

## Report on the Spring Migration of 1909

COMPILED BY WITMER STONE

Every year adds to the value of our migration record and makes it all the more important that our observers should continue to send in their reports. We started in 1901 with five stations and next year increased our corps to 42. Since then we have had in successive years 45, 54, 60, 50, 63, 56 and in 1909, 45. We sincerely thank those who have carried on this work in the past and earnestly urge them to continue it. We also request our observation corps to send in the names of any of their friends who are capable and willing to co-operate in the work. Blank schedules will be furnished upon application to Mr. Alfred C. Redfield, Wayne, Pa., who superintends the work of the migration corps.

### *New Jersey.*

Cape May, H. Walker Hand.  
Vineland, Miss Alice K. Prince.  
Downtown (near Newfield), W. W. Fair.  
Yardville, Rachael E. Allinson.  
Trenton, C. C. and R. M. Abbott.  
Bordentown, Minnie V. Flynn.  
Beverly, J. Fletcher Street.  
Rancocas, Emily Haines and Frances B. Stokes.  
Moorestown, Anna A. Mickle.  
Pitman, S. B. Haines.  
Pensauken, C. J. Hunt.  
Camden, Julian K. Potter.

### *Pennsylvania.*

Kennett Square, Charles J. Pennock.  
West Chester, Thos. H. Jackson.  
Concordville, Mrs. K. R. Styer and Miss E. P. Styer.

Concordville, C. Hayburn Jones.  
 Swarthmore, David E. Harrower.  
 Lansdowne, John D. Carter.  
 Lansdowne, Louisa M. Jacob.  
 Lansdowne, Marion A. Honsaker.  
 Lansdowne, Miss Ethel A. Shrigley.  
 Lansdowne, Friends' School.  
 Collingdale, Paul L. Lorrilliere.  
 Media, Lydia G. Allen.  
 Media, Edith L. Palmer.  
 Ardmore, Wm. L. Baily.  
 Haverford, Wm. J. Serrill.  
 Wayne, Alfred C. Redfield.  
 Wayne, L. S. Pearson.  
 Wayne, Edwin B. Bartram.  
 Wayne, Miss Mary K. Baker.  
 Bryn Mawr, Emily H. Thomas.  
 West Philadelphia, Thos. R. Hill.  
 West Fairmount Park, Elmer Onderdonk.  
 Wissahickon, John R. Pickering, Jr.  
 Germantown, Miriam F. Solis-Cohen.  
 Olney, George S. Morris.  
 Oak Lane, John W. Allen.  
 Melrose, Samuel H. Barker.  
 Frankford, Richard F. Miller.  
 Fox Chase, Alexander Patman.  
 Holmesburg, Henry W. Fowler.  
 George School, Jesse E. Packer.  
 Easton, Edw. J. F. Marx.  
 Perkasio, Albert C. Rutter.  
 Columbia, Wm. F. Rochow.  
 Marietta, W. H. Buller.  
 Lopez, Otto Behr.

In the vicinity of Philadelphia the spring migration of 1909 was for the most part nearly normal. The mild weather in February, especially from the 12th to the 16th, brought the earliest migrants much earlier than usual. The bulk arrival of Grackles on February 15, was fifteen days earlier than the aver-

age for the previous seven years, that of the Bluebird on February 16, was thirteen days early, of the Robin February 20, eleven days early and of the Fox Sparrow February 21, fifteen days early.

The early March migrants, the Red-winged Blackbird, Flicker, Meadow Lark, Killdeer, arrived in bulk from five to eleven days earlier than the average, while the Cowbird, Field Sparrow, Vesper Sparrow and Chipping Sparrow, arriving in bulk March 27 to April 7, were from four to eight days later than the average. The majority of the fifty most common April and May migrants were remarkably regular. The date of bulk arrival in eight species coincided with the average of the previous seven years, in twenty species it varied by only a day, in twelve it varied by two days, in six by three days and in four from four to six days.

*List of Other Species Reported by Observers During 1909, and Additional Notes. Winter Notes Refer to Winter of 1908-9. Localities are in Pennsylvania Unless Otherwise Indicated.*

*Podilymbus podiceps*, Pied-billed Grebe. Pair at George School, April 11 (*Packer*); Wayne one April 12 (*Pearson*).

*Gavia immer*, Loon. Camden, N. J., May 8 (*Potter*); one caught at Kennett, May 30 (*Pennock*); Cape May, Feb. 3 (*Hand*).

*Larus argentatus*, Herring Gull. Frankford, on river, September 24-May 10 (*Miller*); mouth of Maurice River, N. J., May 20 (*Prince*).

*Larus philadelphia*, Bonaparte's Gull. Richmond, Feb. 27 (*Miller*).

*Phalacrocorax dilophus*, Double-crested Cormorant. Cape May, N. J., April 22 (*Hand*).

*Mergus americanus*, Merganser. Richmond, April 16-May 15 (*Miller*); Tinicum, one shot Feb. 22 (*Pearson*); Buckshutem, N. J., one shot Dec. 3, 1908 (*Prince*).

*Mergus serrator*, Red-breasted Merganser. Richmond, Jan. 25 (*Miller*).

*Anas platyrhynchos*, Mallard. Tinicum, one shot Feb. 22 (*Pearson*).

*Anas rubripes*, Black Duck. Richmond, March 8 (*Miller*); Cape May, N. J., nest with eggs April 11 (*Hand*); Tinicum, several shot Feb. 27, March 26-27 (*Redfield*).

*Querquedula discors*, Blue-winged Teal. Three near Audubon on Perkiomen Creek, Sept. 26, 1908 (*Pearson*); Bridesburg, Feb. 20 (*Miller*).

*Dafila acuta*, Pintail. Tinicum, abundant Feb. 27, two March 27 (*Redfield*).

*Aix sponsa*, Wood Duck. Cape May, N. J., flock of 18, May 19 (*Hand*).

*Marila marila*, Scaup Duck. Buckshutem, N. J., one shot Nov. 4, 1908 (*Prince*).

*Marila affinis*, Lesser Scaup. Richmond, February 9 and April 16 (*Miller*); Wayne, one shot Nov. 7, 1908 (*Redfield*).

*Harelda hyemalis*, Old Squaw. Buckshutem, N. J., one shot Jan. 15 (*Prince*).

*Erismatura jamaicensis*, Ruddy Duck. Tinicum, May 26, one shot (*Redfield*); Buckshutem, N. J., one shot Nov. 4, 1908 (*Prince*).

*Branta canadensis*, Canada Goose. Two on Maurice River at Buckshutem, N. J., May 20 (*Prince*); going north at Cape May, N. J., Feb. 3, 8, 13, 21 (*Hand*).

