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WARREN FRANCIS EATON

1900....1936

WARREN FRANCIS EATON

1900 - 1936

Warren Francis Eaton, ex-president of the Linnaean Society of New York, and one of the most forceful and vigorous workers of his generation in the cause of bird conservation, passed away at Mountainside Hospital, Montclair, N. J., on February 16, 1936.

Born in the town of Weston, Mass., the son of Mr. and Mrs. Charles Eaton, he manifested at a tender age an interest in nature and especially in birds. Much of his spare time and recreation as a child, as a pupil in school, and as a student at Harvard, from which he was graduated in 1922, was devoted to a study of bird life.

Possessed of a strong constitution and a wiry physique, he was able to indulge to a full his love for the outdoors and for all natural sciences. The wild trails of the Green Mountains he often explored and he contributed substantially while still a student in college to the knowledge of the bird life of that region. He revelled in the ornithological associations life at Cambridge permitted and he there became an active member of the Nuttall Ornithological Club, serving as its secretary.

From New England he came to New York, entering the cotton goods business. But his heart and his paramount interest were with the birds in their struggle to hold place before man's progressive occupancy of the country. His was not a maudlin sentiment—rather a most masculine interest in the fate of the losers in the struggle to survive. This is well shown by his early and sustained interest in the Hawks and the Owls—predators all, preying upon other forms of life in their effort to sustain themselves. But the friendlessness of these much-harried bird forms and the growing danger of their extermination led Mr. Eaton to assert his natural aggressiveness and to push himself to the front as their protector and champion.

Warren Eaton gloried in the birds of prey, his adoration amounting almost to an obsession. He was the prime mover and organizer of the Hawk and Owl Society and he threw his energies into the fight even though many friends of the predatory birds felt their cause lost. Long odds against him never daunted Warren Eaton. As president of the Hawk and Owl Society and later as head of the Hawk and

Owl protection work of the National Association of Audubon Societies, he carried his fight into the enemies' camp and he won, and was ever winning for himself and his cause, wider recognition and respect among game officials and sportsmen's organizations.

Then death overtook him. Cut off in the full bloom of his vigorous manhood—he was but 35 years old—his loss was a tragic blow, not only to his family and friends, but to the great cause of conservation in general and to the future of our predatory birds in particular.

Warren Eaton was a veritable dynamo, constantly creating energy and a will to do; a prodigious worker and a resourceful general. His labors in behalf of the Linnaean Society of New York, which he joined in 1924, have contributed definitely to the growth and interest in the organization. He served for a number of years as a member of its council, also as secretary, vice-president and president. It was Mr. Eaton who initiated the monthly summer meetings, so interesting to the active field workers of the Society.

Mr. Eaton's contribution to the knowledge of the bird life of his adopted state, New Jersey, was already considerable at the time of his death. His historical survey of the Birds of Essex and Hudson Counties, which he finished shortly before his fatal illness and which is published herewith, gives proof of his enthusiasm, his willingness to search right into the city doorsteps and wastebaskets for the facts of bird distribution, and the intensity of his search of the literature for knowledge of the past. He was an avid reader. He had just started a similar study of the birds of Passaic County, N. J., and he had identified himself with various state organizations formed to gather greater knowledge of the birds of the state—the New Jersey Ornithological Society, which he founded, and the New Jersey Field Ornithologists Club, with which he affiliated.

It is rare indeed that nature, in the strange intricacies of her ways in planting within us humans the seeds of our contrasting attributes, bestows upon any individual such an unusual combination of superlative enthusiasm for a cause and such outstanding ability effectively to labor in its behalf. In the passing of Warren Eaton the cause of conservation and the pastime of field ornithology have lost an aggressive leader, with a potential for constantly expanding achievement. The members of the Linnaean Society of New York have lost a treasured and a stimulating companionship.—C. A. U.

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A List of the Birds of Essex Co. and of Hudson Co., N. J. With Especial Reference to City Growth and Bird Population

By Warren F. Eaton

The excellent papers published in the Abstract of Proceedings of the Linnæan Society, "The Observations of the Late E. P. Bicknell at Riverdale, Fifty Years Ago" by Ludlow Griscom, "The Birds of the Greater Bronx Region" by John F. Kuerzi and the "Birds of the Union County Region" by C. A. Urner, have served as inspiration for this paper. Whereas Mr. Griscom's article was largely a summary of the results of Mr. Bicknell's observations and Mr. Urner's was practically his own alone, this list is a combination of records by the writer from 1925 to September, 1935, with the field data of numerous observers in the areas considered. In 1930 the Montclair Bird Club compiled a mimeographed list of 271 species, entitled "Preliminary list of the birds of the Essex County Region," which has been largely drawn upon for Essex County records. I am greatly indebted to the following persons, chiefly members of the Montclair Bird Club or of the Linnæan Society for their notes and to a less extent to others mentioned in the text itself: Messrs. James L. Edwards (J. L. E.), Charles A. Urner (C. A. U.), Robert Clausen (R. C.), R. F. Haulenbeek (R. F. H.), R. H. Howland (R. H. H.), William Rusling (W. R.), E. I. Stearns, Jr. (E. S.), Louis S. Kohler (L. S. K.), Lester L. Walsh (L. L. W.), Floyd Wolfarth (F. W.), Evarts Loomis (E. L.), O. P. Medsger (O. P. M.), Edward Chaliff (E. C.), E. S. Marks (E. S. M.) and to Mrs.

C. S. Hegeman (Mrs. C. S. H.) and Mrs. Laura W. Abbott (Mrs. L. W. A.).* Dr. James P. Chapin also, kindly put at my disposal the few notes of the late W. de W. Miller on birds of these two counties.

Thanks are due Miss Eleanor Herrick for the opportunity of quoting from her grandfather's diary (Mr. Harold Herrick, late member of the Linnæan Society), and the well-known papers of Dr. Witmer Stone, the "Birds of New Jersey" (1909), Mr. C. A. Urner, "The Birds of Union County" and Mr. Ludlow Griscom's "Birds of the New York City Region" have served as sources.

My personal observations have been distributed in both counties and over all the months of the year as follows:

FIELD TRIPS

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Essex - - -	33	34	31	48	51	52	35	32	26	39	27	36
Hudson - - -	6	3	3	4	4	11	10	4	3	4	3	1
	39	37	29	46	49	57	38	35	29	43	30	37

These all represent trips of considerable length in the field from an hour or so, to full days, chiefly on foot in the most desirable places. In addition, I have made many scattering observations by train or ferry in my daily commuting through the two counties, across the Hackensack Meadows and the Hudson River to New York. I have also not counted as trips the numerous short observations of a few moments duration in the vicinity of my residence in Upper Montclair. Except for limited vacations or absences I have seen some interesting bird or other nearly every day of the year in the region considered. My friends have been most indefatigable in reporting notable finds or unusual observations. Literature published has been consulted, museum collections checked, and old residents interviewed in the hope of adding to the total knowledge of this area. In the annotated list I have excluded records of adjacent Union, Bergen, Morris and Passaic Counties, confining the records strictly to the counties considered although a number of species are thereby eliminated. It is admitted that this definition is an artificial one, but as the survey is not ecological but distributional, I have let it go at that; for a study of the Palisades,

*Initials are those used in the annotated list.

the Passaic Valley and the Hackensack Valley or the Watchung Mountains, of which the two counties are a part, would carry us far afield.

The chief factor underlying my concept of the paper is the effect of human population upon the wild bird-life. To understand this, remember that the total area of Hudson is 43 square miles, of Essex 127 square miles, while the population in 1930 (since increased) was Hudson 691,000 and Essex 832,300, a total of 1,523,300 in an area of 170 square miles or an average density of 9,495 per square mile. Forty years earlier the density was only one-third or 3,124 per square mile. Such a tremendous growth has had a rapid and very adverse effect upon the bird-life (for comparative population and area figures, see table I).

TABLE I

Population (From World Almanac)

New Jersey

7,154 Square Miles

1790	184,000	1870	906,000
1800	211,000	1880	1,131,000
1810	246,000	1890	1,444,000
1820	278,000	1900	1,884,000
1830	321,000	1910	2,537,000
1840	373,000	1920	3,156,000
1850	490,000	1930	4,041,000
1860	672,000		

Year	Essex 127 sq. mi.	Hudson 43 sq. mi.	Union 103 sq. mi.	Year	Bergen 237 sq. mi.	Passaic 196 sq. mi.	Morris 475 sq. mi.
1890	256,000	275,000	72,000	1890	47,000	105,000	54,000
1900	359,000	386,000	99,000	1900	78,000	155,000	65,000
1910	513,000	537,000	140,000	1910	138,000	216,000	75,000
1920	652,000	629,000	200,000	1920	211,000	259,000	83,000
1930	832,307	691,000	305,000	1930	365,000	302,000	110,000

People Per Square Mile

New Jersey	565	Bergen	1,600
Union	3,000	Passaic	1,500
Hudson	16,000	Morris	230
Essex	6,600		

Hudson-Essex — 170 square miles	Population 1930 — 1,523,000
Average per square mile in 1890 — 3,124	Average per sq. mi. in 1930 — 8,960

Other considerations are at once evident from any road map—that Hudson County is very largely surrounded by water, in fact con-

tains a large proportion of tide water area, and that the Hackensack River meadow portion west of Bergen Hill is very sparsely peopled. Essex County contains a smaller portion of water surface on Newark Bay and the Passaic River, but west of the second Watchung Ridge is a considerable block of land in the Great Piece Meadow-Hatfield Swamp section of the Passaic Valley which is unsettled. There is also a considerable portion of park land in the South Mountain Reservation, of "waste" land at Port Newark and of farm land in the Caldwell-Livingston area. It is probably a safe guess that in one hundred of the 170 square miles the population therefore approximates 14,000 persons to the mile. The large cities of Newark, Jersey City, East Orange, Hoboken, Bayonne, Weehawken, Kearney, etc., would seem to preclude any great variety of bird-life.

It is well to bear in mind that Hudson County is bounded on the east for its whole extent (13 miles) by the Hudson River and Upper New York Bay, and on the west by Newark Bay and the Passaic River, being cut in two and bounded also by the Hackensack River, both wide, tidal streams now navigable for large ships. Three-quarters of Newark Bay and more than half of New York Bay from St. George, S. I., north, is within our area. About half of the primitive Hackensack Marsh and the Newark-Elizabeth Meadows are included. Half the route of the New York-Staten Island Ferry passes through Hudson County which includes also Ellis and Bedloe's (Statue of Liberty) Islands, Robbins Reef, and such interesting areas as Snake and Little Snake Hills, and the Secaucus cedar swamps. Reverting back to primitive days, it is obvious that here the combination of salt water and rocky islands, tidal marsh and wooded islands, brackish cedar swamp and wet meadow, high and heavily wooded ridges, three big rivers, numerous creeks and clear upland brooks, fresh water swamps of great extent and large sections of trap rock ridges over 400 feet in height combined to make ideal conditions for concentration of bird-life. Furthermore, the latitude is such that it is almost the junction point of the Transition and Carolinian wild-life zones and also the theoretical junction point of the streams of bird migration following Long Island from east to west, the Hudson north to south, the Hackensack Valley and the Watchung ridge.

