

Report of the Spring Migration of 1911

COMPILED BY WITMER STONE

The number of schedules returned to the Club for 1911 was thirty-eight, less than any year since this record was begun. Serious efforts are to be made by the migration committee to materially increase the number of observers for 1912 and the coöperation of all of the present corps is earnestly solicited. We particularly desire more records from within ten or fifteen miles of Philadelphia, notably from Germantown, Chestnut Hill, Media, Overbrook, Olney, Woodbury, Merchantville, etc., and from West Chester, Norristown, Conshohocken, Mt. Holly, etc. Names of capable observers should be sent to Mr. Wm. E. Roberts, Chairman D. V. O. C. Migration Committee, Academy of Natural Sciences, Logan Square, Phila., who will supply blank schedules and answer any queries in regard to the work.

The Club has now preserved one of the most important records of bird migration ever brought together in this country, and every effort should be made, not only to prevent any individual record from lapsing, but to secure additional observers to supplement and continue the work that our older observers have so well begun.

The observers for 1911 were as follows:

New Jersey.

Cape May, H. Walker Hand.
Vineland, Mrs. Alice K. Prince.
Downstown, Wm. W. Fair.
Yardville, Rachel E. Allinson.
Bordentown, Minnie V. Flynn.
Three miles S. E. of Trenton, Richard M. Abbott.
Beverly, J. Fletcher Street.
Rancocas, Frances B. Stokes and Emily Haines.
Moorestown, Anna A. Mickle.
Moorestown, Dr. Samuel Haines and M. Albert Linton.
Haddonfield, S. Earle Riddle.
Haddonfield, Mr. and Mrs. Robert T. Moore.
Camden, Julian K. Potter.

Pennsylvania.

Kennett Square, Charles J. Pennock.
 Concordville, Katherine R. and Elizabeth P. Styer.
 West Chester, Isaac G. Roberts.
 Westtown, George H. Hallett Jr.
 Swarthmore, Mary S. Pusey.
 Lansdowne, Friends School.
 Lansdowne, Louisa M. Jacob.
 Lansdowne, John D. Carter.
 Lansdowne, Edwin L. Nicholson.
 Media, Lydia G. Allen.
 Ardmore, Wm. L. Baily.
 Haverford, Wm. J. Serrill.
 Wayne, Mary K. Baker.
 Wayne, Leonard S. Pearson.
 Bryn Mawr, Emily H. Thomas.
 West Philadelphia, Leonard S. Pearson.
 West Philadelphia, Thomas R. Hill.
 Oak Lane, Samuel H. Barker.
 Holmesburg, Henry W. Fowler.
 Frankford, Richard F. Miller.
 George School, W. W. Swayne.
 Collegeville, Henry Fox.
 Doylestown, C. Russell Mason.
 Trevorton, Alexander Patman.
 Lopez, Otto Behr.

The spring migration of 1911 was characterized by several well-marked waves. Winter practically closed with the snow storm of February 20th, which brought with it flocks of Horned Larks, which were reported during the three following days at various stations. Then came clear weather with a steady rise of temperature, culminating with a maximum of 63° on the 26th, which brought a widespread movement of Grackles, Bluebirds and Robins. Another marked rise in temperature, culminating on March 10, marked the first considerable arrival of Fox Sparrows, Red-winged Blackbirds and Flickers. Another wave, March 26-27, brought Phoebes, Cowbirds, Chipping and Field Sparrows, and a decided and sudden increase in temperature,

April 6 and 7, brought Hermit Thrushes, Ruby-crowned Knights and Vesper Sparrows. April was, however, for the most part cloudy with much rain until the last few days, when a rise in temperature, culminating on May 1st, brought hosts of migrants which had been held back by unfavorable conditions. May migration was concentrated on the 1st, 7th, 10th and 16th, and, as is usual when the movement is congested, many Cape May Warblers and other rarities were observed.

Considering the records in the tables for Philadelphia and vicinity we find that 19 records of first arrivals fell on February 26-28, 20 on March 11-13 and 23 on March 26, the number for other days being from one to four. In April there were 33 recorded, April 7-9, while other days varied from one to seven, until April 23, when the rise in temperature began, and we find 13 first-arrival records for April 23; for April 24, 4; April 25, 6; April 26, 21; April 27, 14; April 28, 15; April 29, 13, and April 30, 44. This shows clearly how the movement was concentrated on a few days.

It has been customary during the last few years to compare the dates of bulk arrival, computed, as explained before,¹ with the average of previous years to show how many days early or late each species may be. By comparing several years in this manner it is interesting to see how birds which usually arrive together are affected in the same way and vary from the average by nearly the same number of days. This may be seen by studying the following table. Notice that the earliest migrants were all notably early (+) in 1906 and 1909 and notably late (-) in 1907, while in other years they came closer to normal, especially in 1908. Notice also the different character of the migration as the spring advanced, i. e. in 1906 the earliest migrants were early, those coming about the end of March were notably late, those at the end of April almost exactly normal and the May migrants all early. In 1907 conditions were exactly reversed, earliest migrants late, March migrants early, April migrants normal (as in 1906) and May migrants all late.

¹i. e., by dropping the last quarter of the records in the Philadelphia circle and selecting the date on which the species had reached one-half of the remaining stations. The disregarded records are considered as probably not actual dates of arrival.

		Average for ten years. 1906 1907 1908 1909 1910 1911						
Bluebird	Feb. 27.	+ 9	-12	-1	+ 9	+3	-1	
Purple Grackle	" 28.	+ 6	- 9	+1	+13	+5	+2	
Robin	Mar. 1.	+ 5	- 6	0	+11	+1	+4	
Meadowlark	" 7.	+10	- 9	-3	+ 3	+3	+2	
Fox Sparrow.	" 7.	+14	- 8	-3	+14	+1	-4	
Phoebe.	Mar. 21.	-13	+4	+7	0	+1	-1	
Cowbird	" 24.	- 5	+2	+8	-3	-1	-2	
Vesper Sparrow.	" 30.	- 9	+6	+7	-3	+5	-3	
Chipping Sparrow	" 31.	- 7	+3	+3	-7	+3	-7	
Maryland Yellow-								
throat	April 28.	- 1	0	+3	+ 2	+1	-2	
Grasshopper Sparrow	" 29.	0	-1	+5	+ 4	-8	-7	
Yellow Warbler.	" 30.	0	0	+4	-2	0	0	
Catbird.	" 30.	+ 1	-1	+5	-1	-3	-2	
Ovenbird	" 30.	0	0	+4	-1	0	-2	
Wood Thrush	" 30.	+ 1	-1	+4	-1	-4	0	
Redstart	May. 4.	+ 3	-4	+3	0	-3		
Black-throated Bl. Wbl.	" 4.	+ 1	-1	+2	0	-5	-2	
Parula Warbler	" 4.	+ 1	-4	+2	0	-3	+1	
Crested Flycatcher	" 4.	+ 2	-4	+5	-2	-1	+1	
Kingbird	" 5.	+ 5	0	+3	-1	-5	-2	
Baltimore Oriole	" 5.	+ 2	-5	+4	-1	-3	-2	
Scarlet Tanager	" 6.	+ 3	-4	+4	-1	-6	-4	
Blue-winged Wbl.	" 6.	+ 3	-5	+4	0	0	-5	
Chestnut-sided Wbl.	" 7.	+ 3	-3	+4	0	-7	0	
Red-eyed Vireo	" 8.	+ 4	-3	0	+ 1	-4	-3	
Chat	" 8.	+ 3	-2	-1	-1	-5	-3	
Rose-breasted Grosbeak.	" 8.	+ 4	-3	0	0	-1	-3	
Indigobird	" 8.	+ 3	-2	-3	0	-4	-4	
Magnolia Warbler.	" 8.	+ 5	-3	-2	+ 1	-3	+1	
Bobolink	" 9.	+ 6	-2	+1	0	-6	-4	
Olive-backed Thrush	" 9.	+ 3	-2	-2	-1	-5	+3	
Hummingbird	" 10.	- 2	-2	-3	+ 1	-3	-3	
Wood Pewee.	" 11.	+ 5	-3	-2	-1	-8	-1	
Yellow-billed Cuckoo	" 11.	+ 5	0	-2	-1	-4	-3	
Black-poll Warbler.	" 12.	+ 5	-5	-2	+ 1	-7	+1	
Canada Warbler.	" 12.	0	0	-1	+ 1	-3	+1	

