

THE SPRING MIGRATION OF 1907 IN THE
VICINITY OF CHICAGO.

BY JOHN F. FERRY.

The weather *prevailing during March, April, and May of 1907, was so abnormal in character that the study of bird-migration during these months was one of absorbing interest to the ornithologist. March, 1907, was a very unusual month, it being the warmest on record for this vicinity, with one exception. Its mean temperature was 43° , which made it actually average 3 degrees warmer than the following April. The average daily temperature was 7.6 degrees warmer than the normal temperature for this month. The month was humid, cloudy and inclement, there being nine days when there was hail, sleet, fog, or thunderstorms and during the month there were but three days of continuous sunshine. Notwithstanding these unfavorable elements bird-life was abnormally abundant from the 16th day on, from which day almost continuous warm weather prevailed. This indicates that temperature is a very important factor in influencing migration.

April was quite the opposite of March, it being the coldest April on record with one exception. The mean temperature of the month was 40° as compared to a normal temperature of 46° . The average daily temperature was $6\frac{1}{2}$ degrees cooler than the normal. There were but seven clear days during the month. May was peculiar, it being the coolest May on record (one exception). Its average temperature was 52° , while the normal temperature for May is 56° .

The corresponding influence of these peculiar weather conditions upon bird-migration was quite noticeable. The first half of March was cool, the temperature averging 35° up to the 16th, when the first movement of the year really began. During the remainder of the month the temperature averaged 50° , and beginning with the large movement on the 16th bird

* Professor Henry J. Cox, of the local U. S. Weather Bureau, has been extremely kind in furnishing me with full reports on the weather. The records of the Chicago station extend over 37 years.

life was abundant during this period. A daily average of 17 species was observed. Then followed the cold spell of April, continuing till the 20th, with an average temperature of 37°. During this period there was practically no migration, and what became of bird-life, previously so abundant, is an interesting subject for speculation. During this period an average of 11 species of birds per day was observed. On the 21st the temperature rose to 45°, continuing near that figure for the remainder of the month. Again bird life became abundant, an average of 18 species per day being observed. As previously stated May was a cold month and only seven new migrants arrived till the 8th, when ten firsts were observed. This period was one of typical April weather with a temperature of 47°, several frosts and a thunderstorm. The birds coming at this time made their way against light north and northeast breezes which blew most of the time.

On May 12th occurred the great movement of the migration. On this date 21 "firsts" were observed. The wind blew from the south and attained its highest velocity for the month—40 miles per hour. Its average velocity was 27 miles. The weather was clear with a temperature of 58°. The movement continued with little abatement during the 13th, the temperature rising to 71°—the warmest day of the month—and the wind continued at 27 miles, shifting to the southwest. On this date 14 "firsts" came. The warm spell inaugurated on the 12th continued till the 19th, excepting the 15th, which was cold, with an average temperature of 60°, and bird life was extremely abundant, especially warblers. On the 20th occurred a drop in temperature to 44°, and unseasonably cold weather continued the rest of the month. The effect of this change was very noticeable. The migrants showed very little disposition to progress, but seemed to have broken ranks and were feeding leisurely in the tree-tops. The extreme backwardness of the season was shown in the retardation of the foliage which in turn limited the abundance of insect life. During several cold spells, notably on the 15th, the struggle for life seemed extremely severe. The warblers

gave up their search in the well-nigh leafless trees and descended to the ground. Here on the edges of muddy roads or ditches or wherever the bare earth was exposed, they hopped, puffed out and numb with cold eking out their

Fig. 6.

Jones, 1907.



White-crested Cormorant (*Phalacrocorax dilophus cincinnati*).
Carroll Islet.

scanty fare from small worms and larvæ. At this time only the earlier trees had begun to leaf out—willows, poplars,

and birches. A general view of the forest showed it almost entirely bare.