In early days all the tidal bays were abundantly stocked with fish, shellfish and sea food of all sorts and the hills with forest foods, such as mast, berries, fruits and the like. Diversity of environment meant diversity and concentration of bird life. Remnants of the once great wild-life population remain and a certain bit of historical data assists in reconstructing the past. The Golden Plover still follow their ancestral routes to the Newark Meadows, the fresh-water ducks still use the Hackensack flyway, the salt-water species still migrate on the Hudson and winter in New York Bay, the hawks still move northward along the Watchung ridge in spring and the floods of land birds seek resting places where once were fine wooded areas harboring the countless thousands of the wild or Passenger Pigeons. Only remnants of the above remain but still they are most interest-compelling; the full truth we shall never know. Quite conceivably the Purple Sandpiper wintered on the rocky shores of the Kill van Kull, or the Oystercatcher summered at Caven Point, the eagle nested in the tall trees of the Palisades, mergansers in the cedar swamps of the meadows, the Pileated Woodpecker on the wooded slope of the trap-rock ridges, the Labrador Duck fed on the sea foods of Robbins Reef, the Great Auk swam in and out of the narrows in New York Bay. Probably the great swans fed in white flocks on Newark Bay just as they do today on the Chesapeake, the Skimmers on the ponds of the Newark Marshes as now at Brigantine Beach, and the Golden Eagle pursued wild game on Bergen Hill as it wandered over from the highlands of the Hudson. Undoubtedly, the Wild Turkey feasted in the oak woods, the Clapper and King Rails clamored on the salt and fresh marshes, the Red-tailed Hawk raised its young on the crest of Snake Hill. Possibly a few Pinnated Grouse once existed on the open dryer meadow or in the piedmont country east of the first mountain, the Carolina Parrakeet once wandered about in its erratic course or the American Egret may have reached its northernmost nesting ground in the stand of bald cypress trees whose stumps may still be seen along the sluggish stream (Frank Creek today), tributary to the Passaic not far from the present Manhattan transfer. Most of these word pictures are conjecture but enough evidence can be quoted to furnish confirmation of the vast changes that have taken place.

The following passages are taken from published works and fragmentary as they are certainly stir the imagination:

"All the way to Newark (9 miles) is a very flat, marshy country, intersected with rivers, many cedar swamps, abounding with mosquitoes, which bit our legs, and hands exceedingly; where they fix they will continue sucking our blood if not disturbed, till they swell four times their ordinary size, when they absolutely fall off and burst from their fullness. At two miles we cross a large cedar swamp; at three miles we intersect the road leading to Bergen, a Dutch town, half a mile on our right; at five miles we cross Hackensack (at Dow's ferry), at six we cross Passaic River (coaches and all) in a scowl, by means of pulling a rope fastened to the opposite side" (about 1780).[1]

"Nature had furnished the country with all sorts of wild beasts and fowl, which gave them their food and much of their clothing. Fat venison, turkeys, geese, heath-hens, cranes, swans, ducks, pigeons and the like."[2]

"Formerly the passage from Powles hook to Bergen was through a slough; but it is now a fine smooth road. The rivers, Hackensack and Passaic were, until about 15 years ago passed in flats at ferries" (1807).[3]

Practically but sketchily, the geography of today may be described from an ornithological point of view as follows:

Hudson County

Almost completely built up on Bergen Hill and east; along Hudson, Hackensack and Passaic Rivers, Newark and New York Bays, various water birds may be observed, especially in migration. There are various spots where a residuum of land bird life may always be found, Castle Point (Hoboken), Black Tom, Caven Point, Droyer's Point, etc., all areas now very much despoiled. North Hudson Park, and to a lesser extent City Park and Hudson County Parks, Bayonne, and Westside Park, Jersey City, contain a better representation but the only spots which can even remotely be described as interesting birding are the Snake Hill area on the meadows, the Arlington Cemetery area in West Hudson and the Secaucus and New Durham-Fairview areas of the Hackensack Meadows. North Hudson and Westside Parks and the Arlington Cemetery localities are like Central Park in New York City, excellent for May and September migrations. The

[1]Old Roads From the Heart of New York by Sarah Comstock, N. Y., 1917. P. 140.
[2]P. 170 from Denton's Brief Description.
[3]From "The Picture of New York; or the Traveller's Guide, etc., 1807." P. 14.

marsh area at Secaucus "airport" has been at times very excellent for shorebird migrants, and the swamp near Fairview as well as the former spot still contain a few fresh water swamp breeders such as the gallinules and rails. The ponds beside the Erie railroad at Croxton near Snake Hill, and the marshes at New Durham and Secaucus are well worth visits at all seasons.

Essex County

After recognizing the marvelous facilities for all sorts of shorebirds, gulls, herons, ducks, hawks and owls at the Port Newark section of the Newark-Elizabeth Marshes as the best single place in Essex County (and from 1928 to 1933 in the New York region), for real rarities, it is well to glance at the map of the western edge of the county. Here, along the Passaic River from Singac to Chatham, are a number of connecting marsh areas which offer exceptional variety—the Great Piece Meadows, Swinefield Bridge, Pine Brook, Hatfield Swamp, and Dickinson's Neck. In these areas are ducks in migration, hawks and owls nesting, migrants and winter residents of all kinds, a distinct touch of the Carolinian zone and above all a most interesting and comparatively wild terrain. The Montclair area, so-called, contains a considerable percentage of high, wooded trap-rock (over 400 ft.) on the first and second mountains, cut by the Peckman River at Verona and sliced into sections on the east by the second and third rivers (the latter known as the Notch Brook or Yantacaw River). Of the parks, the best is the big wooded region of the Orange Reservation, drained to the south by the north branch of the Rahway River and the next best, the first river area now called Branch Brook Park in Newark. Here, for migrants and summer residents, is what Central Park was thirty years ago, a very fine land bird study area. Other parks are smaller but better still than similar Hudson County areas—Weequahic (Newark), Verona Lake (Verona), Grover Cleveland Park (Caldwell), Nishuane, Anderson and Mountainside Parks (Montclair), and Yantacaw Park (Nutley). Another feature must not be overlooked, the fresh water pond or reservoir areas; chief of these for productive records is the East Orange or Commonwealth Watershed Reservoir south of South Orange Avenue in Livingston, which is a bird sanctuary, the Orange Reservoir in the Reservation, the Cedar

Grove Reservoir, Verona Lake and Oakes Pond where fresh water ducks, or marsh birds may be found at times.

To glance at these geographic areas from an ecological point of view and boiling them to their minimum, we may summarize as follows:[4] (See map.)

		Typical Native Bird
I.	Salt Water - - - - - - - - - -	Herring Gull
II.	Salt Water Marsh - - - - - - - -	Sharp-tailed Sparrow
III.	Brackish Marsh - - - - - - - -	Long-billed Marsh Wren
IV.	Piedmont Upland chiefly Sandstone -	Robin
V.	Traprock Upland - - - - - - - -	Chewink
VI.	Passaic Valley Fresh Water Lowland	Tufted Titmouse

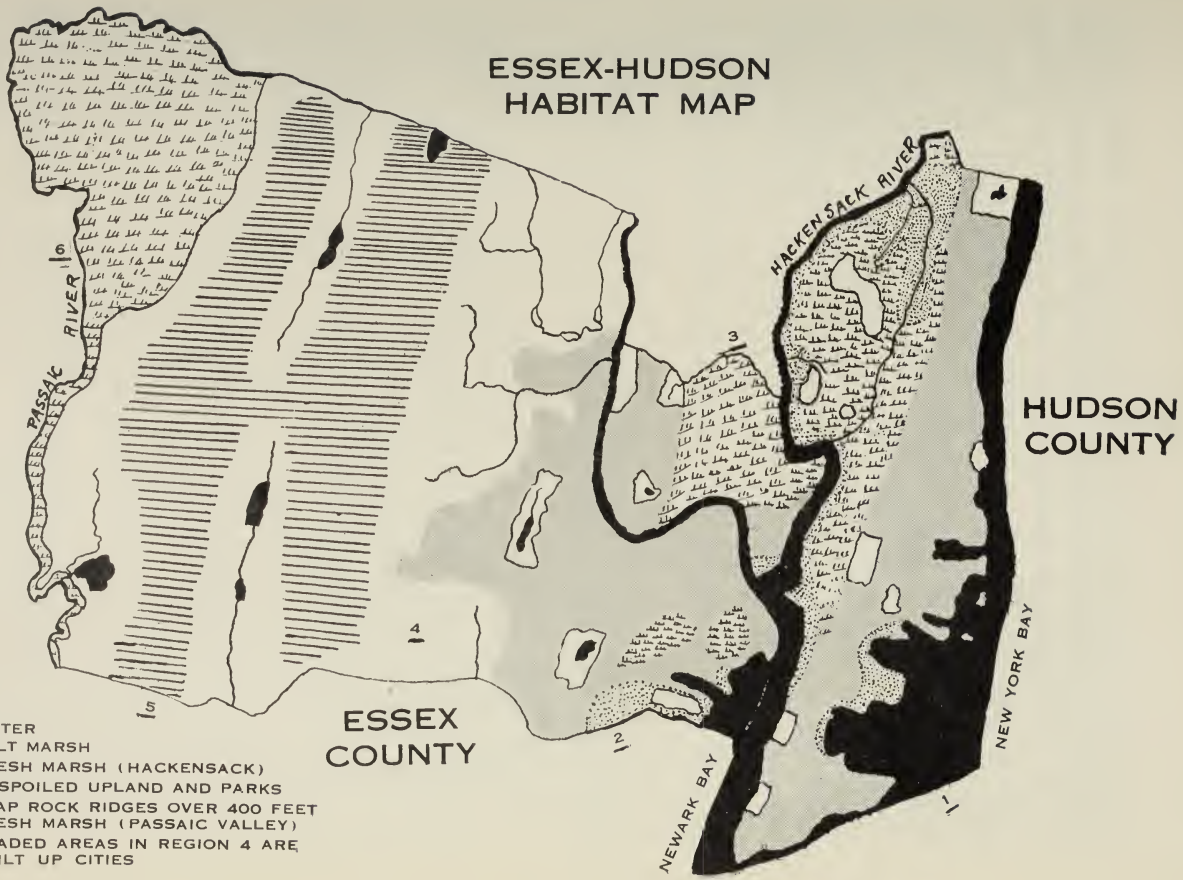
The botany of II and III has been summarized under the title "The Vegetation of the Hackensack Marsh, a typical American Fen" by J. W. Harshberger and V. A. Burns[5] and may be checked readily. It is sufficient to say that the most generally distributed plants are *Phragmites communis, Typha angustifolia* and *T. latifolia,* and *Spartina* grasses (*Glabra var. pilosa* and *G. patens*).

Typical of the piedmont upland are the Red Maple (*Acer rubrum*), Tupelo (*Nyssa sylvatica*), Sassafras (*S. sassafras*), and the Sweet Gum (*Liquidambar styraciflua*). On the trap-rock upland, trees are chiefly oak in character, the Chestnut (*prinus*), Red (*rubra*), White (*alba*), and Black (*velutina*) species being interspersed with Tulip Poplars (*Liriodendron tulipifera*) and Beech (*Fagus Americana*). Along the Passaic River valley the Red Birch (*Betula nigra*), the Swamp White Oak (*plantanoides*), Pin Oak (*palustris*), the Elm (*Ulmus americana*) and Hornbeam (*Carpinus Carolina*) are also typical. The Chestnut (*Castanea dentata*) was formerly one of the best trees of the upland, now destroyed by blight except for various small root-shoots, and the elm blight bids fair to do the same in exterminating this fine tree (*Ulmus americana*).

Historically there is considerable of value to compile from Hudson County. Messrs. E. S. Marks, L. S. Kohler and O. P. Medsger have

[4] See Table VII.

[5] May 1919, Vol. IX, Part 1, Trans. of Wagner Free Inst. of Science of Philadelphia.


ESSEX-HUDSON
HABITAT MAP
HACKENSACK RIVER
PASSAIC RIVER
HUDSON
COUNTY
ESSEX
COUNTY
NEWARK BAY
NEW YORK BAY
1 WATER
2 SALT MARSH
3 FRESH MARSH (HACKENSACK)
4 UNSPOILED UPLAND AND PARKS
5 TRAP ROCK RIDGES OVER 400 FEET
6 FRESH MARSH (PASSAIC VALLEY)
SHADED AREAS IN REGION 4 ARE
BUILT UP CITIES

worked this region for many years (1905 and ff.) and have kindly supplied a great detail of local material. Years ago Snake Hill was much more heavily wooded than today, the Secaucus cedar swamps and the tangle to the west of the Secaucus County road were much more suited to a variety of breeding species. The large cedar swamps south of Kingsland Creek were destroyed during the Civil War. The Arlington Ridge, including the present Arlington Cemetery and Schuyler's Woods (now gone), were fruitful nesting and migration areas up to about fifteen years ago. The Bergen Hill area, however, was destroyed much further back (before 1880) as described in fragments taken from Shaw's History of Essex and Hudson Counties (1884) as follows: P. 1300—[6]:

Mr. Andrew Anderson, first postmaster, West Hoboken, N. J., says:

"This region, in later years, was my gunning ground. I found here partridges, quail, woodcock, snipes, etc. Rabbits were plenty."