In computing the averages for the ten years it is interesting to see how closely the average of "bulk arrivals" reckoned as explained above, coincide with the average of first arrivals at stations where we have had a number of accurate observers. Considering nine common species which are most likely to be seen as soon as they arrive and which are least likely to be misidentified, we have tabulated the arrivals at ten stations as reported by twenty-two observers for from nine to eleven years, 1901-1911. The detailed tabulation for the Brown Thrasher is as follows:

BROWN THRASHER
1901-1911

<i>Beverly and Rancocas.</i>	<i>Moorestown.</i>	<i>Swarthmore.</i>	<i>Lansdowne.</i>	<i>Media.</i>
—	April 22	April 28	—	—
April 28	" 22	" 22	April 24	—
" 24	" 5	" 20	" 29	April 29
" 17	" 17	" 24	" 11	" 23
" 22	" 22	" 24	" 22	" 14
" 22	May 1	" 27	" 29	" 29
" 26	April 28	" 27	" 26	" 26
" 12	" 14	" 17	" 19	" 19
" 18	" 18	" 15	" 22	" 18
" 18	" 22	" 14	" 19	" 15
" 26	" 28	" 27	" 14	" 24
—	—	—	—	—
April 21	April 20	April 22	April 22	April 22
<i>Ardmore and Haverford.</i>	<i>Westtown.</i>	<i>Kennett Square.</i>	<i>Concord- ville.</i>	<i>George School.</i>
April 26	—	—	—	—
" 24	April 28	April 27	April 25	April 22
May 3	" 19	" 27	" 20	May 3
April 15	" 19	" 25	" 18	April 24
" 14	" 11	" 27	" 11	" 22
" 28	" 25	" 15	" 19	" 16
" 26	" 26	" 26	" 26	" 26
" 10	" —	" 20	" 13	" 19
" 17	" 19	" 28	" 16	" 24
" 21	" 24	" 17	" 19	" —
" 28	" 24	" 19	" 19	" 27
—	—	—	—	—
April 22	April 22	April 23	April 19	April 24

Averaging these results we get as our average for this vicinity, April 22, while the average of computed bulk-arrival dates for ten years is April 23. The average date of arrival at these ten stations for the nine species or birds selected is as follows, while at the bottom is given the resulting average arrival date for this vicinity and the average of the bulk-arrival dates computed for each year.

	Purple Grackle.	Phoebe.	Brown Thrasher.	Chimney Swift.	Blk. and Wht. Warbler.	Maryland Yellow-throat.	Catbird.	Ovenbird.	Wood Thrush.
Beverly and R ¹ .	F. 25	M. 26	A. 21	A. 23	A. 26	A. 26	A. 29	M. 1	M. 2
Moorestown . . .	23	26	21	22	22	26	30	1	M. 3
Swarthmore . . .	27	17	22	22	27	28	28	A. 29	A. 30
Lansdowne . . .	25	19	22	24	25	26	29	29	28
Media	29	17	22	21	27	23	29	30	24
Ardmore and H ²	29	20	22	23	27	30	M. 1	29	30
Westtown. . . .	24	18	22	23	27	29	A. 29	29	30
Kennett Square.	23	22	23	21	M. 2	28	30	M. 1	M. 4
Concordville. .	21	16	19	22	A. 30	26	28	A. 28	A. 30
George School .	21	21	24	20	25	29	30	28	M. 1
Average	Feb. 25	Mar. 20	Apr. 22	Apr. 22	Apr. 27	Apr. 27	Apr. 29	Apr. 29	Apr. 30
"Bulk Arrivals" ³	Feb. 28	Mar. 21	Apr. 23	Apr. 22	Apr. 26	Apr. 28	Apr. 30	Apr. 30	Apr. 30

¹ Rancocas.

² Haverford.

³ Average of "Bulk Arrivals."

The case of the Purple Grackle is undoubtedly influenced by the early stragglers which have wintered not far away, and which often appear before the regular migratory flight and make the average of "first arrival" at many stations earlier than it really should be. In the other species the dates are the same in three

cases and differ by one day in the other five, which shows that by the method of computing "bulk arrival" we are getting remarkably accurate results. If we could only induce observers clustered around some other large city, some distance from Philadelphia, like Boston or Washington, to keep similar records and tabulate them in the same manner, then we should be able to estimate the progress of the migration and the actual speed at which the birds travel. The data heretofore used is not sufficiently free from error to warrant accurate results. One has but to compare the ten-year averages in the last table for any species at ten stations where from two to four careful observers have kept the records, to see at once what variation they present at stations only a few miles apart, while stations like George School and Concordville, forty miles apart, along the line of the Delaware Valley, and twenty-five miles different in latitude, show no constant difference, five species averaging earlier at the more southern station, two at the more northern and two the same.¹

¹Cf. for discussion of this matter Stone, Proc. Acad. Nat. Sci., 1908, pp. 128-156.