During May 30 and 31, and June 1 and 2 steady cold north or northeast winds prevailed and during the two latter days with such force that only on the southern edges of woodland could warblers be found. At this time the trees were quite generally leaved out, furnishing an abundance of insect life. Thus confronted by favorable present conditions and those adverse for migrating the birds were disposed to linger. A feeling of contentment seemed to reign among them. They became extremely fat in marked contrast to their previous half-starved condition and the tree-tops resounded with their songs. The cold weather continued till the 9th of June and the migrants remained in considerable abundance during most of that time. However, a noticeable thinning out of their numbers occurred gradually till the 9th was reached, upon which date they vanished completely. In summing up it can be said that the warblers became common from the date of their main arrival, May 12th, and continued here in abundance till June 2nd and were even fairly common till their departure on the 9th of June. This period of long duration is a singular fact in itself, but it is even more remarkable when the abundance of the migrants during their entire stay is considered. If the count is made from the time when the first stragglers arrived, May 8th, their continuance here embraced more than a month,—33 days.

The extreme lateness of the season is clearly shown by the following migration table and in lesser degree by the table showing a comparison between the condition of certain flowers, trees and shrubs for this year and for the spring of 1906:

TABLE SHOWING CONDITION OF PLANT LIFE FOR THE SPRINGS OF 1906 AND 1907.

	1906	1907
<i>Forsythia</i>	Apr. 22—In flower	Apr. 22—In flower
Lilac (<i>Syringa vulgaris</i>)	Apr. 30—Leaves 1½ in.	Apr. 30—Leaves ¾ in.
	May 9—Flowers in full bloom	May 25—In full bloom
Red Trillium.....	May 6—In flower	May 12—In flower
May Apple.....	May 3—Plants 1 ft.	May 7—Plants 2-3 in. high
Butter-cups	Apr. 25—In flower.	May 7—In flower
Anemones	Apr. 25—In bloom	May 7—In flower
Ash	Apr. 28—Leaves 1½ in.	May 2—Leaves ¾ in.
Cherry	May 4—In flower	May 21—In full flower
Willow	Apr. 30—Leaves ¾ in.	Apr. 29—Leaves ½ in.
Dog-tooth Violets.....	May 3—In flower	May 7—In flower
Bumble Bee.....	May 3—	May 12—
Dragon Fly.....	May 3—	May 12—
<i>Acer negundo</i>	May 4—Leaves 1½ in.	May 12—Leaves 1½ in.
<i>Trillium grandiflorum</i> ...	May 6—In flower	
Crab-apple (<i>Pyrus coronaria</i> L.).....	May 20—In full blossom	May 12—In flower
Elm	May 9—Leaves ½ in.	June 6—In full flower
Hawthorne	May 26—In full bloom	June 9—Leaves 1-3 out June 1—In bloom

The following calendar gives in outline the progress of the migration for the spring of 1907 with occasional notes on vegetation, etc. The weather conditions were given for each date in the hope that the influence of weather upon migration could be thus shown. That this hope has not been realized is quite evident, for the records clearly show that birds migrate in all kinds of weather, paying little attention to velocity or direction of wind or of temperature. To this statement one marked exception is shown in that really great migration movements usually take place during a high southwest wind. For proof of this fact note the meteorological conditions when the large migration waves occurred this spring, March 16, March 28, May 12-17, May 22, May 25, May 28.

