrubby Field				2nd. Gr'th	Beech Maple Forest			Marshes, Ponds and Bogs			F.	P.	B.	C.
		1	2	3	4		5	6	7	8	9	10	11	12	P.F.	H.F.
Census Areas:	1	2	3	4	5	6	7	8	9	10	11	12	13*	14*	15*	16*
Downy Woodpecker							5.2	3.0					2.0		8.6	
Kingbird					5.9					13.4	18.2					
Crested Flycatcher							5.2	3.0	3.8				4.0	2.5	4.3	
Phoebe			1.8	5.9	5.9		2.6	1.5						13.7		6.7
Acadian Flycatcher							10.4	7.5								
Alder Flycatcher	2.5				5.9					26.8		6.0	2.0			
Wood Pewee							15.6	7.5	11.4				4.0	5.0	4.3	6.7
Rough-winged Swallow					41.3								8.0			
Purple Martin																60.3
Blue Jay						6.7	2.6		3.8					2.5	4.3	
Crow					5.9								2.0	1.25		
Black-capped Chickadee			1.8				7.8	6.0	7.6				2.0	5.0	4.3	
Tufted Titmouse					5.9		15.6	7.5	11.4				4.0		4.3	
White-breasted Nuthatch							5.2	4.5	3.8					6.25		
House Wren			1.8	41.3	11.8	6.7							4.0	6.25	4.3	73.7
Prairie Marsh Wren										26.8		9.0				
Catbird		2.4	1.8	5.9	11.8	67.0				6.7			4.0		4.3	40.0
Brown Thrasher				5.9		6.7										
Robin			5.4	5.9	17.7	40.2			15.2			3.0	2.0	6.25		80.4
Wood Thrush				5.9	5.9		7.8	9.0	3.8				4.0	2.5		
Bluebird	5.0		3.6	11.8		6.7									4.3	6.7
Cedar Waxwing				5.9		6.7								1.25		6.7
Starling	7.5															53.6
Yellow-throated Vireo							5.2	1.5								6.7
Red-eyed Vireo							31.2	30.0	19.0				18.0	2.5	4.3	6.7
Blue-headed Vireo														2.5		
Blue-winged Warbler						6.7										
Yellow Warbler		2.4	3.6	5.9	11.8	80.4				40.2	18.2		2.0			6.7

\* 13 = Flood Plain Forest; 14 = Pine-Hemlock Forest; 15 = Bog Forest; 16 = Country Estate

Table II - Page 3

Summary of Nesting Censuses in the Cleveland Area; Species and Pairs per 100 Acres in Different Habitats and Areas

Habitat	Open Field	Scrubby Field				2nd. Gr'th	Beech Maple Forest			Marshes, Ponds and Bogs			F.	P.	B.	C.
		1	2	3	4		5	6	7	8	9	10	11	12	P.F.	H.F.
Census Areas:	1	2	3	4	5	6	7	8	9	10	11	12	13*	14*	15*	16*
Black-throated Green Warbler							2.6	4.5	7.6					17.5		
Cerulean Warbler							7.8	1.5					4.0	1.25		
Ovenbird							39.0	33.0	19.0				14.0	6.25	8.6	
Grinnell Water Thrush															4.3	
Louisiana Water Thrush							7.8	3.0	3.8							
Northern Yellowthroat	5.0	4.8	1.8			6.7				6.7		9.0	8.0			
Hooded Warbler							18.2	21.0						8.75		
Redstart							10.4	19.5	11.4				8.0			
English Sparrow				5.9												60.3
Bobolink	5.0															
Meadowlark	5.0	4.8	1.8									3.0				
Red-winged Blackbird										93.8	163.8	60.0				
Cowbird	*	*	*			*	*	*	*	*	*			*		*
Scarlet Tanager							7.8	7.5						3.75	4.3	
Cardinal				11.8	5.9		2.6	3.0	7.6							
Rose-breasted Grosbeak						13.4	2.6	1.5					4.0	2.5		6.7
Indigo Bunting													4.0	3.75		
Purple Finch														1.25		6.7
Goldfinch	*	*		5.9	*								*			13.4
Red-eyed Towhee		9.6	1.8			13.4	5.2		3.8							
Savannah Sparrow	2.5				11.8											
Grasshopper Sparrow	22.5	4.8	1.8													
Henslow Sparrow	47.5	28.8	1.8													
Vesper Sparrow	2.5	7.2	12.6													
Slate-colored Junco														12.5		
Chipping Sparrow			3.6	47.2		6.7								1.25		53.6
Field Sparrow	27.5	52.8	45.0		11.8	33.5										
Swamp Sparrow										33.5		18.0				
Song Sparrow	20.5	14.4	16.2	59.0	23.6	26.8				6.7	18.2	3.0	18.0			67.0
Total: 86 Species																

\* 13 = Flood Plain Forest; 14 = Pine-Hemlock Forest; 15 = Bog Forest; 16 = Country Estate