NAME.	Beverly, N. J.	Hancock, N. J.	Moorestown, N. J.	Haddonfield, N. J.	Camden, N. J.	Media, Pa.	Swarthmore, Pa.	Lansdowne, Pa.	Havertford and Ardmore, Pa.	Bryn Mawr, Pa.	Wayne, Pa.	West Philadelphia.	Holmesburg, Phila.	Oak Lane.	Frankford, Phila.	Bulk Arrival Phila., 1911.
Wood Pewee	May 17	May 11	May 6	May 2	May 6	May 14	May 19	May 16	May 12	May 5	May 12	May 17	. . . . .	May 7	May 12	May 12
Acadian Flycatcher	May 2	May 4	May 4	May 4	May 4	May 4	May 6	May 12	May 6	May 6	May 6	May 7	. . . . .	May 28	May 12	May 12
Least Flycatcher	May 2	May 4	May 4	May 4	May 4	May 4	May 6	May 12	May 6	May 6	May 6	May 7	. . . . .	May 28	May 5	May 3
Bobolink	May 19	May 14	May 10	May 13	May 14	Apr. 11	May 13	May 16	May 3	May 3	May 3	May 2	. . . . .	May 28	May 13	May 13
Cowbird	Mar. 19	May 14	May 10	May 13	May 14	Apr. 11	May 13	Mar. 26	Mar. 26	Mar. 26	Mar. 26	Apr. 3	. . . . .	May 4	May 13	May 13
Red-winged Blackbird	Feb. 26	Mar. 10	Mar. 10	Feb. 26	Feb. 19	Mar. 21	Mar. 20	Mar. 26	Mar. 12	Mar. 28	Mar. 26	Apr. 9	Mar. 26	Mar. 22	Mar. 27	Mar. 10
Meadowlark	Res.	Res.	Res.	Res.	Res.	Res.	Res.	Res.	Res.	Res.	Res.	Res.	Res.	Res.	Res.	Res.
Orchard Oriole	May 2	May 2	May 5	May 14	May 14	May 4	May 7	May 6	May 11	May 11	May 14	Mar. 11	May 14	May 7	May 4	May 7
Baltimore Oriole	May 2	May 3	May 11	May 14	May 14	May 4	May 7	May 6	May 10	May 10	May 14	Mar. 11	May 16	May 11	May 4	May 7
Rusty Blackbird	May 2	May 3	May 11	May 14	May 14	May 4	May 7	May 6	May 10	May 10	May 14	Mar. 11	May 16	May 11	May 4	May 7
Purple Grackle	Jan. 19	Feb. 2	Feb. 5	Feb. 19	Mar. 5	Feb. 28	Feb. 26	Feb. 26	Feb. 26	Feb. 20	Feb. 26	Feb. 27	Feb. 26	Feb. 26	Feb. 23	Feb. 26
Vesper Sparrow	Apr. 9	Apr. 3	Apr. 9	Apr. 18	Feb. 22	Apr. 26	Apr. 27	Apr. 27	Apr. 27	Apr. 27	Apr. 27	Apr. 27	Apr. 27	Apr. 27	Apr. 27	Apr. 27
Savannah Sparrow	Apr. 30	May 6	May 6	Apr. 23	Apr. 12	Apr. 12	Apr. 12	Apr. 12	Apr. 12	Apr. 12	Apr. 12	Apr. 12	Apr. 12	Apr. 12	Apr. 12	Apr. 12
Grasshopper Sparrow	May 6	May 6	May 6	Apr. 23	Apr. 12	Apr. 12	Apr. 12	Apr. 12	Apr. 12	Apr. 12	Apr. 12	Apr. 12	Apr. 12	Apr. 12	Apr. 12	Apr. 12
Chipping Sparrow	Apr. 8	Apr. 4	Mar. 26	Mar. 19	Apr. 9	Apr. 10	Apr. 10	Apr. 10	Apr. 10	Apr. 10	Apr. 10	Apr. 10	Apr. 10	Apr. 10	Apr. 10	Apr. 10
Field Sparrow	Mar. 18	Mar. 26	Apr. 2	Mar. 19	Jan. 1	Apr. 3	Apr. 3	Apr. 3	Apr. 3	Apr. 3	Apr. 3	Apr. 3	Apr. 3	Apr. 3	Apr. 3	Apr. 3
Swamp Sparrow	Apr. 21	May 10	Apr. 30	Apr. 17	Jan. 30	Apr. 25	Apr. 25	Apr. 25	Apr. 25	Apr. 25	Apr. 25	Apr. 25	Apr. 25	Apr. 25	Apr. 25	Apr. 25
Fox Sparrow	Mar. 19	Mar. 26	Mar. 26	Mar. 25	Jan. 1	Mar. 11	Mar. 11	Mar. 11	Mar. 11	Mar. 11	Mar. 11	Mar. 11	Mar. 11	Mar. 11	Mar. 11	Mar. 11
Chewink	Apr. 16	Apr. 25	Apr. 30	Apr. 17	Apr. 22	Apr. 25	May 2	Apr. 11	Apr. 23	Mar. 28	Apr. 18	Apr. 11	Apr. 9	Apr. 28	Apr. 10	Apr. 18
Rose-breasted Grosbeak	May 12	May 11	May 11	May 6	May 6	May 6	May 6	May 6	May 6	May 6	May 6	May 6	May 6	May 6	May 6	May 6
Indigobird	May 19	May 13	May 12	May 12	May 12	May 11	May 11	May 11	May 11	May 11	May 11	May 11	May 11	May 11	May 11	May 11
Scarlet Tanager	May 13	May 11	May 11	May 7	May 4	May 7	May 6	May 3	May 3	May 11	May 11	May 15	May 15	May 21	May 12	May 12
Purple Martin	May 11	Apr. 5	Apr. 5	Apr. 11	June 3	Apr. 11	Apr. 11	Apr. 11	Apr. 11	Apr. 11	Apr. 21	Apr. 7	Apr. 7	Apr. 21	Apr. 21	Apr. 22