Day	Wind-direction	Wind-velocity	Temperature	Character of day	MARCH.
15	SW	16	50	partly cloudy	First active migration of year begins. First seen: Junco, Red-shouldered Hawk, Kingfisher, Red-headed Woodpecker, Fox Sparrow, Red-winged Blackbird, Meadowlark.
16	SW	27		clear	Heavy migration. Frost all out of ground. First seen: Red-tailed Hawk, Sparrow Hawk, Marsh Hawk, Sharp-shinned Hawk, Phoebe, Rusty Blackbird, Cowbird, Bronzed Grackle, Migrant Shrike, Towhee.
17	NE	16	42	partly cloudy	Bird-life abundant. Des Plaines River free from ice. Few Robins and Bluebirds. First seen: Am. Coot, Song Sparrow.
18	NE	15	40	cloudy	Ponds mostly free from ice. Following common: Bald-pate Herring Gull, Canada Geese, Mallards, Lesser Scaup, Red-winged Blackbird, Fox Sparrow, Junco, Song Sparrow (<i>Anas obscura T. C.</i>). First Ring-necked Duck.
19	NW	16	50		First Sapsuckers.
20	NE	14	40	partly cloudy	Herring Gulls abundant. Lesser Scaup c. First Lapland Longspurs and Vesper Sparrows.
21	SW	16	58	partly cloudy	First Ruby-crowned Kinglets, Hermit Thrushes, and Vesper Sparrows.
22	NE	15	60	cloudy	Very warm and summer-like. Max. temp. 80. Bird-life abundant. First Winter Wren, Red-breasted Nuthatches and Field Sparrows.
23	SW	20	64	partly cloudy	Very warm and summer-like. At 6 p. m. a thunder and lightning storm.
24	NE	12	42	partly cloudy	Hawks extremely numerous. Lesser Scaups c. First Blue-winged Teal.
25	S	17	53	cloudy	Lapland Longspurs flying north. Lesser Scaups c. A wave of migrants to-day.
26	SW	16	58	cloudy	First Florida Gallinule.
27	SW	15	60	cloudy	Leaves turning green at Jackson Park. First hepaticas.
28	NE	15	48	cloudy	Prairie Chickens booming at Glen Elyn (B. T. Gault), Loons (<i>G. imber</i>) c. First Pied-billed Grebe. Last Am. Merganser seen.
29	W	26	54	cloudy	Many angle-worms crawling on ground at Jackson Park. First Wilson's Snipe, Am. Bittern, Great Blue Heron.

Day	Wind-direction	Wind-velocity.	Temperature	Character of day	MARCH (Continued).
30	NW	15	46	clear	Temperature suddenly fell to 28, making beginning of cold spell, lasting till April 20. First Purple Finch.
APRIL.					
1		9	32	partly cloudy	Thin ice on rivers and ponds. Frogs croaking. Marsh Hawks c, Grasshopper (<i>Schistocetes americana</i>). Lesser Scaups ab. First Least Bittern, Herring Gulls, c. Practically no migration from April 1-20.
5		26	34	cloudy	Flicker nesting. Mallards c.
6	E	22	36	clear	Woodcock's nest. First Red-breasted Merganser.
7	SE	21	39	cloudy	Rains all day. First Bonaparte Gull.
11	SW	13	38	cloudy	Ash-flowers out. Young leaves of cherry and goose-berry nipped by cold of past few days. Four Robins' nests. Red-breasted Mergansers, common. Continue so till May 3. More Bonaparte Gulls. A warm rain.
12	NW	24	36	cloudy	Snow-storm, 1½ in. of snow. First Horned Grebes. Last Mallards.
14	NW	28	28	clear	Cold—ice ¾ in. Second Hermit Thrushes.
15	S	20	36	cloudy partly	Pied-billed Grebes common.
16	NW	24	38	cloudy	Red-breasted Mergansers flying restlessly about in the high N. W. wind. First Virginia Rail, Sora Rail, and Shoveller.
17	E	11	36	cloudy	Bonaparte Gulls T. C. First Yellow-legs, and Purple Martins.
18	E	12	36	cloudy	First Savannah Sparrow and Am. Bittern.
19	NE	8	37	clear	Prairie Chickens booming at Glen Elyn (B. T. G.). First Pine Warbler.
20	NE	13	38	clear	Many Red-breasted Mergansers disappear during warm weather of 20-22. First Black-crowned Night-Heron.
21	SW	17	45	clear	Dandelions out. A beautiful day. Hawthorne and goose-berry leafing out. Violet plants 1 in. high. Red trilliums 2 in. high. Spring beauties abundant. Hepaticas out. Ruby-crowned Kinglets in full song. Trees and shrubbery still bare. Tree Swallows and Bank Swallows. Crow sitting.
22	SW	16	54	clear	<i>Forsythia</i> in full bloom. First White-throated Sparrow.