*Botaurus lentiginosus*, American Bittern. Holmesburg, May 6 (*Miller*); Camden, N. J., April 27 (*Potter*); near Concordville, April 11 (*Styer*); Cape May, N. J., three on April 6 (*Hand*).

*Ixobrychus exilis*, Least Bittern. Richmond, May 8 (*Miller*); Pensauken, N. J., April 24 (*Hunt*); Berwyn, nest with eggs June 12, bird seen June 6 (*Pearson*).

*Ardea herodias*, Great Blue Heron. Frankford, March 14 (*Miller*); Camden, N. J., March 30 (*Potter*).

*Herodias egretta*, White Egret. One seen for a week near Concordville, Aug. 11 (*Styer*).

*Florida cærulea*, Little Blue Heron. Cape May, N. J., Aug. 1-end Sept., 1908 (*Hand*).

*Rallus virginianus*, Virginia Rail. Pensauken, N. J., April 11 (*Hunt*).

*Porzana carolina*, Sora Rail. Bridesburg, May 6 (*Miller*).

*Gallinula galeata*, Florida Gallinule. Arr. Richmond, April 16 (*Miller*).

*Ionornis martinica*, Purple Gallinule. Cape May, N. J., one shot July 7 (*Hand*).

*Fulica americana*, Coot. Richmond, Feb. 22 and April 3 (*Miller*); Camden, N. J., April 24 (*Potter*).

*Phalaropus fulicarius*, Red Phalarope. Cape May, N. J., May 3 (*Hand*).

*Steganopus tricolor*, Wilson's Phalarope, Cape May, N. J., one shot May 3 (*Hand*).

*Philohela minor*, Woodcock. Frankford, March 30 and Pensauken, N. J., May 20 (*Miller*); Lansdowne, March 30 (*Jacob*); Easton, Sept. 19, 1908 (*Marx*); large flight at Cape May, N. J., Nov. 4-7, 1908, some wintered, spring flight March 8, nest with eggs April 5, hatched April 8 (*Hand*); Germantown, March 13 (*S. Brown*).

*Gallinago delicata*, Wilson's Snipe. Richmond, March 10 and Pensauken, N. J., April 13 (*Miller*); Cape May, N. J., March 20 and April 11 (*Hand*); Tinicum, March 27 (*Pearson*).

*Tringa canutus*, Knot. Cape May, N. J., large flocks June 21-25 (*Hand*).

*Pisobia minutilla*, Least Sandpiper. Richmond, May 20-28 (*Miller*).

*Calidris arenaria*, Sanderling. Cape May, N. J., one shot May 4 (*Hand*).

*Totanus melanoleucus*, Great Yellowlegs. Richmond, May 11 (*Miller*); Pensauken, N. J., May 9 (*Hunt*); Camden, N. J., May 22 (*Potter*); Cape May, March 21 abundant, April 25 (*Hand*).

*Bartramia longicauda*, Field Plover. Richmond, April 21 (*Miller*).

*Numenius hudsonicus*, Hudsonian Curlew. Cape May, April 16, flock 250 (*Hand*).

*Aegialitis semipalmatus*, Semipalmated Plover. Richmond, May 23-28 (*Miller*); Cape May, N. J., May 2 (*Hand*).

*Squatarola squatarola*, Black-bellied Plover. Cape May, April 21 (*Hand*).

*Arenaria interpres*, Turnstone. Cape May, May 2, large flocks June 21-25 (*Hand*).

*Colinus virginianus*, Quail. Ardmore, May 7 (*Baily*).

*Zenaidura macroura carolinensis*, Mourning Dove. Two wintered at Concordville (*Styer*); had eggs at Pensauken, N. J., April 11 (*Hunt*).

*Astur atricapillus*, Goshawk. West Chester, Feb. 7, one seen (*Jackson*).

*Buteo platypterus*, Broad-winged Hawk. Nest and eggs Wayne, May 23 (*Redfield*).

*Archibuteo lagopus sancti-johannis*, Rough-legged Hawk. Bridesburg, Dec. 25, 1908 and Feb. 4 (*Miller*); Tinicum, April 18 (*Redfield*); West Creek, N. J., March 8, one shot (*Rehn*).

*Haliaeetus leucocephalus*, Bald Eagle. Cape May, N. J., two on April 1 (*Hand*),

*Falco columbarius*, Pigeon Hawk. One shot October 21, 1908, Buckshutem, N. J., (*Prince*).

*Aluco flammea*, Barn Owl. George School, Dec. 27, 1908 (*Packer*).

*Asio wilsonianus*, Long-eared Owl. Pensauken, N. J., April 13 (*Miller*).

*Sphyrapicus varius*, Yellow-billed Sapsucker. Wayne, Oct. 11, 1908 (*Bartram*); Easton, one seen Dec. 3, 28, 1908 and May 24, 1909 (*Marx*).

*Centurus carolinus*, Red-bellied Woodpecker. Crum Creek, one seen March 15 (*Baily*).

*Chordeiles virginianus*, Nighthawk. Moorestown, N. J., Sept. 12, 1908 (*Mickle*).

*Nuttallornis borealis*, Olive-sided Flycatcher. Arrived at Lopez, May 31 (*Behr*).

*Sayornis phoebe*, Phoebe. George School, November 21, 1908 (*Packer*).

*Empidonax minimus*, Least Flycatcher. One bird apparently settled for the summer near Moore's, Delaware County, June 13 (*Carter*).

*Otocoris alpestris*, Horned Lark. Five near Cheney, Chester County, Feb. 12 (*Fowler*); frequent during winter of 1908-1909 at Olney (*Morris*); George School, Dec. 27, 1908 (*Packer*); Easton, flocks Feb. 13, 19, March 6 (*Marx*).

*Corvus corax principalis*, Raven. Cape May, N. J., one on meadows Nov. 8, 1908 (*Hand*).