NAME.	Beverly, N. J.	Ranococas, N. J.	Moorestown, N. J.	Haddonfield, N. J.	Camden, N. J.	Media, Pa.	Swarthmore, Pa.	Lansdowne, Pa.	Haverford and Ardmore, Pa.	Bryn Mawr, Pa.	Wayne, Pa.	West Philada.	Holmesburg, Phila.	Oak Lane.	Frankford, Phila.	Bulk Arrival Phila., 1911.
Cliff Swallow	May 11	Apr. 26	Apr. 26	May 7	May 7	Apr. 7	Apr. 7	Apr. 7	Apr. 8	Apr. 22	Apr. 18	May 15	Apr. 12	Apr. 12	Apr. 12	Apr. 23
Barn Swallow	Apr. 22	May 3	Apr. 26	Apr. 22	Apr. 22	May 14	Apr. 22	Apr. 8	Apr. 8	Apr. 22	Apr. 18	Apr. 28	Apr. 26	Apr. 26	Apr. 26	Apr. 22
Tree Swallow	Apr. 27	Apr. 27	Apr. 26	Apr. 29	Apr. 29	Apr. 21	Apr. 24	Apr. 24	Apr. 29	Apr. 29	May 14	Apr. 29	Apr. 26	Apr. 26	Apr. 26	Apr. 22
Bank Swallow	Apr. 27	Apr. 27	Apr. 26	Apr. 29	Apr. 29	Apr. 21	Apr. 24	Apr. 24	Apr. 29	Apr. 29	Apr. 30	Apr. 30	Apr. 11	Apr. 11	Apr. 11	Apr. 23
Rough-winged Swallow	Mar. 26	May 11	May 5	Apr. 26	May 30	Apr. 21	Apr. 24	Apr. 24	Apr. 29	Apr. 29	Apr. 30	Apr. 30	Apr. 11	Apr. 11	Apr. 11	Apr. 23
Cedarbird	May 4	May 11	May 5	Apr. 26	May 30	Apr. 21	Apr. 24	Apr. 24	Apr. 29	Apr. 29	Apr. 30	Apr. 30	Apr. 11	Apr. 11	Apr. 11	Apr. 23
Red-eyed Vireo	May 4	May 11	May 5	Apr. 26	May 30	Apr. 21	Apr. 24	Apr. 24	Apr. 29	Apr. 29	Apr. 30	Apr. 30	Apr. 11	Apr. 11	Apr. 11	Apr. 23
Warbling Vireo	May 4	May 11	May 5	Apr. 26	May 30	Apr. 21	Apr. 24	Apr. 24	Apr. 29	Apr. 29	Apr. 30	Apr. 30	Apr. 11	Apr. 11	Apr. 11	Apr. 23
Yellow-throated Vireo	May 14	May 7	Apr. 29	May 21	May 30	May 13	May 14	May 14	May 14	May 14	May 13	May 17	May 16	May 16	May 16	May 13
Solitary Vireo	May 14	May 7	Apr. 29	May 21	May 30	May 13	May 14	May 14	May 14	May 14	May 13	May 17	May 16	May 16	May 16	May 13
White-eyed Vireo	Apr. 30	May 4	May 5	Apr. 23	May 1	May 12	May 2	May 2	May 6	May 6	May 7	May 7	Apr. 30	Apr. 30	Apr. 30	May 4
Black and White Warbler	Apr. 28	Apr. 29	Apr. 26	Apr. 27	Apr. 30	Apr. 27	May 2	May 1	Apr. 26	May 1	Apr. 30	Apr. 28	Apr. 30	Apr. 30	May 5	Apr. 30
Worm-eating Warbler	May 9	May 9	May 9	May 6	May 11	May 11	May 2	May 1	Apr. 26	May 1	Apr. 30	Apr. 28	Apr. 30	Apr. 30	May 5	Apr. 30
Blue-winged Warbler	May 11	May 11	May 11	May 17	May 11	May 11	May 2	May 1	Apr. 26	May 1	Apr. 30	Apr. 28	Apr. 30	Apr. 30	May 5	Apr. 30
Parula Warbler	Apr. 30	May 2	Apr. 30	May 3	Apr. 30	May 11	May 2	May 1	Apr. 26	May 1	Apr. 30	Apr. 28	Apr. 30	Apr. 30	May 5	Apr. 30
Yellow Warbler	Apr. 27	Apr. 28	Apr. 28	Apr. 30	Apr. 28	May 14	May 2	May 1	Apr. 26	May 1	Apr. 30	Apr. 28	Apr. 30	Apr. 30	May 5	Apr. 30
Black-throated Blue Warbler	May 6	May 10	May 5	May 14	May 7	May 7	May 2	May 1	Apr. 26	May 1	Apr. 30	Apr. 28	Apr. 30	Apr. 30	May 5	Apr. 30
Myrtle Warbler	Apr. 27	May 1	Apr. 26	Apr. 28	Apr. 14	May 7	May 2	May 1	Apr. 26	May 1	Apr. 30	Apr. 28	Apr. 30	Apr. 30	May 5	Apr. 30
Magnolia Warbler	May 6	May 11	May 6	May 14	May 7	May 7	May 2	May 1	Apr. 26	May 1	Apr. 30	Apr. 28	Apr. 30	Apr. 30	May 5	Apr. 30
Chestnut-sided Warbler	May 11	May 11	May 11	May 14	May 7	May 7	May 2	May 1	Apr. 26	May 1	Apr. 30	Apr. 28	Apr. 30	Apr. 30	May 5	Apr. 30
Black-poll Warbler	May 6	May 11	May 6	May 14	May 7	May 7	May 2	May 1	Apr. 26	May 1	Apr. 30	Apr. 28	Apr. 30	Apr. 30	May 5	Apr. 30
Blackburnian Warbler	May 6	May 11	May 6	May 14	May 7	May 7	May 2	May 1	Apr. 26	May 1	Apr. 30	Apr. 28	Apr. 30	Apr. 30	May 5	Apr. 30
Black-throated Green Warbler	May 6	May 10	May 6	May 14	May 7	May 7	May 2	May 1	Apr. 26	May 1	Apr. 30	Apr. 28	Apr. 30	Apr. 30	May 5	Apr. 30

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Pine Warbler	Apr. 27	Apr. 26	Apr. 30	Apr. 30	Apr. 26	Apr. 26	Apr. 7	Apr. 7	Apr. 16	Apr. 22	Apr. 18	Apr. 28	Apr. 28	Apr. 8	Apr. 8	Apr. 18
Yellow Palm Warbler	Apr. 30	Apr. 26	Apr. 28	Apr. 28	Apr. 22	Apr. 26	Apr. 7	Apr. 7	Apr. 16	Apr. 22	Apr. 18	Apr. 28	Apr. 28	Apr. 8	Apr. 8	Apr. 18
Prairie Warbler	May 6	May 11	Apr. 27	Apr. 27	Apr. 30	May 2	May 2	May 2	May 3	May 1	Apr. 30	May 1	May 1	Mar. 6	May 9	May 2
Ovenbird	May 6	May 10	Apr. 30	Apr. 30	May 1	May 2	May 2	May 2	May 3	May 1	Apr. 30	May 6	May 6	May 7	May 7	May 7
Water Thrush	May 6	May 14	May 6	May 6	May 7	May 14	May 14	May 14	Apr. 26	May 1	May 7	May 20	May 20	May 7	May 9	May 7
Kentucky Warbler	Apr. 30	Apr. 28	Apr. 30	Apr. 30	Apr. 26	Apr. 29	May 2	May 2	May 3	May 1	Apr. 30	May 2	Apr. 30	May 7	May 9	May 7
Maryland Yellow-throat	May 17	May 13	May 14	May 7	May 14	May 14	May 2	May 2	May 3	May 1	Apr. 30	May 2	Apr. 30	May 7	May 9	May 7
Chat	May 17	May 13	May 14	May 7	May 14	May 14	May 2	May 2	May 3	May 1	Apr. 30	May 2	Apr. 30	May 7	May 9	May 7
Canada Warbler	May 7	May 6	Apr. 30	Apr. 30	Apr. 29	May 7	May 2	May 2	May 3	May 1	Apr. 30	May 2	Apr. 30	May 7	May 9	May 7
Redstart	Apr. 30	May 1	May 5	Apr. 30	Apr. 29	May 2	May 2	May 2	May 3	May 1	Apr. 30	May 2	Apr. 30	May 7	May 9	May 7
Catbird	Apr. 27	Apr. 26	Apr. 17	Apr. 17	Apr. 26	Apr. 24	Apr. 27	Apr. 14	Apr. 28	Apr. 22	Apr. 20	Apr. 17	Apr. 30	May 1	Apr. 23	Apr. 26
Brown Thrasher	Apr. 27	Apr. 24	Apr. 30	Apr. 17	Apr. 26	Apr. 23	Apr. 30	Apr. 28	Apr. 28	Apr. 27	Apr. 30	Apr. 20	Apr. 30	May 1	Apr. 23	Apr. 26
House Wren	May 21	Apr. 19	Apr. 17	Apr. 17	May 14	Apr. 25	Apr. 30	Apr. 24	Apr. 16	Apr. 8	Apr. 18	Apr. 9	Apr. 9	May 5	May 5	Apr. 26
Long-bill'd Marsh Wren	Apr. 23	Apr. 19	Apr. 17	Apr. 17	May 14	Apr. 25	Apr. 30	Apr. 24	Apr. 16	Apr. 8	Apr. 18	Apr. 9	Apr. 9	May 5	May 5	Apr. 26
Ruby-crowned Kinglet	Apr. 30	May 11	May 5	Apr. 30	May 4	Apr. 29	Apr. 30	Apr. 30	Apr. 30	May 3	Apr. 30	May 1	May 1	May 5	Apr. 7	Apr. 16
Wood Thrush	May 7	May 11	May 2	Apr. 30	May 6	May 3	Apr. 30	Apr. 30	Apr. 30	May 3	Apr. 30	May 1	May 1	May 5	Apr. 7	Apr. 16
Wilson's Thrush	May 7	May 11	May 2	Apr. 30	May 6	May 3	Apr. 30	Apr. 30	Apr. 30	May 3	Apr. 30	May 1	May 1	May 5	Apr. 7	Apr. 16
Gray-cheeked Thrush	May 7	May 11	May 2	Apr. 30	May 6	May 3	Apr. 30	Apr. 30	Apr. 30	May 3	Apr. 30	May 1	May 1	May 5	Apr. 7	Apr. 16
Olive-backed Thrush	Apr. 9	Apr. 11	Apr. 9	May 2	Apr. 9	Apr. 23	Apr. 30	Apr. 30	Apr. 30	May 3	Apr. 30	May 1	May 1	May 5	Apr. 7	Apr. 16
Hermit Thrush	Apr. 9	Apr. 11	Apr. 9	May 2	Apr. 9	Apr. 23	Apr. 30	Apr. 30	Apr. 30	May 3	Apr. 30	May 1	May 1	May 5	Apr. 7	Apr. 16
Robin	Feb. 22	Feb. 22	Feb. 28	Feb. 26	Mar. 5	Feb. 27	Feb. 25	Feb. 26	Feb. 26	Feb. 20	Mar. 5	Mar. 12	Mar. 9	Apr. 9	Apr. 6	Apr. 9
Bluebird	Res.	Res.	Res.	Feb. 26	Feb. 25	Res.	Feb. 26	Feb. 26	Feb. 25	Feb. 20	Feb. 27	Feb. 26	Mar. 9	Apr. 9	Apr. 6	Apr. 9