Day	Wind-direction	Wind-velocity.	Temperature	Character of day	APRIL (Continued).
23	N	12	50	partly cloudy	First Spotted Sandpiper, Palm Warbler and Blue-gray Gnatcatcher.
24	SW	18	54	partly cloudy	Bronzed Grackles nesting. First common Tern and House Wren.
26	NE	15	35	clear	Small red butterfly and Dragon-fly. First Hooded Merganser.
27	E	12	44	partly cloudy	Horned Grebes common. First Long-billed Marsh Wren and Black and White Warbler.
28	NE	8	49	cloudy	Catalpa leaves $1\frac{1}{2}$ in. long. First Grinnell's Water-Thrush. First Green Heron, Solitary Sandpiper, Henslow's Sparrow, Lark Sparrow, Barn Swallow, Rough-winged Swallow, and Black-throated Green Warbler.
30	NE	21	36	partly cloudy	Willow leaves about $1\frac{1}{2}$ in. long. A great influx of Towhees and White-throated Sparrows.
MAY.					
2	NE	6	40	partly cloudy	Last Bonaparte Gull. Blue-winged Teal common.
3	N	20	42	cloudy	Last Red-breasted Merganser seen. Common Terns c.
4	SE	11	38	partly cloudy	200 Lesser Scaups. First Parula Warbler, Cape May Warbler, and Black Tern.
5	S	12	45	cloudy	First Bobolink and Grasshopper Sparrow.
6	NE	10	45	partly cloudy	First Wood Thrush and Willow Thrush.
7	NE	12	44	clear	Hawthorne leaves $\frac{3}{4}$ in.; Ash flowers 1 in.; cherry leaves 1 in. long; May apples 2-3 in. high; white trilliums in bud. Dog-tooth violets, anemones, butter cups. First Kingbird. Numbers of migrants arrive. First Yellow Warblers.
8	NE	11	46	clear	Traill's Flycatcher, Least Flycatcher, White-crowned Sparrow, Black-throated Blue Warbler, Prairie Warbler, Redstart, Oven-bird, Catbird. Blue-winged Teal and Lesser Scaups common at Fox Lake. Also an eagle (species?). Trees are still bare of leaves. Black Terns abundant at Fox Lake.
9	N	12	58	clear	More migrants arrive. First Chimney Swifts, Crested Flycatcher, Olive-backed Thrush, Green-crested Flycatcher, Chipping-Sparrow, Rose-breasted Grosbeak, Cliff Swallow.

Day	Wind-direction	Wind-velocity	Temperature	Character of day	MAY (Continued).
12	S	27	58	clear	Great host of migrants arrive to-day. Foliage of trees has made marked advance, earlier varieties being quite solidly green. Bumble-bees, dragonflies, red butterflies. Two flocks Pine Siskins seen (6, 9). Red-breasted Nuthatches very common. Olive-backed Thrushes, Least Bitterns, Black-crowned Night Herons common. First seen: King Rail, Whippoor-will, Nighthawk, Wood Pewee, Orchard Oriole, Dickcissel, Scarlet Tanager, Blue-headed Vireo, Prothonotary, Wilson's Magnolia, Chestnut-sided, Wilson's Canadian Warbler and Northern Yellow-throat, Gray-cheeked Thrush, Yellow-billed and Black-billed Cuckoos. Many migrants in song. Cooper's Hawk's nest with 4 eggs.
13	SW	27	71	clear	First seen: Ruby-throated Hummingbird, Olive-sided Flycatcher, Yellow-bellied Flycatcher, Lincoln's Sparrow, Golden-winged, Nashville, Connecticut, Mourning, Bay-breasted Black-poll and Blackburnian Warblers, Yellow-breasted Chat, Indigo Bunting, Red-eyed Vireo, Warbling Vireo, Yellow-throated Vireo, White-eyed Vireo. Brown Thrasher and Phoebe nesting. Bird-life abundant.
14	SW	17	70	cloudy	First Tennessee and Cerulean Warblers. Bird-life abundant.
15	SW	21	52	cloudy	A cold and raw day. Warblers abundant and sorely pressed for food, feeding on ground.
16	SW	16	42	partly cloudy	Chestnut-sided Warblers profusely abundant, numbering about one-third of all warblers seen. Wild geraniums, white trilliums, buttercups.
17	SW	16	64	partly cloudy	Flock of Pine Siskins. White cabbage moth. Bird-life abundant. Red and white trilliums in full blossom. Hazel leaves 1/2 in. out. Maples 1-3 leaved out.
18	NW	10	62	partly cloudy	The first great wave of migrants appear to have moved on, the few here restless and keeping in tree-tops. Scarlet Tanagers mating. Poplars 1/2 leaved out.