- Corvus brachyrhynchos*, Crow. Had young April 19 (*Miller*).
- Corvus ossifragus*, Fish Crow. Holmesburg, May 13 (*Fowler*).
- Sturnus vulgaris*, Starling. George School, one bird on March 12 and April 16 first seen in neighborhood (*Packer*).
- Euphagus carolinus*, Rusty Blackbird. Tinicum, Feb. 27 (*Pearson*); Princeton, N. J., thirty April 3 (*Redfield*).
- Carpodacus purpureus*, Purple Finch. Unusually abundant during winter at Olney, 1908-1909 (*Morris*); last at Bustleton, April 24 (*Miller*); last seen at Camden, N. J., April 28 (*Potter*); Easton, Sept. 7-Nov. 14, 1908 and April 17-May 15, one on Dec. 25, 1908 (*Marx*); Wayne, Feb. 22-May 11 (*Redfield*).
- Loxia curvirostra minor*, Red Crossbill. Swarthmore, Dec. 26, 1908 (*Harrower*); Media, one March 7 (*Allen*); Concordville, Nov. 16 (*Styer*); Bristol, March 12 (*Abbott*); Easton, Nov. 27, 29, Dec. 20, 28, 1908, Feb. 7 and 18 (*Marx*).
- Loxia leucoptera*, White-winged Crossbill. Cape May, N. J., one killed Feb. 5 (*Hand*).
- Acanthis linaria*, Redpoll. George School, February 1, flock of 20 feeding on ragweed seeds (*Packer*); very common at Lopez, Oct. 15-April 7 (*Behr*); Easton, March 6 a flock (*Marx*); Wayne, flocks March 6-7 (*Pearson* and *Redfield*); Mt. Pocono, March 28 (*Baily*).
- Spinus pinus*, Pine Siskin. Last seen May 6, Frankford, usually common (*Miller*); Morristown, N. J., Dec. 25, 1908 and April 24-May 9 (*Mickle*); Lansdowne, small flocks January-April 23 (*Carter*); Concordville, Jan. 11 to April 29 in flocks and one on May 16 (*Styer*); Kennett, April 24-30 (*Pennock*); West Chester, unusually abundant Feb. 21-April 19, one on May 2 (*Jackson*); Marietta in January (*Buller*); Easton, Nov. 27-Dec. 19, 28, 1908 and then Feb. 18-early May (*Marx*); Wayne, March 5-May 7 common (*Redfield*); Tinicum, Jan. 23-April 18 (*Redfield*).
- Poæcetes gramineus*, Vesper Sparrow. Wayne, several Dec. 20 and 21 (*Redfield*); Easton, one Nov. 26, 1908 (*Marx*).
- Passerherbulus henslowi*, Henslow's Sparrow. Buckshutem, N. J., May 6 (*Prince*).
- Zonotrichia albicollis*, White-throated Sparrow. Holmesburg, last seen April 30 (*Fowler*); Moorestown, N. J., Oct. 10, 1908-

May 7 (*Mickle*); last seen Camden, N. J., May 6 (*Potter*); Media, May 13 (*Allen*); Woodland Cemetery, May 4 (*Hill*); Concordville, May 18 (*Styer*); Easton, Sept. 19–May 14 and one on May 31 (*Marx*); Wayne, May 12 (*Redfield*); arrived Lopez, April 17 (*Behr*).

*Zonotrichia leucophrys*, White-crowned Sparrow. Bridesburg, May 14 (*Miller*); Haverford, May 16 (*Serrill*); Concordville, May 15 (*Styer*); Wayne, May 16 (*Pearson*), Easton, May 8 and 14 (*Marx*).

*Spizella monticola*, Tree Sparrow. Last seen at Moorestown, N. J., April 4 (*Mickle*); Media, April 11 (*Palmer*); Easton, Nov. 21–March 24 (*Marx*); Lopez, Oct. 15–April 3 (*Behr*); Wayne, Nov. 17–March 20 (*Redfield*).

*Spizella pusilla*, Field Sparrow. One at Easton, Jan. 9 (*Marx*).

*Junco hyemalis*, Junco. Moorestown, N. J., November 1, 1908–April 4 (*Mickle*); last seen Camden, N. J., April 25 (*Potter*); Media, May 2 (*Palmer*); Germantown, April 17 (*Solis-Cohen*); Oak Lane, April 30 (*Allen*); Concordville, April 28 (*Styer*); arrived Fairmount Park, Oct. 21, 1908 (*Onderdonk*); George School, Sept. 25, 1908 (*Packer*); Marietta, Oct. 10, 1908 (*Buller*); Downstown, N. J., last seen May 2 (*Fair*); Vineland, N. J., Oct. 22–April 2 (*Prince*); Rancocas, N. J., Oct. 11 (*Haines*); Bordentown, N. J., Sept. 25–April 22 (*Flynn*); Perkasio, May 4 (*Rutter*); Yardville, Oct. 16–May 2 (*Allinson*); Wayne, Oct. 4–April 25 (*Baker*); Easton, Oct. 3–May 4 (*Marx*); Wayne, May 1 (*Redfield*).

*Passerella iliaca*, Fox Sparrow. Last seen Wayne, March 29 (*Redfield*).

*Zamelodia ludoviciana*, Rose-breasted Grosbeak. One seen and heard near Rancocas, July 16, 1908 (*Haines*).

*Lanius ludovicianus migrans*, Migrant Shrike. Audubon, Pa., Sept. 26, 1908 (*Pearson*).

*Compsothlypis americana usneæ*, Parula Warbler. Easton, one Oct. 10, 1908 (*Marx*).

*Protonotaria citrea*, Prothonotary Warbler. One seen and heard at Lansdowne, May 12 (*Carter*). [Mr. Carter's description of song and bird leaves no doubt in my mind as to the correctness of his identification, W. S.]

*Vermivora chrysoptera*, Golden-winged Warbler. Easton, May 7, 8 and 12 (*Marx*); Wayne, May 8 (*Redfield*).

*Vermivora rubricapilla*, Nashville Warbler. Haverford, May 9 (*Serrill*); Buckshutem, N. J., May 8 (*Prince*); Rancocas, N. J., May 11 (*Haines*); Easton, May 8 and 9 (*Marx*); Wayne, May 8 (*Redfield*).

*Vermivora peregrina*, Tennessee Warbler. Concordville, one May 18-25 (*Styer*).

*Dendroica tigrina*, Cape May Warbler. Trenton, May 15 (*Abbott*).

*Dendroica coronata*, Myrtle Warbler. Easton, one Nov. 6, 1908 (*Marx*).

*Dendroica castanea*, Bay-breasted Warbler. Common at Wayne, May 16-25 (*Redfield*); Bryn Mawr, May 24 (*Thomas*); Moorestown, N. J., May 11 (*Mickle*); George School, May 15 (*Packer*); Rancocas, N. J., May 15 (*Haines*); Trenton, N. J., May 11 (*Abbott*); Wayne, May 16 (*Pearson*).

*Dendroica striata*, Black-poll Warbler. Last seen at Concordville, June 2 (*Styer*).

*Seiurus motacilla*, Louisiana Water Thrush. Wissahickon Creek, May 15 (*Miller*); Kennett, Pa., April 19 one shot (*Pennock*).