P. 1295/6[6]—Union Township:

Coons, rabbits and squirrels common.

"One would think nothing of shooting 2 or 3 high-olders at a shot off a dogwood tree. These birds with robins and wild pigeons, were plentiful in Dickies' woods and about Price's property. 'I have known,' is the remark of an old resident, 'the gunners to shoot 5 or 6 dozen robins in a short time'; I have myself shot 28 or 29 wild pigeons before breakfast. The river region was a resort too, for game; Michael Carley, who died in his eighty-second year about 22 years ago (1862) had a taste for the sport of gunning and made it a source of profit. His sons were excellent hunters too . . . and were fond of gunning on the land for pigeons and robins; basketfuls of these birds were sold by them in the city market. Father was more partial to the river. He used to fetch plenty of ducks home. Occasionally he had the luck to get a wild goose."

P. 1286/1287[6]:

Mentions moose, deer and elk in old days.

North Bergen

"Along the Hackensack the reports of fowling-pieces were frequent. Game there in certain seasons was abundant."

J. Frazier Kinzie ". . . appear the robin, owls and wren, with blackbirds, bluebirds and meadowlarks."

[6]Shaw's History of Essex and Hudson Counties.

Conrad Rapp . . . "gained many a partridge. He found the quail without difficulty. 'I have seen him,' remarks a neighbor, 'come in with 15 squirrels and other game . . . made his living out of this pursuit for many years.'"

Snipe shooting on the meadows[7] and duck and rail shooting continue after a fashion to the present day. Specimens may be found in many a saloon or club attesting to the local nimrod's skill. An entertaining reference to Snake Hill is in Frank Forester's account of the "Dunkerdoo" or bittern which he obviously confused with the Night Heron or Quawk which formerly perhaps nested on Snake Hill. On an old print of the meadows I ran across a picture of the cedar swamps and Snake Hill wooded to the water's edge probably with great trees like those at Inwood on the north end of Manhattan Island.

From 1898 to 1910, Mr. R. S. Lemmon, then living in Englewood, testifies he found excellent shooting on the lower Overpeck and Hackensack from Englewood to Fairview. On the brackish area of the salt marsh and along these streams, snipe were shot from about March 10 till May, with the best flight about April 15 and as late as April 22 one year. One bag numbered twenty birds in a four hour afternoon. Woodcock were found on the uplands and Quail prior to 1903 and 1904 but the former were rather rare and the latter soon disappeared. It was the flight shooting of snipe, rail and ducks that attracted the active gunners to the meadows. In the fall, the rail flights usually reached a maximum Sept. 15-18 when, with a big tide, it was sometimes possible to get 40 up to 70 birds in a day, chiefly Soras, rarely Virginias and regularly a few King Rail. The fall duck shooting was chiefly teal (Blue-wing), Blacks and Mallards in September, followed by a few diving ducks after northeast storms later in the fall; the best flocks of geese, Scaup and Pintail passed north in spring. Raptorial birds were often noted. In the springs, 1898 to 1899, eagles were frequently seen; the Osprey nested till 1898 on the Overpeck and in some winters 4 or 5 "great white owls" appeared with the usual wintering Red-tails and Rough-legs.

[7] See Aug., 1932, p. 34 and 35. The Sink-hole by R. S. Lemmon. **Field and Stream.**

For Essex County there is even more material available. Frank Forester apparently lived in Belleville for a time as he says of the Green-winged Teal:[8]

"In the spring of 1846, a couple of these birds haunted a small reedy island in front of my house on the Passaic till May 29."

He then complains they were frightened away by "rough-necks" from the neighboring town of Newark. Old-timers now living still tell of the beauties of the Passaic River in this locality before it was polluted and when there was still fine fishing to be had from small boat or river bank.

The late Harry Trippett, of Montclair, in the eighties and nineties did considerable nesting and field work in what we now describe as the Montclair region. On February 21, 1931, I called on him at his house and now summarize our conversation from my notes: In those days, the thick woods came unbroken to Upper Mountain Avenue, Montclair; below were farms with fields of clover, wheat, rye and hay, where the farmers alternated their crops. Along Toney's Brook where Edgemont Park now is, Bobolinks and Meadowlarks were formerly abundant breeders. He felt practically all birds were (1931) less common, especially such as the Baltimore Oriole and the Scarlet Tanager. The eggs of the latter were used in exchange and he recalled taking as many as twenty in an afternoon, obtained along the first Watchung Ridge which were later traded for a loon egg on a basis of 25 to 1. In the summer breeding season he and a companion by diligent search recorded 107 species of which 93 nested. He had local specimens of the Barn Owl, Broad-winged, Red-shouldered, Pigeon and Sharp-shinned Hawks. The first was taken from a barn in Bloomfield near the cemetery where they were formerly found regularly. He had not found the Barred Owl nesting in Montclair but did find one in West Caldwell inhabiting a nest which had been used by a Crow the year before, after renovating by adding a few sticks. The only Red-tailed Hawk nests were two, found on the second Watchung Ridge in Caldwell, about 1890 or before. He told a story of a Ruffed Grouse nest located by his brother which he visited but even when standing at the base of the tree where it was he could not locate the

[8] American Game, 1873, p. 245.

setting bird as it sat close on its eggs and did not flush until approached within five paces. He said Screech Owls were formerly common in the apple trees and could be traced by pellets, but now all the old trees are gone.

One of the best posted of the local hunters was the late Peter Speer, born in Little Falls, N. J., September 8, 1836 (d. 1935) who moved to his home on Upper Mountain Avenue, Montclair Heights, in 1854. His Dutch farmhouse (built cir. 1735) had been the home of his great grandfather and his grandfather, together with all the land thereabouts, which was called Speertown. His father ran a farm with 15 teams of horses and raised corn, wheat, oats, rye and buckwheat. Decrease of the growth of these crops, and excessive and illegal shooting have been the great factors in destroying Quail which were formerly plentiful. Mr. Speer started hunting at the age of twelve and stated that before the Erie Railroad was put through (about 1870), the hills were never burned over and Ruffed Grouse were very abundant on the ridges. It was possible to shoot ten grouse in a day but later they became wilder and he shot his last bird in the fall about 1920. The yearly fires which burn the undergrowth on the ridges, killed the plants which supplied berries and food for the birds and destroyed their cover. He has whipped hundreds of trout from the Notch Brook which was a famous trout stream and which formerly had a much greater volume of water than now, fed by the springs "in the lots." In the meadow along this brook he would think nothing of getting a dozen Woodcock in a day at the start of the local shooting season commencing about July 4. The large owls used to be common and he had shot many. He commented on the former abundance of Towhees, Flickers, Meadowlarks, and especially of Blackbirds which would go over in flocks two or three miles long. The flocks of Robins "would darken the sky" and he and his brother once shot forty in a short time. Bank and Barn Swallows used to be common but he apparently did not know the Eave Swallow; "chimbly swallers" are less common also and the Purple Martin used to visit boxes here and in Little Falls. He spoke of House Wrens eating green worms from the grape vines and rose bushes and on being asked about Whip-poor-wills stated that they used to stay all summer and would sing so loudly and commonly

at night it was sometimes difficult to sleep. His remarks on the Passenger Pigeon follow:—saw very few himself, none after 1870 but they appeared in bunches flying low over the ridge in spring and in fall. His father and grandfather baited them with buckwheat and would catch them in nets, several hundred sometimes in a day when they were abundant. They had a special basket to keep them in and the birds were then sold alive at pigeon shoots. Mr. Speer participated in the last such shoot in Montclair at a place called Harrison Park. The pigeons disappeared very suddenly and were never confused by him with the Mourning Dove which also used to be more common than now. He recalled the more rapid flight of the larger bird but claimed he could usually shoot one or two from a bunch as they migrated over.

In his excellent stories of the hunting field, Frank Forester (Henry W. Herbert) describes a snipe shooting trip in the spring to the Great Piece Meadows where these birds were most numerous and could be seen and heard in their "bleating" flight performance. Peter Speer spoke of the abundance of snipe and Woodcock there also and claimed that at the time of the full moon he and three others got 67 or 68 Woodcock in one day. Frank Forester[9] writes:

"Once many years since sporting in the heavy thorn-brakes around Pine Brook in New Jersey, I found them (Ruffed Grouse) and we had great sport, bagging eight brace of Ruffed Grouse over points in addition to some eighteen or twenty brace quail."

This swamp area extended well up the Passaic River to Chatham Bridge and the following interesting comments are taken from Harold Herrick (Linnæan Society paper, November 2, 1878) published in *Forest and Stream*:[10]

"*Wilson's Snipe* breed yearly on the Chatham meadows.

"I have an egg taken from a set found there, and Mr. Dickinson takes young often and last spring got a family of four in the down."

"*Woodcock* Mr. Dickinson's is the best swamp on the river and 120 fine birds were killed in it July 4, 1878."

All Grouse, Quail and summer snipe here are now gone; the flight of Woodcock is trifling in comparison and transient snipe are few.

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[9]American Game, p. 295, 1873.

[10]Forest and Stream XII, 1879, p. 165.

Although the area considered was probably once more easily divided between Transition and Carolinian Faunal areas than today, there are some tracings possible. The isolated occurrences of Solitary Vireo, Nashville Warbler, White-throated Sparrow and the like in summer are indicative. The Red-tailed Hawk, Golden-winged Warbler, Black-throated Green Warbler, Cliff Swallow, Pileated Woodpecker, and Wilson's Snipe have distinctly northern associations. The Yellow-billed Cuckoo, the Bobolink, the Alder Flycatcher, the Savanna Sparrow, the Tree Swallow, Cedar Waxwing and Prairie Horned Lark are near their southern limit as breeders. Conversely, the Carolinian associations are present but very much more evident. We have the Cardinal, Mockingbird, Titmouse, Carolina Wren, Orchard Oriole, Blue-winged Warbler well toward their northern limit. The occasional Blue Grosbeak, Prothonotary and Yellow-throated Warblers, Acadian Flycatcher, Turkey Buzzard, Seaside Sparrow, Clapper Rail, Blue-grey Gnatcatcher and Carolina Chickadee are near their northern limits even as stragglers. Among the birds with southern affiliations, which regularly get further north in the Carolinian belt are Barn Owl, Fish Crow, Purple Grackle, Rough-winged Swallow, White-eyed Vireo, Worm-eating and Hooded Warblers, Louisiana Water-thrush and Yellow-breasted Chat, all of which either occur now or have regularly occurred in our area as normally common breeders. It is interesting to contemplate that the complex ecological changes brought about by man and civilization have adversely affected most of the above listed species with northern and southern affiliations. As these birds as a whole are not near the center of their abundance it is a reasonable expectation that such would be the case. The Cardinal and Tufted Titmouse, Hooded Warbler, and Purple Grackle, Savanna Sparrow and the Tree Swallow seem to be the only species now at or near the peak of abundance or expansion. Records of some indeed are now only historical associations, like the Dickcissel, the Snipe, Red-tailed Hawk and Cliff Swallow; it is indeed likely that such species as Summer Tanager, Red-bellied Woodpecker, Bewick's Wren, and others once were present in some numbers at the apex of their northern cyclic expansion. This statement is not mere idle theory as there is evidence in other localities to back it up. I have neglected to touch also on the water birds or on

the northern wanderings of breeders like the Forster's Tern or Yellow-crowned Night Heron whose past history is somewhat obscure.

Perhaps the clearest way to show the comparative abundance of breeders is by a table, two of which are submitted. The total figures represent actual counts in breeding season, not pairs or nests, so allowance must be made to some extent to make relative not absolute comparisons.

Table II—Montclair Region (chiefly Essex County), 7 years, 1929-1935, incl.

Table III—Hudson County, 6 years, 1930-1935, incl.

The conclusion of these figures is that although once Hudson County no doubt had the same total summer list as Essex, yet for the years considered, 33 summer birds have been eliminated. In addition also, it is obvious that the introduced species in Hudson County especially, to a less extent in Essex, are forcing out the native species as shown here:

	Native	Introduced
Hudson	37.3%*	62.7%
Essex	74.3%	25.7%

*Based on per cent of total counts.