Day	Wind-direction	Wind-velocity	Temperature	Character of day	MAY (Continued).
19	W	16	57	partly cloudy	Flock of Pine Siskins. Last Red-breasted Merganser and Lesser Scaups seen.
20	NE	12	44	clear	Migrants abundant again to-day. The forests show only faintest tinge of green. Jack-in-the-pulpit out.
21	SE	8	48	clear	Cherries in full blossom, willows nearly fully leaved out. Cottonwoods leaved out.
22	S	16	55	cloudy	Great host of migrants arrived to-day. Rained hard at 6 a. m.
23	NE	15	48	cloudy	Warblers profusely abundant. Occasional showers.
24	E	20	50	cloudy	A decrease in number of migrants.
25	SW	15	62	cloudy	Another wave of migrants to-day.
26	SW	17	56	cloudy	Several species of little flycatchers abundant to-day.
28	SW	11	55	clear	Migrants abundant. Connecticut and Mourning Warblers extremely abundant.
29	SW	8	60	cloudy	Last Common Tern.
30	NE	14	56	partly cloudy	Warblers abundant. Many in song.
31	NE	19	52	cloudy	Water very high at Fox Lake. Many nesting birds drowned out. Red-wing Blackbirds, King Rail, Blue-winged Teal nesting. Last Spoon-bill Duck seen.
JUNE					
1	NE	25	50	cloudy	A wave of warblers in progress. They are very fat. A steady north wind. Warblers collected in droves on south side of woods.
2	NE	16	53	partly cloudy	Warblers abundant, keeping to tree-tops and exploring buds. The forest generally is only about one-third leaved out.
5	NW	20	60	clear	Warblers abundant. Hummingbirds abundant.
7	NE	20	53	cloudy	Warblers abundant. The following observed: Magnolia, Chestnut-sided c, Black-poll, Blackburnian, and many unidentified.
8	NE	22	54	clear	Warblers abundant, keeping well up in tree-tops. Trees leaved out as follows: Maples 2-3, Oaks $\frac{1}{4}$, Ash $\frac{1}{4}$, Elms 1-3. A flock of Crossbills seen at Lake Forest (<i>L. curvirostra minor?</i>). Olive-sided Flycatcher?
9	E	19	57	partly cloudy	Herring Gulls? Abundant at Waukegan. Warblers abundant and last seen on this date.

C—Common. T. C.—Tolerably common.

A few observations of general interest might have to be pointed out: During one of the cold, raw days in May a large flock of migrating Scarlet Tanagers were partially overcome and were driven to the ground in a large open pasture in search of food. Here scattered about they gave this part of the landscape a decidedly gory appearance and with their scarlet plumage presented a striking spectacle.

A number of species were abnormally abundant this spring, notably Ruby-throated Hummingbirds (May 5), Mourning and Connecticut Warblers, especially so on May 20, and Red-breasted Nuthatches (*S. canadensis*). An interesting fact about these Nuthatches was the extreme lightness of the underparts. Some days they were profusely abundant; but I cannot remember seeing one in the typical red-breasted plumage of the adult.

The occurrence of Crossbills (probably *Loxia curv. minor*) on June 8th, and of Pine Siskins on June 12th, is worthy of emphasis because of the unusual lateness of these dates for these species.

The frequency with which the warblers were heard singing during the migration was one of its most interesting features and offered an excellent opportunity for the study of their songs. Some of them are here given.

Black and White Warbler—*Tsee Tsee-Tsee Tsee Tsee*—5 lispings, very modulated notes.