*Oporornis philadelphia*, Mourning Warbler. Lansdowne, June 11 and 12 (*Carter*); Trenton, May 14 (*Abbott*).

*Wilsonia pusilla*, Wilson's Warbler. Trenton, May 15 several (*Abbott*); Easton, May 14 (*Marx*).

*Wilsonia citrea*, Hooded Warbler. Haverford, May 3 (*Serrill*); Moorestown, N. J., May 3 (*Mickle*); Berwyn, May 4 and 12 (*Redfield*).

*Setophaga ruticilla*, Redstart. Last seen at Concordville, May 30 (*Styer*).

*Anthus rubescens*, Titlark. Concordville, large flock March 24 (*Styer*); Tinicum, flock March 27 (*Pearson*).

*Thryothorus ludovicianus*, Carolina Wren. Unusually common in winter at Frankford (*Miller*).

*Nannus hiemalis*, Winter Wren. Frankford, Sept. 18-May 3 (*Miller*); last seen Media, April 14 (*Allen*); Woodland Cemetery, May 2 (*Hill*); Easton, Sep. 26-March 27 (*Marx*);

Wayne, April 24 (*Redfield*) ; arrived at George School, Sept. 26 (*Packer*) ; Wayne, Sep. 27 (*Baker*).

*Certhia familiaris americana*, Brown Creeper. Oct. 5–April 12, Frankford (*Miller*) ; arrived George School, Oct. 10 (*Packer*) ; last seen Perkasio, April 22 (*Rutter*) ; Easton, Oct. 8–Dec. 23, 1908 (*Marx*) ; Fairmount Park, arrived Oct. 10 (*Onderdonk*) ; Wayne, Oct. 3–April 15 (*Baker*).

*Parus carolinensis*, Carolina Chickadee. Wayne; one shot March 1st at Berwyn; one was seen repeatedly during May (*Redfield*).

*Regulus satrapa*, Golden-crowned Kinglet. Frankford, Sept. 21–April 13 (*Miller*) ; last seen April 19, Concordville (*Styer*) ; Wayne, Oct. 3 (*Baker*) ; Easton, Oct. 3–April 9 (*Marx*) ; Wayne, April 12 (*Redfield*).

*Planesticus migratorius*, Robin. Last seen at Easton, Nov. 2, 1908; individuals on Dec. 19, 25, 28, Jan 6 (*Marx*).



NAME.	Moorestown, N. J.	Pensauken, N. J.	Camden, N. J.	Media, Pa.	Swarthmore, Pa.	Collingdale, Pa.	Lansdowne, Pa.	Armore and Haverford, Pa.	Bryn Mawr, Pa.	Wayne, Pa.	West Philada.	Germantown, Phila.	Oak Lane and Melrose, Pa.	Fox Chase, Phila.	Holmesburg, Phila.	Frankford, Phila.	Olney, Phila.	Bulk Arrival Phila., 1909.
Wood Pewee . . . . .	May 6	May 15	May 16	May 12	May 12	May 12	May 17	May 15	May 15	Mar. 12	May 12	May 11	May 2	May 7	May 6	May 11	May 11	May 12
Acadian Flycatcher . . . . .	May 6	May 6	May 6	May 6	May 6	May 6	May 6	May 6	May 6	May 19	May 19	May 15	May 25	May 7	May 7	May 15	May 15	May 9
Least Flycatcher . . . . .	May 6	May 6	May 6	May 6	May 6	May 6	May 6	May 6	May 6	May 21	May 21	May 21	May 25	May 7	May 7	May 15	May 15	May 9
Bobolink . . . . .	May 6	May 6	May 6	May 6	May 6	May 6	May 6	May 6	May 6	May 7	May 7	May 1	May 25	May 12	May 12	May 12	May 12	May 9
Cowbird . . . . .	Apr. 30	Mar. 12	Mar. 27	Mar. 27	Mar. 27	Mar. 27	Apr. 12	Apr. 4	Apr. 4	Feb. 24	May 4	May 4	Apr. 2	Mar. 30	Mar. 26	Apr. 20	Apr. 20	Mar. 27
Red-winged Blackbird . . . . .	Mar. 2	Feb. 20	Mar. 18	Feb. 15	Feb. 15	Feb. 15	Mar. 14	Feb. 12	Feb. 12	Feb. 24	Mar. 19	Mar. 19	Mar. 10	Mar. 15	Mar. 12	Mar. 28	Feb. 28	Mar. 2
Meadow Lark . . . . .	Res. Mar. 4	Res. Mar. 4	Res. Mar. 4	Res. Mar. 4	Res. Mar. 4	Res. Mar. 4	Res. Mar. 4	Res. Mar. 4	Res. Mar. 4	Res. Mar. 4	Res. Mar. 4	Res. Mar. 4	Res. Mar. 4	Res. Mar. 4	Res. Mar. 4	Res. Mar. 4	Res. Mar. 4	Res. Mar. 4
Orchard Oriole . . . . .	May 5	May 8	May 13	May 5	May 5	May 5	May 6	May 9	May 9	May 6	May 6	May 6	May 25	May 10	May 10	May 3	May 3	May 5
Baltimore Oriole . . . . .	May 6	May 5	May 4	May 7	May 7	May 7	May 6	May 6	May 6	May 4	May 4	May 4	May 25	May 10	May 10	May 4	May 4	May 6
Rusty Blackbird . . . . .	Mar. 21	Mar. 20	Mar. 20	Mar. 11	Mar. 11	Mar. 11	May 4	May 4	May 4	May 4	May 4	May 4	May 5	Mar. 27	Mar. 27	Mar. 26	Mar. 26	Mar. 2
Purple Grackle . . . . .	Feb. 16	Mar. 20	Feb. 13	Feb. 15	Feb. 15	Feb. 15	Feb. 12	Feb. 12	Feb. 12	Feb. 2	Feb. 24	Feb. 27	Feb. 12	Mar. 11	Feb. 13	Feb. 5	Mar. 14	Feb. 15
Vesper Sparrow . . . . .	Apr. 11	Apr. 17	Apr. 3	Apr. 3	Apr. 3	Apr. 3	Apr. 2	Apr. 6	Apr. 6	Mar. 31	Mar. 31	Mar. 31	Apr. 25	Mar. 23	Mar. 23	Mar. 5	Mar. 19	Apr. 2
Savanna Sparrow . . . . .	May 2	Apr. 18	Apr. 18	Apr. 1	Apr. 1	Apr. 1	Apr. 1	Apr. 11	Apr. 11	Mar. 20	Mar. 20	Mar. 20	Apr. 25	Mar. 23	Mar. 23	Feb. 20	Mar. 19	Apr. 2
Grasshopper Sparrow . . . . .	Apr. 7	Apr. 17	Apr. 4	Apr. 22	Apr. 22	Apr. 22	Apr. 18	Apr. 9	Apr. 9	Apr. 25	Apr. 25	Apr. 25	Apr. 25	Apr. 27	Apr. 27	Apr. 6	Apr. 26	Apr. 7
Chipping Sparrow . . . . .	Apr. 18	Mar. 20	Feb. 23	Apr. 3	Apr. 3	Apr. 3	Apr. 11	Apr. 7	Apr. 8	Mar. 20	Mar. 20	Apr. 16	Apr. 2	Mar. 27	Mar. 27	Apr. 6	Apr. 26	Apr. 7
Field Sparrow . . . . .	Apr. 25	Mar. 21	Feb. 22	Apr. 3	Apr. 3	Apr. 3	Apr. 1	Feb. 14	Mar. 20	Mar. 20	Mar. 20	Apr. 16	Apr. 2	Mar. 27	Apr. 2	Res. Mar. 2	Mar. 19	Mar. 27
Swamp Sparrow . . . . .	Apr. 25	Mar. 21	Feb. 22	Apr. 11	Apr. 11	Apr. 11	Apr. 1	Apr. 9	Apr. 8	Apr. 8	Apr. 8	Apr. 16	Apr. 2	Mar. 27	Mar. 10	Res. Mar. 2	Mar. 19	Mar. 27
Fox Sparrow . . . . .	Mar. 21	Mar. 21	Feb. 16	Mar. 14	Mar. 14	Mar. 14	Feb. 21	Feb. 21	Mar. 9	Feb. 20	Mar. 19	Mar. 19	Mar. 7	Mar. 17	Mar. 17	Feb. 19	Feb. 24	Feb. 21
Chewink . . . . .	Apr. 18	Apr. 17	Apr. 21	Apr. 17	Apr. 17	Apr. 17	Apr. 13	Apr. 17	Apr. 26	Apr. 18	Apr. 25	Apr. 26	Apr. 25	Mar. 17	Mar. 17	Apr. 25	Apr. 21	Apr. 18
Rose-breasted Grosbeak . . . . .	May 8	May 17	May 8	May 8	May 8	May 8	May 4	May 9	May 4	May 8	May 8	May 6	May 16	May 10	May 10	Apr. 25	May 4	May 8
Indigobird . . . . .	May 7	May 17	May 8	May 6	May 6	May 6	May 4	May 9	May 4	May 8	May 8	May 6	May 6	May 10	May 10	May 11	May 4	May 8
Scarlet Tanager . . . . .	May 7	May 15	May 8	May 4	May 4	May 4	May 7	May 6	May 4	May 6	May 6	May 6	May 9	May 7	May 7	May 12	May 6	May 7
Purple Martin . . . . .	Apr. 9	May 9	May 9	May 9	May 9	May 9	May 7	May 6	May 4	May 6	May 6	May 6	May 9	May 7	May 7	Apr. 19	May 6	May 7