On an arbitrary scale a further classification brings these points out further.

	Essex		Hudson	
	Native	Introduced	Native	Introduced
Very abundant	1	2	0	1
Abundant	1	0	0	0
Very common	17	1**	0	1
Common	17	0	7	1**
Uncommon	18	0	10	0
Rare	8	1	8	0
Very rare	17	0	21	1
Occasional (once only)	9	0	9	0
Totals	88	4	55	4
	92		59	

**Rock Dove.

The first question which comes to mind therefore is "Which are the species which are the first to go?" What little concrete evidence can be produced is submitted herewith (Table IV). As Hudson County has been "civilized," reaching its present density of population some

TABLE II

Breeding Season Counts, Relative Abundance, Montclair Region Only
(7 Years, 1929-1935 Inclusive; 92 Species, 13,756 Individuals)

	Per Cent	Total Individuals
Very abundant—3		
Robin	16.94	2,330
House Sparrow	12.70	1,748
Starling	9.60	1,317
Abundant—1		
Song Sparrow	5.40	746
Very Common—18		
Towhee	3.50	481
Rock Dove, est.	3.30	452
Purple Grackle	3.03	417
Wood Thrush	2.93	403
Catbird	2.81	387
House Wren	2.80	380
Blue Jay	2.54	349
Northern Yellow-throat	2.45	337
Red-eyed Vireo	2.30	318
Chipping Sparrow	2.00	276
Northern Flicker	1.96	270
Red-wing	1.70	239
Mourning Dove	1.60	213
American Crow	1.39	192
Ovenbird	1.39	191
Cowbird	1.13	158
Field Sparrow	1.05	144
Indigo Bunting	....	132
Common—17		
Baltimore Oriole		117
Scarlet Tanager		109
Chestnut-sided Warbler		109
Rose-breasted Grosbeak		107
Wood Pewee		105
Brown Thrasher		104
Yellow Warbler		103
Chimney Swift		102
Barn Swallow		98
Goldfinch		85
Downy Woodpecker		75
Crested Flycatcher		71
Blue-winged Warbler		63
Killdeer		57
Cedar Waxwing		56
Meadowlark		55
White-breasted Nuthatch		51
Uncommon—18		
Kingbird		48
Yellow-throated Vireo		47
Cardinal		47
Veery		44
Vesper Sparrow		41
Phoebe		36
Spotted Sandpiper		35
Black-capped Chickadee		35
Kingfisher		32
Least Flycatcher		30
Bob-white		29
Sparrow Hawk		28
Tufted Titmouse		27
Redstart		26
Worm-eating Warbler		26
Yellow-breasted Chat		26
Screech Owl		25
Warbling Vireo		24
Rare—9		
Bluebird		18
Yellow-billed Cuckoo		16
Hairy Woodpecker		15
Grasshopper Sparrow		15
Swamp Sparrow		12
Pheasant		12
American Woodcock		12
Black and White Warbler		12
Hooded Warbler		12
Very rare—17		
Orchard Oriole		9
Alder Flycatcher		7
Fish Crow		7
Virginia Rail		6
Black-crowned Night Heron		5
Sharp-shinned Hawk		5
Green Heron		4
Red-shouldered Hawk		4
Louisiana Water Thrush		4
Long-billed Marsh Wren		4
Cooper's Hawk		3
Ruby-throated Hummingbird		3
Rough-winged Swallow		3
Sora		2
Great Horned Owl		2
White-eyed Vireo		2
Prairie Warbler		2
Occasional (only once)—9		
Barred Owl		
Black-billed Cuckoo		
Nighthawk		
Whip-poor-will		
Nashville Warbler		
Canada Warbler		
White-throated Sparrow		
Carolina Wren		
Black-throated Green Warbler		

Totals						
1929	1930	1931	1932	1933	1934	1935
71	65	64	71	69	74	72

TABLE III

Hudson County Breeding Season Counts—Relative Abundance
(Six Years, 1930-1935, 59 Species, 6,041 Individuals)

	Per Cent	Total Individuals
Very abundant—1		
House Sparrow	45.3	2,736
Very common—1		
Starling	12.7	769
Common—8		
Eastern Red-wing	5.96	360
Long-billed Marsh Wren	5.94	359
Swamp Sparrow	5.74	347
Song Sparrow	5.39	326
Rock Dove, est.	4.67	[282]
Robin	3.89	235
Northern Yellow-throat	2.92	176
Black Duck	1.77	107
Uncommon—10		
Purple Grackle	1.14	69
Killdeer		56
Sharp-tailed Sparrow		34
Fish Crow		32
Florida Gallinule		24
Indigo Bunting		24
Yellow Warbler		19
Flicker		18
Catbird		17
Spotted Sandpiper		17
Rare—8		
Meadowlark		16
Blue Jay		16
Crow		16
Barn Swallow		14
Black-crowned Night Heron		12
Chimney Swift		11
Brown Thrasher		10
Goldfinch		10

	Total Individuals
Very rare—22	
Sparrow Hawk	8
House Wren	8
Virginia Rail	7
Kingbird	7
Bobolink	7
Veery	6
Mourning Dove	5
Field Sparrow	5
Black-billed Cuckoo	5
Redstart	4
Marsh Hawk	4
Pheasant	4
Towhee	4
Green Heron	4
Red-eyed Vireo	4
Least Bittern	4
Rough-winged Swallow	3
American Bittern	3
Chipping Sparrow	2
Least Flycatcher	2
Cedar Waxwing	2
Baltimore Oriole	2
Occasional (once only)—9	
Ruby-throated Hummingbird	
Wood Pewee	
Crested Flycatcher	
Cowbird	
Wood Thrush	
Yellow-billed Cuckoo	
Grasshopper Sparrow	
Cliff Swallow	
White-throated Sparrow	

(Herring and Laughing Gulls excluded.)

thirty to thirty-five years earlier than eastern Essex and as complete disappearance of most species from the latter county is only starting, the comparison is entertaining. Due to the past records kept by Messrs. Marks, Kohler and Medsger in Arlington, etc., an area with only local or sentimental interest, we have a record, faulty as it may be, to show the fading out of species unable to stand change of environment or "civilization." Historically, the first to go were probably the Heath Hen (if ever present), the Wild Turkey, Passenger Pigeon, the Pileated Woodpecker, the Bald Eagle, the Osprey, Great Blue

Heron, Night Heron, the Ruffed Grouse, the Red-tailed Hawk, the Purple Martin, perhaps a few Carolinian species no longer present (Note Cardinal in Hudson County) and the large owls. These were followed in recent times by the marsh birds as their habitats have been destroyed, such as the Least Bittern, Pied-billed Grebe, Coot, rails, etc. (in Hudson County the extent of marsh has preserved a few Virginia Rails, Bitterns and Gallinules), and then by the next smaller birds and birds of prey, e.g. Red-shouldered Hawk, Crow, Green Heron, the game birds, Woodcock, Bob-white, and lastly by the less favored or adaptable passerine species. The Red-headed Woodpecker is notably unable to withstand competition of the Starling; the swallows, Cedar Waxwing, Whip-poor-will, many flycatchers, the Bluebird, several of the Carolinian species (Blue-winged Warbler, Carolina Wren, Chat, Titmouse) have disappeared from Hudson and are going from East Essex, to be followed by warblers, vireos and even by members of the sparrow family which are comparatively successful in reproducing themselves. The Screech Owl, Chimney Swift, Nighthawk, Sparrow Hawk, Grackle, Blue Jay, Robin, Catbird and Song Sparrow seem to be able to adapt themselves with a measure of efficiency to denser population and introduced competition. The present breeding possibilities of Essex County today are about 103 species total, for besides those listed (in summer) from the Montclair region (92) there are found at Port Newark the Seaside, Sharp-tailed and Savannah Sparrows, the Bobolink, Marsh Hawk and the Short-eared Owl, and in the Passaic Valley or on the second ridge, Short-billed Marsh Wren, the Black, Wood and Mallard Ducks and Broad-winged Hawk. Historically we know considerable about the destruction of marsh areas in Essex County. The best fresh water marsh environment described by Abbott[11] at Newark lasted only to about 1908; the remnant was destroyed both on fresh and salt marsh about 1916 with the creation of Port Newark. In West Essex, Long Meadow was filled in for the creation of the Caldwell Airport in 1929, and the wonderful Hatfield area was "improved" and destroyed (by drainage) in 1932. Areas of woods suited to a few of the larger raptors still persist in West Essex along the Passaic and on the two Watchung Ridges. Of

[11] Auk, 1907, p. 1-11.

course all the above relates to nesting species only: Several of these areas are still unexcelled for migrants, waders, ducks and birds of all sorts.

Another means of study was undertaken on a small scale and the results are summarized herewith, i.e., the density of bird population in given areas. I soon found that whether I counted birds in Hoboken, Jersey City, Newark, East Orange, or Montclair in the settled areas, the total population was relatively stable. As the native birds found conditions unbearable, the introduced species filled the gaps—and quite densely. As many sparrows, pigeons, Starlings, Robins, and Song Sparrows were to be found as there were food or nesting sites and these were considerable and quite uniform. I then concentrated on native species.

CITY CONDITIONS—PARKS AND LIMITED OPEN SPACES

Number of Native Birds (individuals) Per Hour

Hudson		Essex	
Jersey City	24	Newark	73
Harrison and Kearney	28	Montclair	137

These figures are then the measure of deterioration of environment in and about the city parks. It is quite possible as time goes on that Anderson Park, Montclair, now a very good place for Robins, Catbirds, etc., will one day be as desolate and barren as Greenville or some of the Bayonne parks. It is just a question of degree.

To give another feature of a numerical study, a considerable amount of time has been spent in counting the number of individuals of native birds recorded per hour on foot in relatively stable, and, so to speak, the best of present natural conditions in the county. In the environment previously entitled "V," trap-rock upland characterized by oaks, tulip tree, poplar, beech, etc., where the Towhee is the most common bird, the total is 104, quite below the best record (for the park area) and then again lower than general mixed fields and woods giving a figure of 116 at Great Notch and 112 at Caldwell. These figures represent respectively environments "IV" and "VI," referred to above, with Robin and Tufted Titmouse respectively as typical birds. For Hudson County, the chief area studied is number "III" the habitat of fresh marsh in which the characteristic bird is the Long-billed Marsh Wren

giving an average per walk hour of native birds 62. There is little doubt that this is a lower figure than formerly, as the typical *Phragmites* which is more abundantly distributed today than the cattails, is hardly the best of breeding territory. Before diking and draining, the density of bird population here was considerably greater for the Red-wings, and wrens are much more common in the wetter portions today.

The considerable records in *Bird-Lore* over a period of years make possible another tabulation which in itself (Table V) shows simply and clearly the preponderance of roughly a dozen species in making up the winter population. In the earlier censuses the relative proportion of the species is very different from the later. The Starling has increased out of all proportion to every other bird (excluding House Sparrow; census counts previously omitted these), so that today 47% of the total individuals are of this species while in the early years the figure 35% was more nearly representative. The several gulls also are more abundant than formerly but how much we cannot guess. In general, the less frequently seen species today bear a smaller ratio to the sum total than formerly which is just a means of saying that the species most efficient in adapting themselves to our changing environment are increasing relatively as well as absolutely. I believe that in just the past few years our wintering crows are on the decrease but otherwise they have been able to compete successfully with their environment.

The annotated list contains extreme dates of migration so far as available but none of the average figures listed in Mr. Urner's paper. It was thought better to show the average spring arrival figures by a table (VI) of some of the key species, perhaps fifty in number, selected from the different groupings in Mr. Griscom's "Birds of the New York Region." Such dates obtained from 6-15 years representative arrival figures averaged, is readily comparable with other localities in other states. In comparing these with Union County, I may say that in general our region shows a lag of a day or two which would be reasonable but that in some of the West Essex records it was apparent that some migrants tend to appear in the Caldwell area before they are seen in the Elizabeth or Montclair regions. That this is not an

anomaly, one has only to glance at the map to see the possibility of birds arriving from the south via the Upper Passaic Valley working north from say Trenton, Princeton, etc., west of the long and curving Watchung Ridge. Not enough data are at hand, however, to prove this entertaining hypothesis. No complete fall averages have been given, not through lack of general interest, but chiefly because of lack of data. A few such, however, are listed below for comparison.