NAMES.	Cape May, N. J. E. 13; S. 72.	Vineland, N. J. E. 7; S. 32.	Downstown, N. J. E. 11; S. 28.	Kennett Square, Pa. W. 30; S. 8.	Concordville, Pa. W. 20; S. 5.	Westtown, Pa. W. 21; S. 2.	West Chester, Pa. W. 24; N. 0.	Bordentown, N. J. E. 25; N. 13.	Yardville, N. J. E. 25; N. 15.	3 Miles Southeast Trenton, N. J. E. 23; N. 16.	George School, Pa. E. 11; N. 18.	Doylestown, Pa. E. 1; N. 26.	Collegeville, Pa. W. 16; N. 16.	Trevorton, Pa. W. 81; N. 58.	Lopez, Pa. W. 60; N. 103.
Flicker.....	Mar. 23	Res.	Mar. 29	.....	Mar. 25	Mar. 22	Mar. 26	Mar. 15	.....	.....	Mar. 31	Res.	Mar. 30	Mar. 29	Apr. 23
Whip-poor-will.....	Apr. 27	Apr. 10	Apr. 24	.....	.....	.....	.....	.....	.....	May 1	.....	May 11	.....	May 4	May 1
Nighthawk.....	.....	May 12	.....	.....	.....	.....	Apr. 14	Apr. 2	.....	May 14	.....	May 20	May 10	May 9	.....
Chimney Swift.....	Apr. 27	Apr. 30	Apr. 30	Apr. 26	Apr. 26	Apr. 26	Apr. 26	Apr. 17	Apr. 30	Apr. 27	Apr. 20	Apr. 27	Apr. 26	May 2	May 20
Hummingbird.....	Apr. 30	May 11	.....	May 11	.....	May 12	May 16	May 5	May 20	May 27	.....	May 13	.....	May 8	.....
Kingbird.....	Apr. 24	May 1	May 6	May 11	Apr. 26	May 6	May 5	May 1	May 14	May 5	May 14	May 11	.....	May 16	May 20
Great-crested Flycatcher.....	Apr. 28	May 2	May 4	.....	May 6	May 2	May 7	May 2	May 11	May 6	May 9	May 14	May 8	.....	.....
Phoebe.....	.....	Apr. 14	.....	Mar. 21	Mar. 26	Mar. 19	.....	Mar. 28	Mar. 11	Mar. 22	Mar. 12	Mar. 22	Mar. 30	Mar. 30	Apr. 11
Bobolink.....	.....	May 28	.....	May 12	May 3	May 7	May 3	.....	.....	May 7	May 6	May 13	.....	Apr. 21	May 11
Cowbird.....	Res.	.....	.....	.....	Mar. 1	Mar. 18	Mar. 29	Mar. 10	.....	.....	Mar. 27	Mar. 12	Apr. 18	May 1	.....
Red-winged Blackbird.....	Feb. 27	Mar. 6	Mar. 12	Feb. 27	Mar. 1	Mar. 15	Feb. 26	Mar. 12	Mar. 10	Feb. 27	Mar. 12	Feb. 27	Mar. 24	Mar. 11	Mar. 18
Baltimore Oriole.....	May 2	May 4	May 12	May 2	May 3	May 2	May 3	May 5	May 14	May 9	May 7	May 2	May 4	May 15	.....
Purple Grackle.....	Feb. 27	Mar. 6	.....	Feb. 25	Feb. 19	Feb. 27	Feb. 26	Feb. 26	Feb. 26	Feb. 26	Feb. 26	Feb. 26	Feb. 27	.....	.....
Chipping Sparrow.....	Mar. 30	Mar. 28	Apr. 7	Apr. 11	Apr. 7	Apr. 7	Mar. 27	Apr. 1	Mar. 23	Apr. 12	Apr. 10	Apr. 15	Apr. 12	Apr. 3	May 3
Chewink.....	Mar. 11	Apr. 23	Apr. 23	Apr. 27	Apr. 29	Apr. 26	Apr. 16	Apr. 28	Apr. 26	Apr. 20	Apr. 20	Apr. 15	Apr. 18	.....	May 9
Indigobird.....	May 5	May 4	.....	.....	May 11	May 5	May 7	May 11	May 19	May 24	.....	May 13	.....	.....	.....
Scarlet Tanager.....	.....	May 11	May 21	May 11	May 3	May 2	May 10	May 1	May 14	May 18	May 11	May 13	.....	.....	May 13
Purple Martin.....	Apr. 6	Apr. 5	Apr. 27	Apr. 18	Apr. 18	May 13	Apr. 5	Apr. 11	.....	.....	Apr. 8	.....	.....	.....	.....
Barn Swallow.....	Apr. 27	Apr. 16	May 15	Apr. 17	Apr. 22	Apr. 26	Apr. 25	Apr. 24	Apr. 23	Apr. 21	Apr. 30	Apr. 17	May 3	May 2	Apr. 26
Red-eyed Vireo.....	.....	May 4	May 9	May 12	May 11	May 5	May 10	Apr. 30	.....	.....	May 11	May 13	May 8	.....	May 1
Black and White Warbler.....	Apr. 26	May 1	Apr. 30	.....	May 3	Apr. 27	Apr. 30	May 1	May 10	Apr. 24	May 7	Apr. 27	.....	.....	Apr. 29
Chestnut-sided Warbler.....	.....	.....	.....	.....	May 5	May 6	.....	May 2	May 16	.....	.....	May 13	.....	.....	May 11
Ovenbird.....	.....	.....	May 9	May 5	May 1	May 1	Apr. 30	Apr. 28	May 10	.....	Apr. 29	May 13	.....	.....	May 9
Maryland Yellow-throat.....	Apr. 27	May 1	Apr. 30	May 2	Apr. 30	May 1	May 2	Apr. 30	Apr. 29	May 6	May 11	May 13	.....	.....	.....
Chat.....	May 5	May 2	May 21	.....	May 5	May 7	May 14	May 2	May 19	May 7	.....	.....	.....	.....	.....
Catbird.....	Apr. 24	May 1	May 4	.....	May 2	May 1	May 2	Apr. 30	May 3	May 4	May 13	May 2	May 10	May 7	.....
Brown Thrasher.....	Apr. 27	Apr. 4	Apr. 24	Apr. 19	Apr. 19	Apr. 24	Apr. 27	Apr. 28	Apr. 25	Apr. 26	Apr. 28	Apr. 27	May 3	May 1	May 7
House Wren.....	.....	May 1	Apr. 29	Apr. 28	Apr. 21	Apr. 26	Apr. 26	Apr. 26	.....	Apr. 26	Apr. 28	Apr. 29	May 2	May 2	May 5
Wood Thrush.....	Apr. 30	May 1	May 14	May 5	May 3	May 1	May 3	May 1	May 5	May 2	May 7	May 7	May 9	May 13	Apr. 27
Hermit Thrush.....	.....	Apr. 13	.....	Apr. 17	Apr. 21	Apr. 25	Apr. 6	Apr. 30	.....	May 10	.....	Apr. 15	.....	.....	Apr. 12
Robin.....	Res.	Res.	Mar. 12	Feb. 26	Mar. 1	Feb. 26	Feb. 26	Mar. 2	Mar. 10	Mar. 4	Mar. 11	Mar. 9	Mar. 1	Mar. 12	Mar. 14
Bluebird.....	Res.	Res.	Feb. 27	Feb. 26	Feb. 19	Feb. 27	Feb. 26	Res.	Res.	Res.	Mar. 5	Feb. 28	Feb. 27	Mar. 18	Mar. 11