NAME.	Moorestown, N. J.	Pensauken, N. J.	Garden, N. J.	Media, Pa.	Swarthmore, Pa.	Collingdale, Pa.	Lansdowne, Pa.	Artmore and Havertford, Pa.	Bryn Mawr, Pa.	Wayne, Pa.	West Philada.	Germanstown, Phila.	Oak Lane and Melrose, Pa.	Fox Chase, Phila.	Holmesburg, Phila.	Frankford, Phila.	Olney, Phila.	Bulk Arrival Phila., 1909.
Cliff Swallow . . . . .	May 2	May 2	May 2	Apr. 25	Apr. 18	Apr. 24	Apr. 25	Apr. 22	Apr. 17	Apr. 17	May 4	May 2	Apr. 8	May 1	May 1	Apr. 9	Apr. 18	Apr. 25
Barn Swallow . . . . .	Apr. 25	Apr. 24	Apr. 22	Apr. 22	Apr. 12	Apr. 21	Apr. 25	Apr. 22	Apr. 17	Apr. 9	Apr. 17	May 2	Apr. 2	May 1	May 1	Apr. 12	Apr. 7	Apr. 21
Tree Swallow . . . . .	May 2	Apr. 11	Apr. 22	May 2	Apr. 12	Apr. 21	Apr. 25	Apr. 24	Apr. 9	Apr. 9	Apr. 9	May 2	Apr. 2	May 1	May 1	Apr. 13	Apr. 19	Apr. 18
Bank Swallow . . . . .	Apr. 24	Apr. 24	May 1	Apr. 18	Apr. 9	Apr. 9	Apr. 25	Apr. 24	Apr. 9	Apr. 22	Apr. 22	May 7	Apr. 2	May 1	May 1	Apr. 12	Apr. 12	Apr. 22
Rough-winged Swallow . . . . .	May 15	May 15	May 16	Apr. 10	Apr. 22	May 10	May 7	May 15	Apr. 22	Apr. 22	May 10	May 29	May 30	May 10	May 10	Apr. 13	Apr. 13	Apr. 13
Cedarbird . . . . .	May 2	Apr. 25	May 16	May 31	Mar. 27	May 10	May 7	May 23	May 9	May 9	May 9	May 8	May 8	May 10	May 10	May 6	May 6	May 7
Red-eyed Vireo . . . . .	May 6	May 17	May 11	May 7	May 6	May 7	May 8	May 16	May 6	May 7	May 7	May 8	May 8	May 10	May 10	May 11	May 11	May 9
Warbling Vireo . . . . .	Apr. 26	May 10	May 23	May 23	May 2	May 3	May 4	May 3	May 3	May 6	May 6	May 3	May 3	May 3	May 3	May 3	May 3	May 6
Yellow-throated Vireo . . . . .	May 3	May 3	May 8	May 8	Apr. 25	May 3	Apr. 18	May 3	Apr. 25	Apr. 25	May 4	May 4	May 4	May 4	May 4	May 4	May 4	May 6
Solitary Vireo . . . . .	May 7	May 2	May 1	May 1	Apr. 25	May 1	Apr. 18	May 3	Apr. 25	Apr. 25	May 4	May 4	May 4	May 4	May 4	May 4	May 4	May 6
White-eyed Vireo . . . . .	May 7	May 2	May 13	May 13	May 2	May 12	May 5	May 4	May 1	May 1	May 1	May 1	Apr. 25	May 1	May 1	May 3	May 3	May 2
Black and White Warbler . . . . .	Apr. 18	Apr. 25	Apr. 27	Apr. 26	Apr. 25	May 2	Apr. 26	May 1	May 4	Apr. 24	Apr. 30	Apr. 22	Apr. 25	May 1	May 1	May 2	Apr. 26	Apr. 27
Worm-eating Warbler . . . . .	May 7	May 7	May 9	Apr. 26	May 5	May 8	May 9	May 9	May 6	May 6	May 6	May 6	May 2	May 2	May 2	May 15	May 15	May 6
Blue-winged Warbler . . . . .	May 6	May 15	May 1	May 3	May 3	May 3	May 4	May 3	May 4	May 7	May 4	May 4	May 2	May 2	May 2	May 6	May 6	May 4
Parula Warbler . . . . .	Apr. 19	Apr. 25	Apr. 27	May 2	May 3	May 4	May 4	May 6	May 4	May 7	May 4	May 4	May 2	May 2	May 2	May 4	May 4	May 2
Yellow Warbler . . . . .	May 8	Apr. 25	May 8	May 2	May 1	May 1	May 1	May 4	May 4	May 6	May 4	May 4	May 2	May 2	May 2	May 4	May 4	May 2
Black-throated Blue Warbler . . . . .	May 2	Apr. 25	Apr. 17	Apr. 18	Apr. 18	May 2	Apr. 21	Apr. 10	May 4	Apr. 17	Apr. 17	May 1	May 2	May 1	May 1	Apr. 19	Apr. 28	Apr. 21
Myrtle Warbler . . . . .	May 8	Apr. 25	May 9	May 9	May 7	May 7	May 7	May 6	May 4	May 8	May 8	May 1	May 2	May 10	May 10	May 15	May 15	May 7
Magnolia Warbler . . . . .	May 7	May 8	May 8	May 9	May 3	May 3	May 4	May 6	May 4	May 8	May 8	May 1	May 16	May 10	May 10	May 11	May 11	May 7
Chestnut-sided Warbler . . . . .	May 7	May 19	May 11	May 13	May 7	May 7	May 9	May 7	May 4	May 8	May 8	May 1	May 16	May 10	May 10	May 11	May 11	May 7
Black-poll Warbler . . . . .	May 7	May 6	May 11	May 12	May 7	May 7	May 9	May 7	May 4	May 8	May 8	May 1	May 23	May 2	May 2	May 13	May 13	May 11
Blackburnian Warbler . . . . .	May 7	May 6	May 12	May 9	May 9	May 9	May 4	May 4	May 4	May 2	May 2	May 2	May 2	May 2	May 2	May 11	May 11	May 11
Black-throated Green Warbler . . . . .	May 6	May 1	May 1	May 2	May 2	May 2	May 3	May 2	May 4	Apr. 30	May 4	May 4	May 2	May 10	May 10	May 12	May 12	May 6