Northern Water-Thrush	August 10
Red-breasted Nuthatch	September 5
Connecticut Warbler	" 15
Prairie Warbler	" 15
Black-poll Warbler	" 16
Palm Warbler	" 18
White-throated Sparrow	" 18
Lincoln's Sparrow	" 22
Junco	" 25
Winter Wren	" 26
Brown Creeper	" 27
Broad-winged Hawk	" 27
Golden-crowned Kinglet	" 30
Solitary Vireo	" 30
Fox Sparrow	October 21
Tree Sparrow	November 2
Rough-legged Hawk	" 2

Generally speaking, the fall data are much less regular than in spring, e.g. only one Essex County Olive-sided Flycatcher record is at hand compared to a series from Union County, while the exact converse is true of the Prairie Warbler, which at Montclair is a reasonably common fall migrant. Why the average date of the Tree Sparrow is some ten days behind Mr. Urner's records is a puzzle when most of the other common species show an earlier or similar arrival date in Essex County.

The fall migration is very much a mystery to many of the uninitiated who tend to cover the spring flight thoroughly but not that in fall. The shorebird flight starts at Port Newark the last week in June most years, is under way by July 4 pretty consistently and in full swing a week later with a half dozen species. It continues active well into October and in some seasons a number remain into Novem-

ber. August is the best month of the year along Newark Bay but the early duck flight starts in September and depends to a large degree upon the precipitation on the meadows. In some seasons the birds pass right through, at other times may be seen readily in large flocks if the proper places are visited early in the morning at proper tides. A word must be said about the extraordinary post-breeding heron flight which has frequently concentrated these species in the same general area near Newark Bay where the shorebirds are seen. The now historic concentration in the locust grove beside Bound Creek in Essex County is capably described by Mr. Urner as follows:

"During the summer of 1930 frequent trips to Newark Meadows permitted the recording of the rise and fall of the White Heron movement and some facts of possible interest concerning roosting habits. The first recorded Little Blue Heron reached Newark Meadows about July 10th. The number increased quite rapidly after that date, reaching 102 by July 31st and 145 by August 7th (one blue adult on that date carried a band on the right leg). The peak was reached August 30th when 247 white and 6 adult birds were counted and the number held up well until the first days of September, after which there was a rapid decline. Only 86 went to roost on Sept. 13th, 11 on Sept. 21st and but 1 on Sept. 28th.

"The season's first Egret in Northern New Jersey was on July 5th; the highest number on Newark Meadows was reached on August 16th (41 birds) and the latest record was on Sept. 28th.

"From August 13th to Sept. 21st on twelve separate evenings I checked the herons as they lit in the locust grove on Newark Meadows. There were apparently several factors affecting the time of arrival at the roost:—(1) time of sunset; (2) light conditions, cloudy or clear; (3) lateness of season (probably temperature); (4) distance from the roost the birds were feeding; (5) the state of the tide at bedtime as it affected feeding conditions. There was a tendency, though not uniform for the birds to roost earlier as the days shortened. On the darkest, cloudiest evening all were at roost before sunset and on the clearest evening, with moon, the majority went to roost after sunset. But this relation of time of roosting to sky conditions was not constant, in fact the average time of roosting on clear evenings was 25 minutes before sunset while the average time of roosting on very dark evenings was 18 minutes before sunset, indicating that other indefinable factors had an influence. The distance from the roost was of only minor importance since the Little Blues roosting in the locust grove, as far as I could determine, all spent their days on the surrounding salt marsh and were rarely over a mile or two from the grove. It seemed certain that the birds roosted earlier in relation to sunset as the season advanced, a tendency possibly due to lower temperatures and a desire to seek the shelter of the grove. Feeding conditions seemed to have an influence on the time of roosting. The birds lived chiefly

upon grasshoppers and salt water minnows or other forms of aquatic life. Many, each day, left the grasshopper infested salt meadows for the mud flats as these were exposed by the falling tides. If the flats were just uncovering at roosting time the tendency was to tarry and arrive at the roost later than under other tide conditions.

"A clear indication of the effect of light conditions upon the roosting instinct, independent of sun time, was observed on August 17th when a very heavy thunder-cloud darkened the sky at 4.30 p.m. As the darkness deepened herons began to fly to the grove. Some 20 had arrived when the cloud parted and these all left the grove as the sun shone forth again.

"The Egrets, when alighting, mixed with the Little Blue Herons, but later segregated and roosted, well spaced, in the taller trees.

"The locust grove for over two months, served as a heron roost 24 hours a day, for the Black-crowned Night Herons roosted there throughout the hours of daylight, flying out a few at a time as the white birds came in for the night."[12]

At other seasons as in 1934, the southern heron concentration may be almost lacking.

Another feature of the meadows is the concentration of roosting birds which from my notes of September 5, 1929, may be of interest to quote verbatim:

"As I returned toward the airport I saw vast clouds of birds settling in the dusk among the reeds between the roadway from the Holland tubes to Newark and the Lehigh tracks. On going over I flushed between 5,000 and 10,000 birds. I have no accurate manner of estimating this number but there were more than 1 ever saw at once before. As they flew up they made a dull roar—at least 4 flocks of great size and hundreds of scattering. They were chiefly Red-wings and Grackles with Starlings, Tree Swallows and a few Bobolinks, probably also Cowbirds and Barn Swallows but I identified none of these as it was too dark. There may well have been twice my estimate and I know I have the Tree Swallows too low but I try to be conservative:

Red-wing	3,000
Starling	1,000
Tree Swallow	500
Grackle	2,000
Bobolink	3

[12] Quoted from Cassinia, Vol. XXVIII, 1929-30. Southern Herons in New Jersey by Charles A. Urner.

On several occasions as described by Mr. Urner even larger flocks have been seen as they prepared to bed for the night in the *Phragmites* of this locality.

Mr. T. M. Trippe[13] describes an immense flight of Tree Swallows near Newark about 1867 in October just before a long northeast rain storm followed by sharp frosts. He stated that tens of thousands were in sight at any moment for an hour. The evolutions of these birds are at times nothing short of marvelous as hundreds of birds as if moved by common impulse veer, now here, now there, in rapid ranks. Such a performance was seen in Branch Brook Park about sunset September 23, 1934. In the declining light, the air appeared filled with dust or little motes, probably some form of small gnat, but for no apparent reason the birds in pursuit would swarm in flight close to the ground, backs shining, white bellies gleaming, and suddenly mount into the air in a swirling mass. They then started eastward and I decided were gone to roost on the meadows when, as if attracted back by some magic electrical power, they would circle overhead with confused twitterings, feeding and hawking about, only to repeat the process several times, so that it was almost dark before they finally disappeared. I could not believe that the gnats were flying so erratically but rather that the swallows were driven by some spur of play or instinctive discipline which caused them to dash now high, now low, in pursuit of their evening meals.

The flocking of Starlings has so often been studied and described that I shall only cite a little of interest on these birds. The roosts on the meadows are at times wholly or in great part of this species and for several years there has been a most interesting one in the neighborhood of Montclair Avenue and Essex Street, Montclair. Starting around the first of July with a nucleus of Robins and Starlings, it attracts Grackles and ever increasing number of Starlings, so that for several years it has been a public nuisance and extreme methods of control have been resorted to by the police. Persistent shooting of birds with the killing of hundreds tends to break up the roost after a time but it is a noisy affair at best. On July 16, 1934, a visit indicated that three-quarters of the birds were Starlings, the balance Robins and

[13] American Nature, 1874, p. 346.

a few Grackles, but the flock had been reduced by shooting to only about a thousand birds.

The warbler flight so eagerly studied each spring in Central Park passes our area in the same way but never in as concentrated a form. Only every other year or so is the opportunity provided at Montclair for the big, easily observed concentrations. Branch Brook Park and several Hudson County parks, notably North Hudson Park and the Arlington Cemetery are favored localities because the birds must concentrate of necessity. A number of rare species have resulted from these waves at Branch Brook and continued observation such as that of Mr. R. F. Haulenbeek will reveal much the same conditions as in New York following a proper combination of warmer weather, a change in temperature or a fog.

A single special flight is that of loons observed at Montclair Heights in the spring of 1930. Starting with the first record on the Reservoir on April 16 scattering birds were seen until May 1 when "geese" were reported—at least twelve seen going over by one observer as he walked to the train at the station near my home. A few moments revealed they were loons, a flock of three and a single bird additional. On the fifth, I saw six birds and on the seventh one, particularly noting that it flew with bill wide open. On May 9 conditions appeared to be so good that I took time before departing for New York to look the flight over. The birds were silent, flying northwest from the direction of Newark Bay, rising gradually so they passed about thirty feet over the tree tops on the ridge. At this point they seemed to head more west than north. Some came singly, others in bunches up to ten, a total in only a few minutes, of 42. Of thirteen I watched carefully one after another, all had their bills wide open. It was a bright, rather warm day, but whether this is done because of the heat or due to their need for oxygen in laboring flight like a panting dog, I do not know. No more were seen that season nor later except a single bird flying east May 29, 1932, a rather unusual date. Other years the loon has been absent or rare which makes this influx the more strange. My home is so situated that it is on a good migration route. For example on July 8, 1929, I was astonished to see six Great Blue Herons migrating in stately parade north along the ridge, a wandering from the

south along the same route used by myriads of crows, hawks, and other birds in years past.

These crow and hawk flights have been the joy of some of the local gunners for many years. Mr. T. M. Trippe[14] describes a flight of at least a thousand hawks which occurred in early May after a long northeast storm with heavy rain. The Red-tailed, Sharp-shinned, Cooper's and Broad-winged Hawks were the most common and one Golden Eagle was recorded as seen. Mr. K. V. S. Howland[15] reports on the migration at Montclair, stating it began in late March and that he had shot Red-tailed, Red-shouldered, Broad-winged, Marsh, Cooper's, Sharp-shinned and Sparrow Hawks and Ospreys. On April 18, 1893, thirty-seven hawks chiefly Broad-winged and Sharp-shinned were shot from three blinds. Mr. Harry Trippett told me of seeing numerous Pigeon and Broad-winged Hawks in migration and reported five kinds in the air together on one occasion. He said that one afternoon Peter Speer and others killed 84 hawks in three hours and that they more than filled a bushel basket. As to the Golden Eagle they were said to have been seen on several occasions, less often than the Bald Eagle it is true, but once or twice migrating in pairs. He recorded the crow flights as starting in late February and March along the line of the ridge. He said that after the main flights there would be scattered flocks of birds which traveled alone, composed of partly crippled or diseased birds which were kept from the main flights.

Peter Speer, on being consulted, was the mightiest hunter of them all; he shot with several companions chiefly for sport and had killed vast numbers of crows and hawks of various kinds. He gave March 1 as the usual start of the crow flight and had shot for market, obtaining about fifteen cents each if fresh, shipping to New York by the barrel. By such means he made over $50.00 one spring, enough to keep him in shells for some time—until this practice was stopped by the Audubon Society. The breast plumage of the crow was then used in making feather capes for women and the wings were used on hats. The hawks were valueless unless the skins were tanned but he would not take the trouble to do this as they had to be free from smell also. Hawk flights were often on warm days so that the birds

[14] American Nature, 1874, p. 346.

[15] Forest and Stream, 1893, p. 513.

rose in the air and circled but the crows were dependent on a certain wind so they could fly along the ridge at an acute angle making use of the crosswise currents. His brother shot a Golden Eagle back of the Normal School about 1870 and he spoke of another that was shot in Great Notch and mounted, describing the golden feathers on the neck and stating it was smaller than the Bald Eagle. He claimed that roup or some disease which closed their eyes killed off "millions" of crows but that even though blind they flew north instinctively to fall prey to his willing gun.