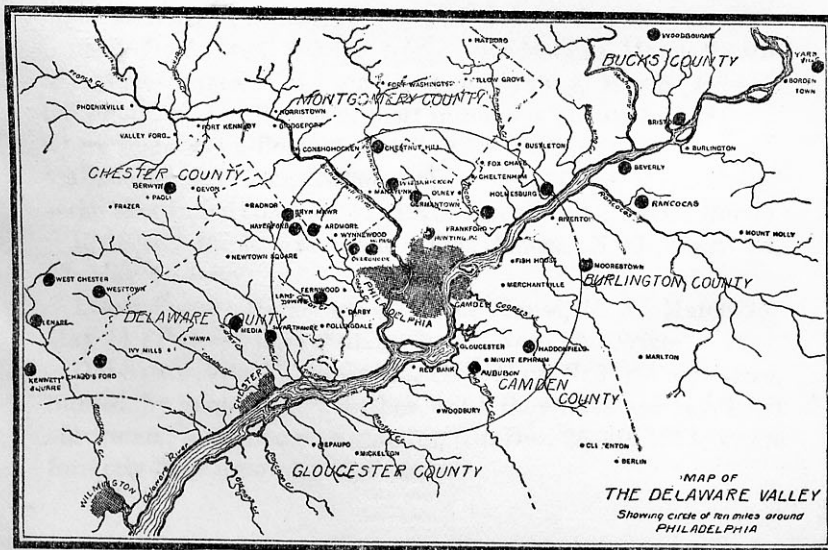


TABLE II.
SPRING MIGRATION, 1911.

EARLIEST DATES OF ARRIVAL OF THIRTY-TWO SPECIES AT FIFTEEN STATIONS OUTSIDE THE PHILADELPHIA CIRCLE.

*List of Other Species Reported by Observers During 1911, and
Additional Notes on Regular Migrants. Winter Notes
Refer to Winter of 1910-11, and Localities are
in Pennsylvania, unless Otherwise
Indicated.*

Horned Grebe, *Colymbus auritus*. Westtown, March 29 (*Hallett*); Buckshutem, N. J., Oct 28 (*Prince*).

Pied-billed Grebe, *Podilymbus podiceps*. Bridesburg, March 1 (*Miller*); Kennett Square, April 7 (*Pennock*).

Loon, *Gavia immer*. Fish House, April 25 (*Potter*); Cape May, N. J., all winter, first northern flight April 12 (*Hand*).

Herring Gull, *Larus argentatus*. Camden, N. J., Oct. 23-
April 25 (*Potter*); Frankford, Sept. 19-May 6 (*Miller*); Wayne,
two flying over, Feb. 25 (*Pearson*).

Laughing Gull, *Larus atricilla*. Cape May, N. J., April 30
(*Hand*); four at mouth of Maurice River, N. J., June 9 (*Prince*).

Common Tern, *Sterna hirundo*. Camden, N. J., Aug. 26,
1910, April 22, 23, 25 (*Potter*).

Wilson's Petrel, *Oceanites oceanicus* (presumably). Two at
Maurice River Cove, Delaware Bay, N. J., June 9 (*Prince*).

Merganser, *Mergus americanus*. Fish House, N. J., last seen
May 20 (*Potter*); Cape May, N. J., all winter, first northward
flight March 23 (*Hand*).

Black Duck, *Anas rubripes tristis*. Bridesburg, March 9 (*Miller*);
Buckshutem, N. J., old birds with young, May 5 (*Prince*);
Cape May, N. J., all winter, most numerous about Great Sound,
where there was a flock of probably 1500 (*Hand*).

Green-winged Teal, *Nettion carolinense*. Cape May, N. J.,
seven shot in harbor Dec. 12, 1910, first record I have (*Hand*).

Redhead, *Marila americana*. Fish House, N. J., April 22,
23, May 4 (*Potter*).

Lesser Scaup, *Marila affinis*. Fish House, N. J., March 25-
May 14 (*Potter*); Buckshutem, N. J., Nov. 25 (*Prince*).

Old-squaw, *Harelda hyemalis*. Cape May, N. J. Very scarce,
hunted by gunners in launches until they have nearly all left
our waters; saw none on a gunning trip Dec. 25-30, 1911, where
formerly they were plentiful (*Hand*).

Canada Goose, *Branta canadensis canadensis*. Cape May, N. J., 40-50, Dec. 27, 1911 (*Hand*).

Bittern, *Botaurus lentiginosus*. Tinicum, May 4 (*Miller*); Wayne, April 23 (*Pearson*); Yardville, N. J., May 18 (*Allinson*).

Least Bittern, *Ixobrychus exilis*. Eggs hatching in nest at Richmond, Phila., May 31 (*Miller*).

Little Blue Heron (white plumage), *Florida caerulea*. Cape May, N. J., observed during August and September, sometimes as many as five together (*Hand*).

Great Blue Heron, *Ardea herodias*. Moorestown, N. J., Mar. 22 (*Mickle*); Buckshutem, N. J., a few all winter (*Prince*); Wayne, April 23 (*Pearson*); Concordville, May 10 (*Styer*); Westtown, March 29 (*Hallett*); Cape May, N. J., Dec. 30, 1911 (*Hand*).

Night Heron, *Nycticorax nycticorax naevius*. Camden, N. J., Dec. 13, 1910 (*Potter*).

Clapper Rail, *Rallus crepitans crepitans*. Cape May, N. J., three on Dec. 7, 1910; arrived in spring, March 14 (*Hand*).

Virginia Rail, *Rallus virginianus*. Cape May, N. J., Dec. 12 and 26, 1910 (*Hand*).