Northern Parula Warbler—*Za-Zc-Za-Zcc-Zcc*, a buzzing, wiry trill, quickly given.

Black-poll Warbler—*It-tit-tit-tit-it-it-it*, seven short, sharply accented syllables, quickly uttered, high pitched and wiry, almost insect like.

Magnolia Warbler—*Whcc Whcc-a-Whcc-Whcc-a*.

Connecticut Warbler—*Twee-wcc-wcc-Twa-wcc* or *Twa-ee-ee-ee-at*; also *Whit-it-whcata-wheata-wheat*. Clear, loud, melodious warbler syllables closely run together and quickly uttered.

Canadian Warbler—*Twit-twec-ee-ee-chee-chee-chee-chee*.

Chestnut-sided Warbler — *Chee-chee-chee-chee-chee-chee-chee*, a clear, well accented warble, like the song of Redstart. The syllables proceed in rising cadence up to the fourth syllable, the last two being strongly accented.

The notes used in this article have been very courteously put at my disposal by the department of zoology of the Field Museum of Natural History, and many of these have been furnished by the following persons to whom I take great pleasure in expressing my thanks:

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Most of the above persons are amateurs, but are careful observers, while six collectors are included in this list, so that the records upon which this article are based can be considered reasonably accurate. The writer has also included his own records which were secured through daily observations and considerable collecting.

Prof. Wells W. Cooke has kindly furnished the notes on "Average date of last one seen" from the records of the U. S. Biological Survey. Mr. Gault furnished me with a most valuable list giving the average date when many species were first seen and has kindly consented to correct the proof of this article, owing to the writer's absence from this country.