My first experience of hawk flights came in 1929. On April 20 the Montclair Bird Club at Verona Lake reported an Osprey and about 75 Broad-winged Hawks. A few days later I saw one of the latter and on searching the hill on April 28 ran across a blind made of a fallen tree and a few boughs and containing the bodies of about 20 crows, thirteen Broad-wings, a Cooper's Hawk and five Sharp-shins all quite fresh. There was also a long deceased Red-shouldered Hawk. On March 19, 1930, shooting was heard and the following day I picked up the remains of nine crows, a male Marsh Hawk and a Red-shoulder. Shortly afterwards the shooting was stopped by the game warden at the request of the New Jersey Audubon Society and has not been continued. A few flights of hawks have been noted, however, and details are given below of April 19, 1930; April 26, 1931, and April 23, 1932. No flight has been recorded 1933-1935 inc. beyond scattering birds. The Broad-winged has been by far the most common, followed by the Osprey but apparently the Sharp-shin is much less common than formerly. It is often difficult to tell the falcons or smaller *Accipiters* but in general the figures are accurate.

	April 19, 1930 2-4 P.M.	April 26, 1931 6:35-7:46 P.M.	April 23, 1932
Hawks	44	47	23
Broad-winged Hawk	20	18	15
Osprey	11	19	4
Duck Hawk	3	1	2
Marsh Hawk	2	1	1
Pigeon Hawk	2	1	1
Sharp-shinned Hawk	1	x	x
Cooper's Hawk	4	x	x
Sparrow Hawk	x	1	x
? Falcon	x	3	x
Buzzard	1	x	x
Unidentified	x	3	x

On April 20, 1930, a Sharp-shin, two Sparrow Hawks and a falcon were noted but the flight was over. In 1931 the migration was accompanied by movements of crows, Mourning Doves and a blackbird, and in 1932 by seven crows, all of which flew like the hawks low over the trees.

The weather on April 26, 1931, is worth special attention in comparison with the note given above by Trippe. I had taken a ride to Little Falls in a terrific downpour of rain and walked home via the Cedar Grove Reservoir. "By this time the last black cloud from the various showers was just east of me over the ridge and the sun was breaking through the west. The wind was strong from the west, quite blustery and getting stronger. I saw my first hawk, a Broad-wing, at about 6:35 D. S. T. and then watched carefully until after dark at

TABLE IV

HUDSON COUNTY

Last Breeding—(Records at Arlington unless otherwise shown)

1878 (before) Cardinal (Jersey City)
1907 Cedar Waxwing
Blue-winged Warbler
1910 Woodcock
Nighthawk (Jersey City)
1911 Yellow-throated Vireo
1912 Ovenbird
1913 Bluebird
Crested Flycatcher (Secaucus)
1915 Red-shouldered Hawk
1916 Carolina Wren
1917 Titmouse
1919 Crow
Chipping Sparrow
Scarlet Tanager
Black and White Warbler
1920 Green Heron
Yellow-billed Cuckoo
Phoebe
Yellow Warbler
Yellow-breasted Chat
1925 Red-headed Woodpecker
1928 Kingbird
Goldfinch
Field Sparrow
Redstart
Thrasher
Bob-white
1930 Hummingbird
1931 Wood Thrush
1933 Cliff Swallow (Secaucus)

ESSEX COUNTY

Last Breeding Records

1878 Wilson's Snipe
1905 Purple Martin
1907 Coot
1908 Pied-billed Grebe
1926 Bank Swallow
1927 Ruffed Grouse
1928 Red-tailed Hawk
Florida Gallinule
1929 Cliff Swallow
1932 Least Bittern
Sora Rail

7:50 D. S. T. There were never more than three in sight at once and generally these would be either Broad-wings or Ospreys. The wind was due west and the birds were flying at about a 60 degree angle

TABLE V

Winter Records Taken from 39 Bird Lore Censuses 1913-1934 Inclusive

(Essex County)

Relative Abundance	Per Cent	Total Individuals
Starling	39.4	19,942
House Sparrow	14.0	7,072
Crow	11.9	5,613
Herring Gull	6.01	3,090
Tree Sparrow	5.9	2,983
Junco	3.33	1,686
Bonaparte's Gull	2.56	1,298
Bl.-cap Chickadee	1.96	995
Blue Jay	1.87	947
Song Sparrow	1.66	838
White-throated Sparrow	1.36	691
Black Duck*	1.04	525
White-breasted Nuthatch		432
Goldfinch		412
Tufted Titmouse		371
Red-wing		363
Horned Lark		344
Rusty Blackbird		340
Downy Woodpecker		301
Crow Blackbird**		208
Meadowlark		205
Ring-billed Gull		187
Golden-crowned Kinglet		129
Purple Finch		111
Brown Creeper		104
Myrtle Warbler		88
Robin		73
Pine Siskin		72
Red-headed Woodpecker		70
Hairy Woodpecker		65
Cardinal		63
Bluebird		56
Pheasant		53
Field Sparrow		52
Red-tailed Hawk		49
Snow Bunting		47
Swamp Sparrow		45
American Merganser		41
Sparrow Hawk		38
Red-shouldered Hawk		37
Winter Wren		29
Savannah Sparrow		28

*Includes Red-legged.

**Includes both species of Grackles.

Relative Frequency	Total Times Listed
Tree Sparrow	39
Song Sparrow	38
Starling	37
House Sparrow	37
Slate-colored Junco	36
Blue Jay	35
Crow	34
White-breasted Nuthatch	33
Black-capped Chickadee	32
White-throated Sparrow	31
Brown Creeper	28
Goldfinch	28
Tufted Titmouse	20
Golden-crowned Kinglet	19
Red-shouldered Hawk	18
Red-tail Hawk	18
Hairy Woodpecker	17
Sparrow Hawk	15
Robin	15
Red-headed Woodpecker	13
Black Duck	13
Winter Wren	11
Bluebird	11
Cardinal	11
Kingfisher	11
Myrtle Warbler	10
Swamp Sparrow	10
Pheasant	10
Purple Finch	9
Field Sparrow	9
Flicker	9
Herring Gull	9
Marsh Hawk	9
Fox Sparrow	8
Pine Siskin	8
Meadowlark	8
Hermit Thrush	8
Horned Lark	7
Ring-billed Gull	7
Screech Owl	5

Also Recorded in Winter

Rough-legged Hawk
Long-eared Owl
Cedar Waxwing
Red-breasted Nuthatch
Mourning Dove
Sharp-shinned Hawk
Cooper's Hawk
Mallard
Great Blue Heron
Horned Grebe
Pintail
Black-crowned Night Heron
Wilson's Snipe
Killdeer
Short-eared Owl
Barred Owl
Great Horned Owl
Yellow-bellied Sapsucker
Cowbird
Redpoll
Chipping Sparrow
Northern Shrike
Orange-crowned Warbler
Pipit
Carolina Wren
Towhee

Also Recorded in Winter

Catbird
Pine Grosbeak
Red Crossbill
Mockingbird
Evening Grosbeak
Goshawk
Red-breasted Merganser
Scaup (both species)
Vesper Sparrow
Saw-whet Owl
Ruby-crowned Kinglet
Quail
Snowy Owl
Lapland Longspur
House Wren
Arctic Three-toed Woodpecker
Iceland Gull
Glaucous Gull
Black-backed Gull
Brunnich's Murre
American Golden-eye
Duck Hawk
Bald Eagle
Dovekie
Razor-billed Auk
White-winged Crossbill

Grand Total - - - - - - 103

across it and parallel to the crest of the hill so that they were able to soar for a while across it but had to circle occasionally to get height or to change direction. Their actions were interesting. The Ospreys traveled in twos and threes and seemed to circle more than the others. I heard them calling twice. The Broad-wings would soar straight for a while then recover direction and continue and the falcons almost always seemed to be swooping down toward the trees at an angle. I believe they must rise and then coast down wind more rapidly then the others. They would go at least twice as fast as the larger hawks and would be over often on folded wings like a shot, making them hard to identify. The single Marsh Hawk was flying due north right overhead. The falcons, doves and some of the Broad-wings would be just over the trees, others of the Broad-wings very high up. Where do these birds spend the night? I did not see one *Accipiter!* I noticed the last Osprey at 7:27, Broad-wing at 7:35, and falcon at 7:43. With the increased wind the temperature fell considerably. I believe the crows were just local birds which were using the wind to fly on, as

they seemed to have no special direction, but I think the doves were migrating north along the ridge also."

In 1932 the wind was southwesterly and rather strong, the day clear, sunshiny and warm, an ideal day for a flight. The hawks flew both directly along over the ridge or circled and even went to the east of the house a few times.

It has been possible due to circumstances to get only fragments of the crow flights which appear later than the dates given by Trippett or Speer and my notes are quoted as follows:

"March 6, 1931—Crow flight along ridge. Fair day, wind light and near ground, stronger higher up as was blowing clouds rapidly from northwest. First noted 7:00 A.M. a great grey smoky cloud (snow flurry) which darkened sky. Instead of flying north along ridge into cloud crows became perturbed and 100 or so circled about together. There were always 10 to 100 in air at once going Still flying at 8:00 A.M. mostly on further side of ridge but Edwards who saw flight about 7 at Watchung Avenue and from the train said they were generally distributed as far east as West Arlington and mostly flying at height of about 1,000 feet or more. Had stopped by 8:30. None the next day. Estimated 6,000 to 10,000 crows today.

"March 18—Clear and fair with a light northwest wind. Counted crows on hill about 8 A.M.

2 Minutes - - - - - - - -	55
2 Minutes - - - - - - - -	51
1 Minute - - - - - - - - -	36
Total—5 Minutes - - - - - - - -	142

I did not notice the flight till just as I was about to catch the train so have not the faintest idea how many there were.

"March 19—½ hour only 30.

"March 14, 1932—In 15 minutes between 7:15 and 7:30 I counted 103 crows flying north over the ridge, quite high, some almost out of sight, never more than 7 in sight at once. Overcast and chilly wind, light and just south of west. Flight continued only a short time.

"March 22, 1934—Noted 14 crows flying north along ridge today.

"April 1—338 noted in small groups flying rather high 8:20 to 9:10. Ground wind, light and south. Wind higher up northwest and stronger.
rather rapidly at actual rate of 550 in 5 minutes as I watched through window.

"March 3, 1935—Counted 227 flying at rate of about 20 a minute in early morning. They approached the ridge from the east and south flying rather high but heading almost due north at the Heights. Wind northwest but light increasing later in day."

That the weather has a secondary influence on these flights there can be no doubt. As with the hawks the northwest wind at least higher up is a prerequisite.

That birds are quick to respond to environment is well evidenced by the partial, at times almost complete, draining of the Cedar Grove Reservoir due to drought. In a comparatively short time this area,

TABLE VI

Spring Arrival Calendar—(Average Arrivals of Representative Species)
Essex County Only

Feb. 26—Purple Grackle
Mar. 1—Bluebird
Mar. 4—Red-wing
Mar. 11—Fish Crow
Mar. 12—Cowbird
Phoebe
Mar. 15—Woodcock
April 4—Hermit Thrush
April 6—Ruby-crowned Kinglet
April 9—Chipping Sparrow
Yellow Palm Warbler
April 11—Yellow-bellied Sapsucker
April 13—Osprey
April 17—Barn Swallow
April 20—Towhee
April 21—Brown Thrasher
April 24—House Wren
Broad-winged Hawk
April 26—Black and White Warbler
Chimney Swift
April 27—Green Heron
Solitary Vireo
Black-thr. Green Warbler
April 29—Whip-poor-will
April 30—Yellow Warbler
May 2—Ovenbird
Wood Thrush
May 3—Baltimore Oriole
Catbird
May 5—Chestnut-sided Warbler
Prairie Warbler
Crested Flycatcher
May 6—Kingbird
May 7—Rose-breasted Grosbeak
Blackburnian Warbler
Scarlet Tanager
May 8—Magnolia Warbler
Black-billed Cuckoo
May 9—Bobolink
May 10—Red-eyed Vireo
May 11—Indigo Bunting
May 12—White-crowned Sparrow
Nighthawk
Gray-cheeked Thrush
Olive-backed Thrush
May 13—Wood Pewee
May 20—Yellow-bellied Flycatcher
May 21—Olive-sided Flycatcher
May 24—Mourning Warbler
May 25—Alder Flycatcher

50 (6-15 year average)
1906-1931

usually a resort of Kingfisher, Spotties, an occasional Killdeer or duck in season, was visited in 1929 also by Little Blue and Green Herons, both species of Yellow-legs, Least, Semipalmated and Solitary Sandpipers, Semipalmated Plover, and a Turkey Buzzard in search of the dead fish. Several of the above are the only records for the Montclair region in many years.