NAME.	Moorestown, N. J.	Pensauken, N. J.	Camden, N. J.	Media, Pa.	Swarthmore, Pa.	Collingdale, Pa.	Lansdowne, Pa.	Ardmore and Havertford, Pa.	Bryn Mawr, Pa.	Wayne, Pa.	West Philadelphia.	Germanstown, Pa.	Oak Lane and Melrose, Pa.	Fox Chase, Phila.	Holmesburg, Phila.	Frankford, Phila.	Olney, Phila.	Bulk Arrival at Phila., 1909.
Pine Warbler . . . . .	May 8	Apr. 17	Apr. 17	Apr. 25	Apr. 22	May 2	May 4	Apr. 17	May 4	Apr. 15	May 1	May 2	May 1	May 2	Apr. 17	Apr. 27	Apr. 29	Apr. 17
Yellow Palm Warbler . . . . .	May 6	Apr. 18	Apr. 18	Apr. 25	Apr. 22	May 2	May 4	Apr. 17	May 4	Apr. 15	May 1	May 2	May 1	May 2	Apr. 17	Apr. 27	Apr. 29	Apr. 17
Frairie Warbler . . . . .	May 3	May 1	Apr. 28	May 4	Apr. 25	May 2	May 4	Apr. 23	May 1	May 1	May 1	May 2	May 1	May 2	Apr. 28	May 2	Apr. 29	May 1
Ovenbird . . . . .	May 3	May 1	Apr. 28	May 4	Apr. 25	May 2	May 4	Apr. 23	May 1	May 1	May 1	May 2	May 1	May 2	Apr. 28	May 2	Apr. 29	May 1
Water Thrush . . . . .	May 23	May 8	May 8	May 2	Apr. 25	May 2	May 4	May 1	May 4	May 2	May 1	May 2	May 1	May 2	May 11	May 6	May 6	May 6
Kentucky Warbler . . . . .	May 2	Apr. 24	Apr. 21	Apr. 26	Apr. 22	May 4	May 4	Apr. 25	May 4	Apr. 19	May 4	May 4	Apr. 25	May 7	Apr. 25	Apr. 28	Apr. 26	Apr. 26
Maryland Yellowthroat . . . . .	May 2	Apr. 24	Apr. 21	Apr. 26	Apr. 22	May 4	May 4	Apr. 25	May 4	Apr. 19	May 4	May 4	Apr. 25	May 7	Apr. 25	Apr. 28	Apr. 26	Apr. 26
Chat . . . . .	May 7	May 9	May 11	May 10	May 1	May 8	May 12	May 8	May 12	May 7	May 8	May 8	May 16	May 10	May 13	May 11	May 9	May 9
Canada Warbler . . . . .	May 7	May 15	May 8	May 4	May 12	May 8	May 12	May 8	May 12	May 7	May 8	May 8	May 16	May 10	May 13	May 11	May 9	May 9
Redstart . . . . .	May 2	May 15	May 8	May 4	May 12	May 8	May 12	May 8	May 12	May 7	May 8	May 8	May 16	May 10	May 13	May 11	May 9	May 9
Catbird . . . . .	May 2	May 2	Apr. 24	Apr. 25	Apr. 24	May 2	May 1	May 1	Apr. 26	Apr. 19	May 4	May 4	May 2	May 1	Apr. 30	May 6	May 4	May 4
Brown Thrasher . . . . .	Apr. 18	Apr. 24	Apr. 21	Apr. 18	Apr. 15	Apr. 9	Apr. 22	Apr. 17	Apr. 26	Apr. 17	Apr. 30	May 2	May 2	May 1	Apr. 30	Apr. 27	Apr. 19	Apr. 19
House Wren . . . . .	Apr. 27	Apr. 24	Apr. 25	Apr. 23	Apr. 25	Apr. 28	Apr. 25	Apr. 17	Apr. 26	Apr. 18	Apr. 17	Apr. 26	Apr. 19	Apr. 22	May 4	Apr. 24	Apr. 18	Apr. 19
Long-bill'd Marsh Wren . . . . .	Apr. 27	Apr. 24	Apr. 25	Apr. 23	Apr. 25	Apr. 28	Apr. 25	Apr. 17	Apr. 26	Apr. 18	Apr. 17	Apr. 26	Apr. 19	Apr. 22	May 4	Apr. 24	Apr. 18	Apr. 19
Ruby-crowned Kinglet . . . . .	Apr. 29	Apr. 17	Apr. 21	Apr. 25	Apr. 12	Apr. 9	May 1	Apr. 9	Apr. 26	Apr. 16	Apr. 7	Apr. 12	Apr. 25	Apr. 15	Apr. 13	Apr. 20	Apr. 13	Apr. 13
Wood Thrush . . . . .	May 5	May 1	Apr. 28	May 1	May 1	May 5	Apr. 30	May 2	May 1	May 1	May 4	May 2	May 6	May 1	May 3	Apr. 24	May 5	May 1
Wilson's Thrush . . . . .	May 1	May 2	May 2	May 2	Apr. 25	Apr. 27	Apr. 27	May 1	May 4	May 2	Apr. 24	Apr. 24	May 8	Apr. 24	Apr. 24	Apr. 24	May 1	May 1
Gray-cheeked Thrush . . . . .	May 8	May 2	May 2	May 2	Apr. 25	May 25	May 25	May 1	May 4	May 2	Apr. 24	Apr. 24	May 8	Apr. 24	Apr. 24	Apr. 24	May 1	May 1
Olive-backed Thrush . . . . .	May 2	Apr. 17	Apr. 13	Apr. 18	May 3	May 6	May 6	May 2	May 10	May 14	May 4	Apr. 18	Apr. 2	Apr. 18	Apr. 18	May 2	May 10	May 10
Hermit Thrush . . . . .	May 2	Apr. 17	Apr. 13	Apr. 18	May 3	Apr. 9	Apr. 13	Mar. 7 <sup>1</sup>	Apr. 1	Mar. 31	Apr. 18	Apr. 2	Apr. 18	Apr. 5	Apr. 5	Apr. 18	Apr. 7	Apr. 7
Robin . . . . .	Feb. 28	Feb. 16	Feb. 20	Mar. 6	Feb. 15	Feb. 16	Feb. 16	Mar. 7	Feb. 19	Mar. 1	Mar. 19	Feb. 6	Feb. 10	Mar. 11	Jan. 27	Feb. 19	Feb. 20	Feb. 20
Bluebird . . . . .	Feb. 15	Feb. 20	Feb. 22	Feb. 14	Feb. 15	Feb. 18	Feb. 16	Feb. 6	Feb. 16	Feb. 7	Feb. 24	Feb. 21	Feb. 5	Mar. 11	Feb. 21	Feb. 16	Feb. 16	Feb. 16