NAME.	First Seen	Next Seen	Became Common	Last Seen	Average Date Last Seen	Average Date First Seen
Horned Grebe.....	April 4	Apr. 26	Apr. 27	.....	.....	.....
Pied-billed Grebe.....	Mar. 28	" 10	" 15	.....	.....	Apr. 10
Common Tern.....	April 24	" 25	" 25	May 25	May 26	.....
Red-breasted Merganser.....	April 6	" 7	" 12	" 19	" 1	.....
Blue-winged Teal.....	Mar. 24	" 16	May 2	" 31	.....	Apr. 16
Canada Goose.....	Mar. 15	Mar. 18	Mar. 18	" 7	Apr. 16	.....
Great Blue Heron.....	Mar. 29	Mar. 30	Apr. 21	.....	.....	Apr. 16
Green Heron.....	April 28	Apr. 29	May 19	.....	.....	" 30
Black-crowned Night Heron.....	" 20	" 21	" 12	.....	.....	" 26
King Rail.....	" 12	" 13	Apr. 18	.....	.....	" 22
Virginia Rail.....	" 16	" 18	" 21	.....	.....	May 2
Sora Rail.....	" 16	" 18	" 21	.....	.....	Apr. 22
Wilson's Snipe.....	Mar. 29	Mar. 31	" 7	May 19	May 4	" 4
Solitary Sandpiper.....	April 28	Apr. 29	May 19	May 26	May 14	May 5
Killdeer.....	Mar. 11	Mar. 16	Mar. 22	.....	.....	Mar. 26
Mourning Dove.....	" 24	" 29	Apr. 13	.....	.....	Apr. 8
Marsh Hawk.....	" 16	" 29	" 1	.....	.....	Mar. 26
Sharp-shinned Hawk.....	" 16	" 17	May 24	.....	.....	Apr. 10
Cooper's Hawk.....	" 10	" 22	Mar. 22	.....	.....	" 11
Red-tailed Hawk.....	" 16	" 21	" 16	.....	.....	Mar. 19
Red-shouldered Hawk.....	" 15	Apr. 27	.....	.....	.....	" 26
Am. Sparrow Hawk.....	" 16	Mar. 17	.....	.....	.....	" 31
Yellow-billed Cuckoo.....	May 12	May 13	May 14	.....	.....	May 18
Black-billed Cuckoo.....	" 12	" 13	" 18	.....	.....	" 15
Belted Kingfisher.....	Mar. 15	Mar. 23	.....	.....	.....	Apr. 7
Yellow-bellied Sapsucker.....	" 19	" 20	Apr. 6	May 16	.....	" 8
Red-headed Woodpecker.....	" 15	Apr. 29	May 3	.....	.....	" 28
Northern Flicker.....	" 13	Mar. 19	Mar. 22	.....	.....	" 5
Whippoor-will.....	May 12	May 13	May 13	.....	.....	May 14
Night-hawk.....	" 12	" 13	.....	.....	.....	" 14
Chimney Swift.....	" 9	" 10	May 12	.....	.....	Apr. 28
Ruby-throated Hummingbird.....	" 13	" 14	" 19	.....	.....	May 14
Kingbird.....	" 7	" 12	" 12	.....	.....	" 3
Crested Flycatcher.....	" 9	" 12	" 19	.....	.....	" 20
Phebe.....	Mar. 16	Mar. 17	Mar. 21	.....	.....	Apr. 8
Olive-sided Flycatcher.....	May 13	May 28	.....	June 8	.....	May 15
Wood Pewee.....	" 12	" 13	May 26	.....	.....	" 12
Yellow-bellied Flycatcher.....	" 13	" 16	.....	June 12	May 24	" 25
Green-crested Flycatcher.....	" 9	" 12	.....	.....	.....	" 20
Alder Flycatcher.....	" 8	" 12	.....	May 26	.....	" 20
Least Flycatcher.....	" 8	" 12	May 12	.....	.....	" 16
Bobolink.....	" 5	" 8	" 9	.....	.....	" 1
Cowbird.....	Mar. 16	Mar. 17	Apr. 1	.....	.....	Apr. 7
Red-winged Blackbird.....	" 15	" 16	Mar. 18	.....	.....	Mar. 17
Meadowlark.....	" 15	" 16	" 17	.....	.....	" 10
Orchard Oriole.....	May 12	May 13	May 18	.....	.....	May 11
Baltimore Oriole.....	Apr. 26	" 8	" 13	.....	.....	Apr. 30
Rusty Blackbird.....	Mar. 16	Mar. 17	.....	Apr. 29	Apr. 24	" 1
Bronzed Grackle.....	" 16	" 17	Mar. 21	.....	.....	" 1
Purple Finch.....	" 30	Apr. 1	Apr. 28	May 14	.....	" 18
Am. Goldfinch.....	" 9	Mar. 11	May 9	.....	.....	.....
Pine Siskin.....	May 12	May 17	" 19	June 12	.....	Apr. 8
Vesper Sparrow.....	Mar. 20	Mar. 23	Mar. 24	.....	.....	" 15
Savanna Sparrow.....	Apr. 18	Apr. 21	Apr. 18	.....	.....	" 15
Grasshopper Sparrow.....	May 5	May 12	.....	.....	.....	May 4
Lark Sparrow.....	Apr. 28	Apr. 29	.....	.....	.....	.....
White-crowned Sparrow.....	May 8	May 9	May 8	May 22	May 20	May 7
White-throated Sparrow.....	Apr. 22	Apr. 23	Apr. 26	" 26	" 17	Apr. 15
Chipping Sparrow.....	" 21	" 23	May 4	.....	.....	" 19
Field Sparrow.....	Mar. 22	Mar. 23	Mar. 22	.....	.....	" 10
Slate-colored Junco.....	" 15	" 17	" 21	May 15	Apr. 30	.....
Song Sparrow.....	" 12	" 16	" 17	.....	.....	Mar. 13
Lincoln's Sparrow.....	" 18	" 21	.....	May 13	.....	.....
Swamp Sparrow.....	" 22	" 23	Mar. 27	.....	.....	Apr. 28
Fox Sparrow.....	" 15	" 17	" 16	Apr. 28	Apr. 17	" 7
Towhee.....	" 16	" 17	" 21	.....	.....	" 14
Rose-breasted Grosbeak.....	May 9	May 12	May 13	.....	.....	May 1
Indigo Bunting.....	" 14	" 15	" 16	.....	.....	" 8