Fully as entertaining as the study of a limited local area is the attempt to locate the nests of our now rare and fast decreasing local raptors. The location of a Cooper's or a Sharp-shin or a local Red-shoulder Hawk or Barred Owl nest becomes an outstanding feature of the season, something to point out a year or two later or to visit often when the young are still about. Many a sad tale can be told of birds destroyed or nests deserted. My most enjoyable recent pleasure was finding in a few minutes, nests of Red-shoulder and Sparrow Hawk both with young, and seeing a Sharp-shin nearby in June not half a mile from the busy Pompton Turnpike.

In conclusion, the Essex County list stands at 283 forms and the Hudson County list at 235 forms; total 297 forms. That a few more will be added is certain. We still have a large number of possibilities such as Red-throated Loon, two scoters, European Teal, Snow Goose, Brant, Purple Gallinule, Little Black Rail, Swallow-tailed Kite, Philadelphia Vireo, Swainson's Hawk, either of the Brown-capped Chickadees, Bewick's Wren, Gray Kingbird, Arkansas Kingbird, Raven, Summer Tanager, and Cerulean Warbler which have been seen recently nearby or reported on questioned authority, not to mention some of the rarer accidentals. It is this that keeps up local systematic field work, perhaps this that prevents the banding or life history studies we ought to make. A fruitful source of added records is open to the student of old histories or rare books of travel in the early days of this part of our state. I must beg to differ with many who would exclude certain old or sight or even questioned records for experience shows that the authors of books even of a few years ago may err by leaning backwards. The status in "Birds of the New York Region" of the Forster's Tern, the Artic Three-toed Woodpecker, the Snowy Egret, the Nonpareil and the White Gyrfalcon are much to the point as all such species are established today after only a few years study.

It is just as much an error to omit a reasonable, unsupported record which may later be proved or supplemented as to include it in a list like this, for there will always be some who insist on making up their own minds anyway. I have tried to be sane throughout and to place the facts and authority before you, judge as you will.

TABLE VII

Excluding Introduced Species, Ten Most Typical Breeding Species as Nearly as Possible from Latest Breeding Counts

Area 2

Salt Marsh (Brackish)

1. Long-billed Marsh Wren
2. Song Sparrow
3. Sharp-tailed Sparrow
4. Red-wing
5. Meadowlark
6. Swamp Sparrow
7. Killdeer
8. Spotted Sandpiper
9. Savannah Sparrow
10. Bobolink

Area 3

Fresh Marsh of Newark-Hackensack Meadows

1. Swamp Sparrow
2. Long-billed Marsh Wren
3. Song Sparrow
4. Red-wing
5. Northern Yellow-throat
6. Killdeer
7. Fish Crow
8. Indigo Bunting
9. Yellow Warbler
10. Florida Gallinule

Area 4

Upland

1. Robin
2. Song Sparrow
3. Chipping Sparrow
4. House Wren
5. Wood Thrush
6. Catbird
7. Blue Jay
8. Flicker
9. Purple Grackle
10. Northern Yellow-throat

Area 5

Traprock Ridge Over 400 Feet

1. Towhee
2. Robin
3. Red-eyed Vireo
4. Ovenbird
5. Northern Yellow-throat
6. Crow
7. Blue Jay
8. Wood Thrush
9. Chestnut-sided Warbler
10. House Wren

Area 6

Passaic Valley Lowland

1. Red-wing
2. Song Sparrow
3. Swamp Sparrow
4. Barn Swallow
5. Robin
6. Yellow Warbler
7. Crow
8. Long-billed Marsh Wren
9. Northern Yellow-throat
10. Tufted Titmouse

ANNOTATED LIST

(E=Essex County; H=Hudson County. Unless otherwise noted records are by the author.)

Loon (*Gavia immer immer*)

Uncommon transient.

E—Regular on Cedar Grove Reservoir; Nov. 24, 1932; April 3, 1931 to May 29, 1932. An unusual flight May 1 to 9 in 1930, over 60 birds, Montclair.

Holboell's Grebe (*Colymbus grisegena holboelli*)

Usually rare transient or winter visitant.

E—A few shot on the Passaic below Summit (H. H. Hann 1905, Stone, p. 39); Port Newark, March 3, 1929 (J. L. E.) to April 8, 1934 (R. F. H.); one on Newark Bay in breeding plumage July 8, 1934 (W. F. E. and G. C. Rose). Some seasons, as in 1934, flights occur in February and March.

Horned Grebe (*Colymbus auritus*)

Rare transient and winter visitant.

E—Port Newark, at times common on Bay, rare inland; Nov. 11, 1930, Montclair, to April 23, 1911, Branch Brook Park (L. S. K.).

H—Occasional on Passaic and Hackensack Rivers; Feb. 12, 1934, Hackensack River (L. S. K.) to April 18, 1934, Croxton Pond.

Pied-billed Grebe (*Podilymbus podiceps podiceps*)

Not common transient; formerly bred.

E—Not common transient, especially on Verona Lake and Cedar Grove Reservoir; April 5, 1925 (Mrs. C. S. H.) to April 17, 1927 (J. L. E.); Sept. 10, 1925 (Mrs. C. S. H.) to Nov. 23, 1930 (J. L. E.); Feb. 15, 1934, one caught in ice at Port Newark (L. S. K.). At Port Newark, now a migrant, formerly bred to 1908; on May 30, 1906, in spot now destroyed, Hann, Callender, and Abbott found 5 nests (Stone, p. 40).

H—Observed several times at swamp at foot of Bergen Hill in Jersey City about 1901 (Eugene Smith, Linnaean Abstract, 1900-1902, p. 16). Rare fall migrant, chiefly seen in Croxton Pond; Aug. 17, 1932 (J. L. E.) to Oct. 13, 1928.

Leach's Petrel (*Oceanodroma leucorhoa*)

H—One record at Hoboken, Nov. 3, 1861 (W. Cooper, Griscom, p. 85).

Wilson's Petrel (*Oceanites oceanicus*)

Rare summer visitant to New York Bay.

H—June 14, 1934 to Aug. 21, 1934, extreme dates; seen also 1910, 1913, 1914, 1915, chiefly August (all L. S. K.); Sept. 6, 1907 (Chapin).

Gannet (*Sula leucogaster leucogaster*)

Rare transient.

H—Newark Bay, Oct. 1, 1930 (C. A. U.) only record; seen near C. R. R. bridge, probably in both Hudson and Union Counties.

Double-crested Cormorant (*Phalacrocorax auritus auritus*)
Rare transient.

E—Two records at Port Newark: May 20, 1928 (C. A. U.), and Sept. 2, 1932 (J. Kuerzi and E. Mayr).

Great Blue Heron (*Ardea herodias herodias*)
Uncommon transient, rare in summer.

E—March 31, 1928 (W. R.) to May 11, 1913 (L. S. K.); June 16, 1929, June 20, 1912 (L. S. K.), July 4, 1935 (Knobloch) to Jan. 22, 1928.

H—Uncommon but regular migrant on meadows, April 8, 1927 (E. S. M.) to May 23, 1928 (L. S. K.); July 1, 1914 (E. S. M.) to Sept. 16, 1933.

American Egret (*Casmerodius albus egretta*)
Sometimes common summer visitant at Port Newark.

E—July 6, 1929 (C. C. Dauterman) to Oct. 1, 1933.

H—Rare summer visitant; July 7, 1935, Secaucus (J. L. E., R. T. Peterson, R. C., and W. F. E.) to Aug. 4, 1933, Snake Hill (J. L. E.)

Snowy Heron (*Egretta thula thula*)
Rare summer visitant.

E—Port Newark, July 23, 1933 (L. L. W.) to Sept. 3, 1930; Sept. 6 to 18, 1932, max. 12 (C. A. U., Proceedings of Linnaean Society, 1934, p. 84).

Louisiana Heron (*Hydranassa tricolor ruficollis*)
The rarest summer visitant heron.

E—July 26, 1933 (W. Kessler) to Aug. 25, 1930 (J. Kuerzi).

Little Blue Heron (*Florida caerulea caerulea*)
Regular, sometimes abundant, summer visitant.

E—July 3, 1933 (C. Brown) to Sept. 21, 1930 (R. C.).

H—Records in 1907 and 1923 (E. S. M.).

Green Heron (*Butorides virescens virescens*)
Not common summer resident.

E—April 13, 1927 (Montclair Bird Club) to Oct. 13, 1930 (Mrs. C. S. H.); nest and eggs, May 16, 1929 (W. R.) to June 30, 1893 (DeCourcey Cleveland).

H—Formerly bred, to 1920 (E. S. M.); May 15, 1927 to Aug. 12, 1928, Arlington (E. S. M.); Aug. 19, 1899, Greenville (Miller); July 2, 1929, Bellman's Creek (L. S. K.).

Black-crowned Night Heron (*Nycticorax nycticorax hoactli*)
Summer visitant; formerly bred.

E—Less common in summer than in spring and fall; present in summer but no recent nests; April 5, 1929 (E. S.) to Dec. 22, 1929 (J. L. E.); one bird Feb. 6, 1931 (Mrs. C. S. H.).

H—Formerly bred, Arlington (O. P. M.); July 7, 1935, Secaucus, to Dec. 24, 1929.

Yellow-crowned Night Heron (*Nyctanassa violacea violacea*)

Uncommon summer visitant, usually in immature plumage.

E—July 15, 1931 (C. A. U.) to Sept. 25, 1927, Port Newark (J. L. E.); Sept. 23, 1934, Branch Brook Park.

American Bittern (*Botaurus lentiginosus*)

Rare summer resident and transient.

E—March 25, 1928 (C. A. U.) to Dec. 21, 1930 (J. L. E.). Nest and eggs May 13, 1928 (E. S.).

H—Formerly bred, probably still does. One captured alive in airshaft in Jersey City, April 24, 1935 (H. Brady); April 14, 1935, May 11, 1931, one dead on meadows (L. S. K.); June 21, 1912 (L. S. K.); July 1, 1914, Arlington (E. S. M.) to Aug. 13, 1933.

Least Bittern (*Ixobrychus exilis exilis*)

Migrant and formerly a rare breeder.

E—May 15, 1934 (L. S. K.); nest and eggs May 19, 1929, Long Meadow (W. R.). At Port Newark bred up to 1916; May 30 to June 17, 1906, nests found by Hann and Callender (Stone, p. 100); migrants, July 23, 1933 to Sept. 12, 1934, when one with wounded wing was picked up in Belleville (B. S. Bowdish).

H—Probably breeds still in county; May 13, 1931, Croxton Pond and May 23, 1928, Saw Mill Creek (L. S. K.) to July 7, 1935 and a few September records when rail shooting (R. S. Lemmon).

Mute Swan (*Sthenelides olor*)

Introduced.

E—Two records: Oct. 15, 1932 (J. L. E.) and Dec. 15, 1929 (C. A. U.); captive birds released on Verona Lake, 1932, and Edgemont Lake, 1935.

H—Feb. 7, 1925, C. R. R. N. J. ferry, probably this species (C. A. U. and W. F. E.).

Whistling Swan (*Cygnus columbianus*)

Rare migrant.

H—De Vries (1639-42) reported swans on New York Bay with ducks and geese. (Eaton "Birds of New York.")

Canada Goose (*Branta canadensis canadensis*)

Uncommon transient, spring and fall.

E—Late March, 1922 (V. E. Gorman) to May 3, 1923 (Mrs. C. S. H.); Nov. 15, 1931 (Mrs. Fry) to early December (L. S. K.).

H—Nov. 21, 1920 (O. P. M.); more common in spring (R. S. Lemmon); De Vries (1639-42) recorded on New York Bay (Eaton "Birds of New York"); formerly in North Bergen ("History of Hudson County," Shaw) and formerly common transient at Arlington (Paulson); April 14, 1935 flock of 56 flying north at Fairview.

Mallard (*Anas platyrhynchos platyrhynchos*)

Migrant and rare breeder.

E—Migrant and rare breeder, at least formerly in Hatfield Swamp; March 1, 1935 (W. R.) to Dec. 26, 1931; fall arrival at Newark, Aug. 2, 1933 (C. A. U.) and Aug. 17, 1929; feral birds from Verona Lake now casual in summer and fall.