1 Next April 17.

NAMES.	Cape May, N. J. E. 13; S. 72.	Vineland, N. J. E. 7; S. 32.	Downstown, N. J. E. 11; S. 28.	Pitman, N. J. E. 2; S. 15.	Kennett Square, Pa. W. 30; S. 8.	Concordville, Pa. W. 20; S. 5.	West Chester, Pa. W. 24; N. 0.	Rancocas, N. J. E. 16; N. 4.	Beverly, N. J. E. 13; N. 8.	Bordentown, N. J. E. 25; N. 13.	Yardville, N. J. E. 25; N. 15.	Trenton, N. J. E. 23; N. 16.	George School, Pa. E. 11; N. 18.	Easton, Pa. W. 2; N. 50.	Perkasie, Pa. W. 7; N. 28.	Marietta, Pa. W. 74; N. 7.	Lopez, Pa. W. 60; N. 103.
Flicker.....	Mar. 30	.....	Mar. 28	.....	.....	.....	Res.	Mar. 1	Feb. 21	Res.	Feb. 24	Res.	Res.	Apr. 3	Mar. 12	.....	Apr. 12
Whip-poor-will.....	Apr. 23	Apr. 12	Apr. 15	.....	.....	Apr. 18	.....	Apr. 15	.....	May 2	.....	May 3	May 7	May 16	May 15	.....	May 8
Nighthawk.....	.....	.....	.....	.....	.....	.....	.....	May 16	.....	May 12	.....	May 3	May 7	May 16	May 15	.....	.....
Chimney Swift.....	Apr. 29	May 4	May 6	Apr. 24	Apr. 18	Apr. 22	Apr. 23	Apr. 22	Apr. 25	Apr. 21	Apr. 30	Apr. 25	Apr. 23	Apr. 17	Apr. 22	Apr. 18	May 12
Hummingbird.....	May 2	May 12	May 18	.....	.....	.....	.....	May 8	May 8	May 15	May 10	May 6	May 17	May 15	May 31	.....	May 24
Kingbird.....	May 2	May 5	Apr. 24	May 8	May 1	May 1	.....	May 8	.....	Apr. 6	May 6	May 10	May 5	May 8	May 9	May 14	May 11
Great-crested Flycatcher.....	.....	May 5	May 6	.....	.....	May 6	May 8	May 5	May 9	Apr. 25	May 10	May 4	May 4	May 8	May 4	May 20	.....
Phoebe.....	.....	Mar. 30	.....	.....	Mar. 24	Mar. 20	Mar. 18	Apr. 4	Mar. 21	Mar. 18	Mar. 29	Mar. 27	Mar. 21	.....	Apr. 5	Mar. 20	Apr. 2
Bobolink.....	May 13	.....	.....	.....	May 7	.....	May 3	.....	.....	.....	May 31	.....	May 7	.....	May 10	May 11	.....
Cowbird.....	Res.	.....	.....	.....	Apr. 6	.....	.....	.....	.....	Mar. 31	.....	Apr. 7	Mar. 27	Feb. 27	Apr. 10	.....	.....
Red-winged Blackbird.....	Res.	Feb. 26	Mar. 8	Feb. 16	Feb. 15	Feb. 22	.....	Feb. 23	Mar. 10	Apr. 9	Mar. 15	Feb. 16	Feb. 19	.....	Mar. 12	Mar. 12	Mar. 12
Baltimore Oriole.....	May 2	.....	Apr. 30	May 12	May 2	May 2	May 3	May 7	May 1	May 12	May 9	May 9	May 6	May 5	May 5	May 5	May 16
Purple Grackle.....	Feb. 13	Feb. 26	Apr. 18	.....	Feb. 5	Feb. 5	.....	Feb. 15	Feb. 20	Mar. 10	Feb. 14	.....	Feb. 15	Feb. 22	Feb. 23	Mar. 7	.....
Chipping Sparrow.....	Apr. 2	Mar. 31	Apr. 3	Mar. 28	Apr. 6	Apr. 1	.....	Apr. 3	Apr. 1	Mar. 20	Mar. 20	Apr. 3	Apr. 7	Apr. 6	Apr. 6	Mar. 29	Apr. 16
Chewink.....	Mar. 8	May 2	Apr. 20	Apr. 17	Apr. 23	Apr. 17	Apr. 19	Apr. 18	Apr. 22	Apr. 26	Apr. 18	Apr. 19	Apr. 25	Apr. 28	Apr. 28	.....	May 3