Florida Gallinule, *Gallinula galeata*. Arrived at Richmond, Phila., April 25; had eggs May 31. Owing to the filling in of the marsh only 4 or 5 pairs bred this year (*Miller*).

Coot, *Fulica americana*. Fish House, N. J., April 22, 23, 25 and 27 (*Potter*).

Woodcock, *Philohela minor*. Frankford, March 23; Essington, May 4 (*Miller*); West Creek, N. J., four young just out of the egg May 6 (*Stone*); Cape May, N. J., large flight Dec. 8-14, 1910. Many in town, very thin and weak; no marked flight in autumn of 1911, probably because there were no light north-west winds at the time of their migration (*Hand*).

Wilson's Snipe, *Gallinago delicata*. Tinicum, March 18 (*Miller*); Wayne, May 7 (*Pearson*); Kennett Square, April 11 (*Pennock*); Westtown, one pair March 19-26 (*Hallett*); Buckshutem, May 4 (*Prince*); Cape May, N. J., March 14 (*Hand*).

Least Sandpiper, *Pisobia minutilla*. Camden, N. J., May 15, 21 (*Potter*); Westtown, May 22 and Brinton's Dam May 13 (*Hallett*).

Red-backed Sandpiper, *Pelidna alpina sakhalina*. Flocks of 500 of these birds and sanderlings seen above Cape May, N. J., Dec. 25-30, 1911; first migrants at Cape May Apr. 29, 1911 (*Hand*).

Sanderling, *Calidris leucophaea*. At Cape May, N. J., with the preceding, Dec. 25-30, 1911 (*Hand*).

Greater Yellow-legs, *Totanus melanoleucus*. West Chester, April 24 (*Roberts*); Buckshutem, N. J., May 21 (*Prince*); Camden, N. J., April 22 (*Potter*); Cape May, N. J., March 14 (*Hand*).

Field Plover, *Bartramia longicauda*. Doylestown, May 14 (*Mason*); Cape May, N. J., April 24 (*Hand*).

Hudsonian Curlew, *Numenius hudsonicus*. Cape May, N. J., April 17 (*Hand*).

Killdeer, *Oxyechus vociferus*. Camden, N. J., Dec. 18, 1910 (*Potter*); nest with 4 eggs Buckshutem, N. J., April 24 (*Prince*); at least four pairs bred in northeastern Philadelphia (*Miller*).

Semipalmated Plover, *Aegialitis semipalmata*. Cape May, N. J., March 30 (*Hand*).

Piping Plover, *Aegialitis meloda*. Ad. ♂ collected at Ocean City, N. J., Aug. 3, 1899 (*Moore*) (Coll. R. T. Moore). Apparently last record for New Jersey.

Turnstone, *Arenaria interpres morinella*. Cape May, N. J., April 29 (*Hand*).

Red-tailed Hawk, *Buteo borealis borealis*. Camden, N. J., last seen March 11 (*Potter*).

Black Hawk, *Archibuteo lagopus sancti-johannis*. Bridesburg, March 1 (*Miller*).

Bald Eagle, *Haliaeetus leucocephalus leucocephalus*. Maurice River, N. J., May 4 (*Prince*); Cape May, N. J., Dec. 30, 1911 (*Hand*); Dias Creek, N. J., May 28 (*Fowler*).

Barn Owl, *Aluco pratincola*. Westtown, at least one family resident (*Hallett*); one seen in Woodland Cemetery, Phila., April 10 (*Pearson*); April 28 (*Hill*).

Long-eared Owl, *Asio wilsonianus*. Orchard, N. J., nest with four young, May 19, 1911 (*Moore*); now in D. V. O. C. collection.

Short-eared Owl, *Asio flammeus*. Camden, N. J., Nov. 26, 1910 (*Potter*).

Black-billed Cuckoo, *Coccyzus erythrophthalmus*. One found dead at Moorestown, N. J., June 17 (*Mickle*).

Hairy Woodpecker, *Dryobates villosus villosus*. Moorestown, N. J., March 26 (*Mickle*); Holmesburg, half-grown young, May 17 (*Miller*).

Phoebe, *Sayornis phoebe*. Londongrove, one on Dec. 12 and 13, 1910, when ground was covered with snow and temperature 2° to 10° F. (*Roberts*).

Olive-sided Flycatcher, *Nuttallornis borealis*. Arrived Lopez, May 18 (*Behr*).

Acadian Flycatcher, *Empidonax virescens*. Nest with three eggs, North Wildwood, N. J., May 31, 1905 (*Moore*).

Horned Lark, *Otocoris alpestris alpestris*, Camden, N. J., Feb. 22, a flock (*Potter*); Richmond, Phila., Dec. 23, a flock (*Miller*); Collegeville, Feb. 22, flock of 50 (*Fox*); West Chester, Feb. 23, flock of 20 (*Roberts*); Concordville, Feb. 21, flock (*Styer*). Occurrences followed a four-inch snowfall on Feb. 20.

Blue Jay, *Cyanocitta cristata cristata*. Frankford, not observed till May (*Miller*); none at Westtown until March 26 (*Hallett*).

Fish Crow, *Corvus ossifragus*. Bristol, several Feb. 5-26 (*Fowler*); Dias Creek, N. J., May 28 (*Fowler*); nest and eggs, Frankford, May 4 (*Miller*).

Starling, *Sturnus vulgaris*, Moorestown, N. J. All winter in flocks of 5 or 6, nested nearby, and Starling families were frequently seen on the lawn with Red-winged Blackbirds during spring (*Mickle*); large flocks seen at Camden, N. J., during the winter, five nests, spring of 1910 (*Potter*); Woodland Cemetery, W. Phila., one pair frequently seen during winter, also bred, young fledged, May 23 (*Pearson*). Big flock seen now and then all winter at Frankford, nests examined at Frankford (3), Holmesburg, Bustleton (2), Andalusia and Woodbury, N. J., all but one with young. One Bustleton nest contained a second set of eggs, June 25 (*Miller*); March 11 to end of April, four at Yardville, N. J., and later said to have nested in the vicinity (*Allison*); Cape May, N. J., rapidly increasing, flocks of over 100 seen (*Hand*).

Rusty Blackbird, *Euphagus carolinus*, Camden, N. J., Dec. 25, 1910 (*Potter*); West Chester, Nov. 4, 1910 (*Roberts*).

Purple Finch, *Carpodacus purpureus purpureus*, Wayne, March 26–May 7 (*Pearson*); last seen, Camden, N. J., May 7 (*Potter*); Concordville, May 3 (*Styer*); Westtown, May 5 (*Hallett*); Lansdowne, April 24 (*Nicholson*); West Chester, May 8 (full song) (*Roberts*).

Redpoll, *Acanthis linaria linaria*, Camden, N. J., Dec. 25, 1910 (*Potter*).

Gold Finch, *Astragalinus tristis tristis*, Moorestown, N. J., in large flocks, May 26–May 9 (*Mickle*).

Pine Siskin, *Spinus pinus*, Westtown, flock of 15, March 18 (*Hallett*); Lansdowne, May 10 (*Jacob*); Wayne, frequent March 5–April 30, and three on May 21 (*Pearson*).

Vesper Sparrow, *Poœetes gramineus gramineus*, West Chester, Dec. 19, 1910 (*Roberts*).

Henslow's Sparrow, *Passerherbulus henslowi henslowi*, Bucks-hutem, N. J., resident all summer in uncultivated meadows along the Maurice River (*Prince*).