NAME.	First Seen	Next Seen	Became Common	Last Seen	Average Date Last Seen	Average Date First Seen
Dickcissel	May 12	May 13	May 26			May 10
Scarlet Tanager	12	13	14			2
Purple Martin	Apr. 17	Apr. 20	17			Apr. 11
Cliff Swallow	May 9	May 12	17			May 14
Barn Swallow	Apr. 28	1	9			5
Tree Swallow	21	Apr. 27	4			Apr. 24
Bank Swallow	21	28	13			May 13
Bohemian Waxwing	Feb. 1	Feb. 2				
Cedar Waxwing	Mar. 29	Mar. 30	Apr. 1			May 12
Migrant Shrike	16	21	Mar. 23			
Red-eyed Vireo	May 13	May 15	May 18			May 10
Warbling Vireo	4	13	13	June 6		14
Yellow-throated Vireo	13	18	26	1		10
Blue-headed Vireo	12	17	28	8	May 17	18
Black and White Warbler	Apr. 26	5	12	May 30		Apr. 30
Prothonotary Warbler	May 12	13	13	26		
Blue-winged Warbler	13	17	13	30		
Nashville Warbler	13	18	18	June 5		May 3
Tennessee Warbler	14	15	18	3	May 24	9
Cape May Warbler	4	5	13	6	May 17	6
Yellow Warbler	8	9	13	9		1
*Black-throated Blue Warbler	8	9	14	June 12	May 30	6
Myrtle Warbler	Mar. 24	Mar. 26	Apr. 3	June 13	May 18	Apr. 16
**Magnolia Warbler	May 12	May 13	May 12	June 8	15	May 6
Cerulean Warbler	14	15	15	May 25		14
Chestnut-sided Warbler	12	13	May 13	June 9	May 24	6
Bay-breasted Warbler	13	14	13	2	22	5
Black-poll Warbler	13	16	26	9	26	13
Blackburnian Warbler	13	14	15	9	23	3
Black-throated Green Warbler	Apr. 28	Apr. 29	12	May 26	23	1
Pine Warbler	19	May 12	26	26		
Palm Warbler	23	Apr. 28	May 4	28	May 17	Apr. 25
Prairie Warbler	May 8	May 22				
Oven-bird	8	12	May 14			May 3
Grinnell's Water-Thrush	Apr. 28	12	12	May 23	May 21	
Connecticut Warbler	May 13	20	20	June 5	30	
Mourning Warbler	13	17	26	6	24	May 19
Northern Yellow-throat	12	13	15	May 26		1
Yellow-breasted Chat	13	14				16
Wilson's Warbler	12	14	May 19	June 5	May 24	14
Canadian Warbler	12	13	26	8	25	15
Am. Redstart	8	9	13			7
Catbird	8	9	11			
Brown Thrasher	Apr. 26	Apr. 28	5			
House Wren	24	28	5			
Winter Wren	Mar. 22	Mar. 24	Mar. 23	May 11	Apr. 19	
Long-billed Marsh Wren	Apr. 27	Apr. 28	May 2			
Short-billed Marsh Wren	Mar. 12					
Brown Creeper	19	Mar. 22	Mar. 23	May 12	Apr. 30	
Red-breasted Nuthatch	22	26	May 12	9	May 11	
Ruby-crowned Kinglet	21	24	Mar. 29	7	7	
Golden-crowned Kinglet	21	23	May 25	16	16	
Blue-gray Gnatcatcher	Apr. 23	Apr. 28	May 5			
Wood Thrush	May 6	May 12	12			
Willow Thrush	6	12	12	June 6	May 26	
Gray-chested Thrush	12	13	12	6	25	
Olive-backed Thrush	9	12	15	May 30	28	
Hermit Thrush	Mar. 21	Mar. 22	Mar. 22	7	5	
Am. Robin	Feb. 28	11	22			
Bluebird	28	14	15			

*English Lake, Ind. **Reported at Highland Park, Lake Co., on Apr. 11, by J. L. Smith.