Indigobird.....	Apr. 29	May 7	.....	.....	May 12	May 7	May 8	May 11	May 9	May 16	May 11	May 9	May 7	May 8	May 15	May 10	May 11
Scarlet Tanager.....	May 13	May 12	May 12	May 9	May 11	May 6	May 14	May 11	May 9	May 16	May 11	May 9	May 7	May 14	.....	May 12	May 16
Purple Martin.....	Apr. 11	May 14	Apr. 19	Apr. 17	Apr. 19	Apr. 23	Apr. 6	.....	.....	Apr. 6	.....	.....	.....	.....	.....	.....	.....
Barn Swallow.....	Apr. 11	Apr. 8	May 2	Apr. 25	Apr. 17	Apr. 19	.....	Apr. 25	May 2	May 1	Apr. 30	Apr. 9	Apr. 24	Apr. 30	Apr. 25	.....	Apr. 30
Red-eyed Vireo.....	.....	May 4	May 12	.....	.....	May 1	.....	May 6	May 5	May 2	May 1	Apr. 30	Apr. 9	Apr. 24	Apr. 30	Apr. 25	.....
Black and White Warbler.....	.....	.....	May 4	.....	Apr. 30	Apr. 18	May 2	Apr. 23	Apr. 24	Apr. 17	May 1	May 1	Apr. 26	Apr. 22	.....	.....	May 9
Chestnut-sided Warbler.....	.....	.....	.....	.....	May 11	May 7	May 8	May 9	May 9	Apr. 26	.....	May 7	May 7	May 8	May 8	.....	May 8
Ovenbird.....	.....	.....	May 4	.....	May 2	Apr. 23	May 6	May 5	May 2	Apr. 26	Apr. 27	May 2	May 16	Apr. 26	Apr. 25	May 3	May 7
Maryland Yellowthroat.....	Apr. 29	May 4	May 2	.....	Apr. 23	Apr. 19	May 8	Apr. 27	May 2	May 16	Apr. 26	Apr. 25	May 3	May 1	May 6	.....	May 8
Chat.....	.....	May 6	May 12	.....	May 13	May 8	.....	May 9	May 2	May 10	May 13	May 13	May 10	May 8	May 15	.....	May 7
Catbird.....	Apr. 6	Apr. 25	May 2	May 9	May 2	Apr. 24	Apr. 26	Apr. 27	May 2	Apr. 26	May 4	Apr. 26	May 3	May 1	May 6	Apr. 15	May 12
Brown Thrasher.....	Apr. 23	May 5	Apr. 22	.....	Apr. 28	Apr. 16	Apr. 19	Apr. 18	Apr. 22	Apr. 25	Apr. 18	Apr. 16	Apr. 24	Apr. 17	Apr. 16	Apr. 4	May 4
House Wren.....	Apr. 23	May 7	Apr. 26	.....	Apr. 19	Apr. 18	Apr. 21	May 6	Apr. 23	Apr. 26	Apr. 19	Apr. 19	Apr. 25	Apr. 24	May 4	Apr. 25	May 8
Wood Thrush.....	Apr. 23	.....	May 12	.....	May 2	May 1	May 2	May 5	May 2	Apr. 23	May 7	Apr. 28	May 3	May 1	May 6	.....	.....
Hermit Thrush.....	Apr. 8	Mar. 31	.....	.....	Apr. 17	.....	.....	.....	.....	.....	.....	Apr. 24	Mar. 21	Apr. 17	Apr. 7	Apr. 10	Apr. 2
Robin.....	Res.	Mar. 5	Mar. 9	Mar. 2	Mar. 7	Mar. 1	.....	Feb. 19	Feb. 28	Res.	Mar. 10	Res.	Mar. 9	Feb. 27	Feb. 23	Mar. 10	Mar. 10
Bluebird.....	Res.	Res.	Res.	Mar. 1	.....	Feb. 21	.....	Res.	Feb. 21	Res.	Feb. 27	Res.	Res.	Res.	Feb. 23	Mar. 2	Feb. 21

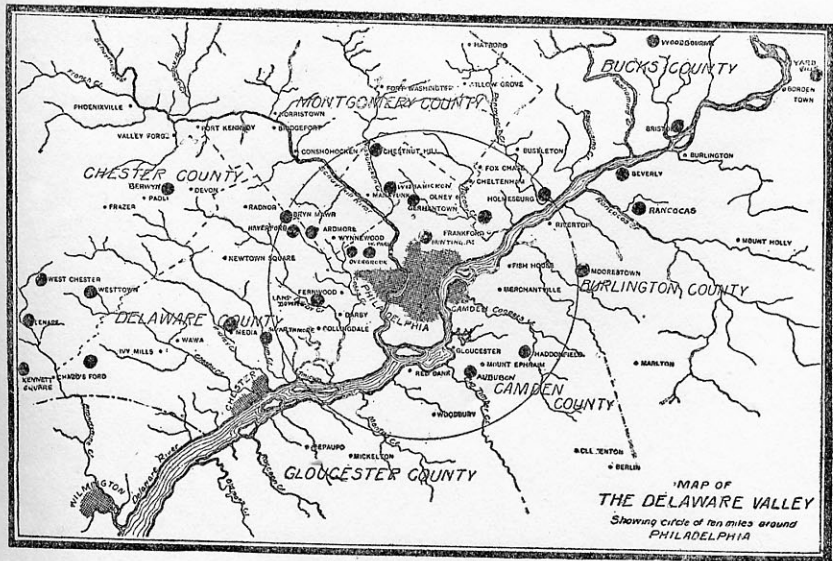


TABLE II.  
 SPRING MIGRATION, 1909.  
 EARLIEST DATES OF ARRIVAL OF THIRTY-TWO SPECIES  
 AT SEVENTEEN STATIONS OUTSIDE THE PHILADELPHIA  
 CIRCLE.