White-throated Sparrow, *Zonotrichia albicollis*, Moorestown, N. J., Oct. 10–May 12 (*Mickle*); Lansdowne, Oct. 10–May 10 (*Jacob*); Wayne, Sept. 28–May 7 (*Baker, Pearson*); W. Phila., Sept. 22–May 17 (*Hill*); Frankford, Sept. 15–May 19 (*Miller*); West Chester, Oct. 2–May 7 (*Roberts*); Vineland, N. J., Oct. 10–May 3 (*Prince*); last seen at Camden, N. J., May 14 (*Potter*); Concordville, May 13 (*Styer*); Kennett Square, May 12 (*Pennock*); Westtown, May 20 (*Hallett*); Holmesburg, May 5 (*Fowler*).

White-crowned Sparrow, *Zonotrichia leucophrys leucophrys*. Concordville, May 10 (*Styer*).

Tree Sparrow, *Spizella monticola monticola*. Last seen, Holmesburg, March 12 (*Fowler*); Camden, N. J., April 4 (*Potter*); West Chester, Nov. 11–April 10 (*Roberts*); Frankford, Sept. 29–April 16 (*Miller*).

Junco, *Junco hyemalis hyemalis*. Moorestown, N. J., Oct. 13–April 26 (*Mickle, Haines*); Wayne, Oct. 11–April 23 (*Baker, Pearson*); Frankford, Oct. 3–April 26 (*Miller*); Yardville, N. J., Oct. 30–March 19 (*Allinson*); Bordentown, N. J., Sept. 10–April 15 (*Flynn*); West Chester, Oct. 13–April 25 (*Roberts*); Downtown, Oct. 2–April 23 (*Fair*); Vineland, N. J., Oct. 10–April 14

(*Prince*). Arrived Rancocas, N. J., Oct. 17 (*Haines*). Last seen, Holmesburg, April 9 (*Fowler*); Lansdowne, April 24 (*Nicholson*); Westtown, May 9 (*Hallett*).

Song Sparrow, *Melospiza melodia melodia*. Lansdowne, March 25, one bird with very abnormal song, not like the normal one in any way. Same bird heard a year ago (*Carter*).

Swamp Sparrow, *Melospiza georgiana*. One wintered at Wayne (*Pearson*).

Cardinal, *Cardinalis cardinalis cardinalis*. Collegetown, frequent in ravines (*Fox*).

Rose-breasted Grosbeak, *Zamelodia ludoviciana*. Camden, N. J., June 17 (*Potter*).

Scarlet Tanager, *Piranga erythromelas*. Nest at Bustleton, July 18. An earlier nest was built in the same tree (*Miller*).

Purple Martin, *Progne subis subis*. Last seen at Moorestown, N. J., Sept. 7, 1910, flock of 40 (*Mickle*).

Northern Shrike, *Lanius borealis*. Moorestown, N. J., Dec. 4 (*Mickle*); Tinicum, March 18 (*Miller*); Vineland, N. J., April 29 (*Prince*).

Migrant Shrike, *Lanius ludovicianus migrans*. Blackwood, N. J., April 6 (*Moore*); Delaware City, Del., Dec. 9, 1911, shot (*Trotter*).

Blue-winged Warbler, *Vermivora pinus*. Fox Chase, nest and eggs, May 25 (*Miller*).

Nashville Warbler, *Vermivora rubricapilla rubricapilla*. Wayne, May 7 (*Pearson*); Doylestown, May 10 (*Mason*); West Chester, May 3 (*Roberts*).

Tennessee Warbler, *Vermivora peregrina*. Concordville, May 6 (*Slyer*).

Cape May Warbler, *Dendroica tigrina*. Doylestown, May 9 (*Mason*); West Chester, May 11, a number (*Roberts*); Kennett Square, two on May 14 (*Pennock*); Haddonfield, N. J., one Oct. 11, 1911, and one found dead and prepared Oct. 14, 1911 (*Moore*).

Bay-breasted Warbler, *Dendroica castanea*. Ardmore, May 14 (*Baily*).

Pine Warbler, *Dendroica vigorsii*. Nest and four eggs, East

Hammonton, N. J., May 20, 1911 (*Moore*). Now in D. V. O. C. collection.

Kentucky Warbler, *Oporornis formosus*. Eggs at Rockledge, Philadelphia, May 25 (*Miller*).

Hooded Warbler, *Wilsonia citrina*. Haverford, Sept. 17 (*Serrill*).

Wilson's Warbler, *Wilsonia pusilla pusilla*. Doylestown, May 14 (*Mason*); Buckshutem, May 6 (*Prince*); Haverford, May 9 (*Serrill*).

Pipit, *Anthus rubescens*. Camden, N. J., Nov. 6, 1910 (*Potter*); five at Doylestown, April 30 (*Mason*); below Trenton, N. J., March 13 (*Abbott*).

Mockingbird, *Mimus polyglottos polyglottos*. Pair nested in Cape May City, N. J. (*Hand*); One seen June 29, at Cape May Pt., by R. A. Spaeth who found a nest there in June 1899, containing four eggs. One of them was taken and the birds thereupon deserted the nest.

Carolina Wren, *Thryothorus ludovicianus ludovicianus*. Young out of nest Moorestown, N. J., May 8 (*Linton*).

Winter Wren, *Nannus hiemalis hiemalis*. Last seen Wayne, April 23 (*Pearson*); W. Phila., April 10 (*Pearson*); Westtown, April 26 (*Hallett*).

Brown Creeper, *Certhia familiaris americana*. Moorestown, N. J., Dec. 18-Jan. 22 (*Mickle*); Wayne, Oct. 10 (*Baker*); Frankford, Sept. 24-April 25 (*Miller*); West Chester, Oct. 16-April 9 (*Roberts*); Vineland, N. J., Oct. 15-April 25 (*Prince*); Last seen at Camden, April 26 (*Potter*); Wayne, April 21 (*Pearson*); W. Phila., common April 9-26 (*Hill*); Westtown, April 25 (*Hallett*); Holmesburg, April 9 (*Fowler*).

Red-breasted Nuthatch, *Sitta canadensis*. Camden, N. J., Oct. 12, 1910, May 6-7, 1911 (*Potter*); Woodbury, N. J., May 7 (*Miller*); West Chester, May 9 (*Roberts*).

Black-capped Chickadee, *Penthestes atricapillus atricapillus*. Wayne, Oct. 9 (*Baker*); March 12 (*Pearson*); Westtown, seen but once late fall 1910 (*Hallett*).

Golden-crowned Kinglet, *Regulus satrapa satrapa*. Moorestown, N. J., Oct. 29 (*Mickle*); to April 26 (*Haines*); Ardmore,

April 2, common for several days (*Baily*); Wayne, Oct. 9–April 6 (*Pearson*); W. Phila. April 9–20 (*Hill*).

Blue-gray Gnatcatcher, *Poliophtila coerulea coerulea*. Dias Creek, N. J. saw six May 28 (*Hand and Fowler*).

Hermit Thrush, *Hylocichla guttata pallasii*. One all winter at Rancocas, N. J. (*Haines*), Haverford Dec. 15, Jan. 10, Feb. 19, 26, Mar. 4 (*Serrill*), one all winter, Univ. of Pa. botanic garden W. Phila. (*Pearson*) Lansdowne singing subdued song Feb. 19 to April 7 (*Carter*).