H—Recorded, Newark Bay (C. A. U.); reported formerly, rather late in fall (R. S. Lemmon, *Field and Stream,* Aug. 1932, p. 34).

Red-legged Black Duck (*Anas rubripes rubripes*)

Winter visitant.

E—March 1, 1935, Hatfield (W. R.); common in winter on Newark Bay; several records of birds seen or collected, Sept. 14 to Nov. 4, 1913 (L. S. K.)

Black Duck (*Anas rubripes tristis*)

Permanent resident and common transient.

E—Breeds and winters irregularly; the most common duck, but rare in Montclair region; May 13, 1928, nest and eggs, Caldwell (E. S.).

H—Permanent resident and regular breeder, but less often seen in winter on Hackensack; formerly more common but local increase at North Hudson Park; at times abundant on Newark Bay. Brood of young, June 3, 1932, North Hudson Park; Oct. 15, 1914, flock of 10, D. L. & W. ferry (L. S. K.).

Gadwall (*Chaulelasmus streperus*)

Rare migrant.

E—April 2, 1933 (R. F. H.) at Port Newark (Proceedings of Linnaean Society, 1934, p. 85).

European Widgeon (*Mareca penelope*)

Rare migrant.

E—One record at Port Newark, Jan. 6, 1929 (C. A. U.)

Baldpate (*Mareca americana*)

E—Few records on Newark Bay, March 1, 1935 (W. R.) to March 17, 1929 (C. A. U.); Sept. 9, 1928 and Oct. 7, 1934.

H—One record, March 21, 1931, Croxton Pond (J. L. E. and W. F. E.). Several records on upper Hackensack meadows (R. S. Lemmon).

Pintail (*Dafila acuta tzitzihoa*)

Regular transient, occasionally common in spring.

E—July 4, 1929 (C. A. U.) to Dec. 24, 1933; Feb. 4, 1928 (W. R.) to May 15, 1931 (C. A. U.).

H—March 28, 1934 (L. S. K.).

Green-winged Teal (*Nettion carolinense*)

Uncommon transient.

E—March 1, 1935 (W. R.) to May 29, 1846 (H. W. Herbert); Port Newark, Sept. 15, 1928 (J. Kuerzi) to Dec. 18, 1927 (C. A. U.).

H—One shot on Passaic at Arlington, 1904, by R. Belden (E. S. M.); also reported formerly (R. S. Lemmon) in *Field and Stream,* August, 1932, p. 34.

Blue-winged Teal (*Querquedula discors*)

Uncommon transient.

E—March 15, 1931 (C. A. U.) to May 11, 1928 (E. S.); Sept. 3, 1928 to Oct. 12, 1932 (J. L. E.).

H—One shot by Cyrus Belden, Arlington (E. S. M.), also reported in *Field and Stream*, August, 1932, p. 34; used to be common by Sept. 1 (R. S. Lemmon).

Shoveller (*Spatula clypeata*)

Rare.

E—Port Newark, Aug. 26, 1929 (R. C.) to Nov. 4, 1928 (C. A. U.).

Wood Duck (*Aix sponsa*)

Rare breeder.

E—Rare breeder in Caldwell area (at least formerly), March 1, 1935 (W. R.) to Dec. 24, 1932 (E. Pontecorvo).

H—Specimen in Paterson Museum reputedly shot on Hackensack meadows in September, 1822. R. T. Morris records it in winter on the Hackensack meadows (*Forest and Stream*, 1888); a few records (R. S. Lemmon). Not recorded by Medsger.

Redhead (*Nyroca americana*)

Rare migrant.

E—Feb. 11 to March 31, 1928 (E. S. and W. R.); Oct. 23, 1932 (Loomis).

H—Sometimes seen after northeast storms (R. S. Lemmon).

Ring-necked Duck (*Nyroca collaris*)

Occasional on reservoir; apparently increasing in spring.

E—March 25, 1933 (J. L. E.) to April 23, 1933.

Canvasback (*Nyroca valisineria*)

Not common.

E—Only 4 records—Cedar Grove Res., Nov. 9 and 16, 1930 (J. L. E. and W. F. E.); Port Newark, Feb. 12, 1928 (J. L. E.) and Feb. 15, 1934 (L. S. K.).

H—Reported formerly (*Field and Stream*, August, 1932, p. 34—R. S. Lemmon).

Greater Scaup (*Nyroca marila*)

Common migrant and winter visitant.

E—March 15, 1931 (C. A. U.) to May 9, 1931; Cedar Grove Res. (Montclair Bird Club).

H—Scaup (Sp.) common on New York and Newark Bays in fall and winter; Jan. 8, 1933 to March 16, 1927.

Lesser Scaup (*Nyroca affinis*)

E—Newark Bay, Oct. 31, 1920 to May 29, 1921 (C. A. U., "Birds of Union County"); June 17, 1906 (Hann and Callender, Auk, 1907).

American Goldeneye (*Glaucionetta clangula americana*)

Not common except at times in winter on Newark and New York Bays.

E—Dec. 23, 1927 (J. L. E.) to April 4, 1930 (J. L. E.).

H—Jan. 8, 1933, Black Tom.

Bufflehead (*Charitonetta albeola*)

Rare migrant.

E—Nov. 1, 1931 to Nov. 21, 1926 (J. L. E.); March 20, 1932 (J. L. E., W. F. E., Chaliff).

H—A few (R. S. Lemmon).

Old Squaw (*Clangula hyemalis*)

Rare winter visitant.

E—Feb. 15, 1934, Newark Bay (L. S. K.); April 16, 1930, Cedar Grove Res. (J. L. E.); Nov. 18, 1928 (J. L. E.) to Nov. 21, 1931 (Mrs. C. S. H.).

H—Taken in winter off Robbins Reef. Seen in taxidermist's shop by W. Rusling. Also, Oct. 22, 1913, Hoboken (L. S. K.).

Harlequin Duck (*Histrionicus histrionicus histrionicus*)

H—On Sept. 7, 1913, keeper of light at Ellis Island exhibited to L. S. K. skin of this bird which he claimed was killed hitting light.

White-winged Scoter (*Melanitta deglandi*)

Uncommon migrant.

H—From Erie ferry, Dec. 3, 1933, only record.

Ruddy Duck (*Erismatura jamaicensis rubida*)

Rare and decreasing.

E—April 23, 1915 (R. H. H.); Nov. 4, 1930 (J. L. E.) to Nov. 18, 1922 (Mrs. C. S. H.).

H—Recorded (R. S. Lemmon).

Hooded Merganser (*Lophodytes cucullatus*)

Uncommon migrant.

E—Not common; March 24, 1935; March 31, 1928, Caldwell area (E. S. and W. R.); and March 20, 1932, East Orange Watershed (W. F. E., J. L. E., and E. Chaliff).

American Merganser (*Mergus merganser americanus*)

Common migrant, sometimes winters.

E and H—On Newark Bay and inland on the Passic, Commonwealth, Cedar Grove Reservoir, etc.; winters some years, but more common in March; Nov 24, 1932 to April 13, 1929 (W. R.).

Red-breasted Merganser (*Mergus serrator*)

Common migrant, sometimes winters.

E—Newark Bay, Commonwealth and Cedar Grove Reservoirs and Passaic River (winter); Oct. 23, 1932 to May 20, 1920 (J. L. E.).

H—Hackensack River, April 8, 1933.

Turkey Vulture (*Cathartes aura septentrionalis*)
Rare in east, uncommon in west of county.

E—March 25, 1922 (Mrs. C. S. H.) to May 16, 1932; Aug. 18, 1929 to Oct. 27, 1929 (W. R.).

H—Sept. 7, 1913, Secaucus, one found dead (L. S. K.).

Eastern Goshawk (*Astur atricapillus atricapillus*)
Rare winter visitor.

E—Dec. 6, 1934 (Mrs. C. S. H.); Dec. 13, 1896 (coll. by W. E. D. Scott) to March 13, 1928 (E. S.); only 7 records.

Sharp-shinned Hawk (*Accipiter velox velox*)
Permanent resident.

E—Permanent resident, rare as a breeder, not common in winter, but regular though decreasing migrant in numbers, spring and fall; May 11, 1928, nest and eggs (E. S.).

H—Regular migrant, rare in winter and probably formerly permanent resident; Sept. 6, 1925 (E. S. M.); January, 1929 (E. S. M.); Jan. 1, 1910, Westside Park (L. S. K.) to May 17, 1915 (E. S. M.).

Cooper's Hawk (*Accipiter cooperi*)
Permanent resident.

E—Permanent resident; rare in winter and uncommon breeder; nest and eggs, May 25, 1927 (W. R.).

H—Rare transient, probably formerly a permanent resident; Oct. 1, 1921 to April 18, 1916 and May 21, 1921, Arlington (E. S. M.).

Eastern Red-tailed Hawk (*Buteo borealis borealis*)
Winter visitant.

E—Formerly a resident, now only common as winter visitant. Last breeding record, nest and eggs, Caldwell, April 2, 1928 (W. R.). Only four nesting records, including set of eggs April 20, 1895, Short Hills, collected by De Courcey Cleveland in Hallinan collection, Paterson Museum; July 10, 1908 (L. S. K.); Sept. 5, 1922 (W. de W. Miller) to April 12, 1931.

H—Winter visitant on meadows, Oct. 15, 1921 to May 25, 1913 (E. S. M.)

Northern Red-shouldered Hawk (*Buteo lineatus lineatus*)
Permanent resident.

E—Formerly common breeder, now rare; rare in winter; Feb. 11, 1934 to Dec. 26, 1931; nest and eggs, March 29, 1928 (W. R.).

H—Formerly permanent resident, last probable breeding, 1915; now migrant; Sept. 12, 1914 to May 12, 1921 (E. S. M.); one dead, Dec. 26, 1925 (E. S. M.).

Broad-winged Hawk (*Buteo platypterus platypterus*)
Migrant.

E—At times common migrant, rare in summer; April 15, 1934 to Sept. 27, 1930 and 1931.

H—Uncommon migrant; Sept. 20, 1910 (L. S. K.) and Sept. 20, 1921 (E. S. M.); April 23, 1922, Arlington (E. S. M.).

American Rough-legged Hawk (*Buteo lagopus s. johannis*)
Migrant and winter visitant.

E—Not common; Nov. 2, 1930 to Feb. 7, 1925.

H—Regular, sometimes common, in migration and winter on meadows; Oct. 19, 1934 to April 14, 1935.

Golden Eagle (*Aquila chrysaetos canadensis*)
Rare migrant.

E—Several records and reported specimens all old but one; May, 1865 (T. M. Trippe, *American Nature,* 1874, p. 346); Nov. 25, 1934, one seen along Passaic meadows near Dickinson's Neck (E. Chaliff).

Southern Bald Eagle (*Haliaetus leucocephalus leucocephalus*)
Rare migrant.

E—Now rare, formerly seen more often in migration; Oct. 7, 1928 (J. L. E.) to April 26, 1930 (J. Q. Adams).

Marsh Hawk (*Circus hudsonius*)
Permanent resident.

E—Permanent resident, regular at Port Newark, rare elsewhere except as a migrant.

H—Rare permanent resident on Hackensack meadows; more common in spring and fall as migrant.

Osprey (*Pandion haliaetus carolinensis*)
Migrant; occasional in summer.

E—April 1, 1928 (J. L. E.) and April 1, 1935 to Oct. 9, 1932; uncommon in summer but not known to breed.

H—Now rare transient; formerly regular migrant along Passaic at Arlington (C. E. Paulson); April 24, 1929; Aug. 16, 1898, Newark Bay (W. de W. Miller) to Oct. 22, 1933 [nest on Overpeck in Bergen County to 1898, R. S. Lemmon].

Duck Hawk (*Falco peregrinus anatum*)
Migrant.

E—Uncommon migrant, rare in winter; Sept. 3, 1928 to May 11, 1929 (J. L. E.).

H—Nov. 11, 1931 (J. L. E.) to Nov. 23, 1928; March 28, 1934 (L. S. K.) to May 17, 1920. (E. S. M.).

Eastern Pigeon Hawk (*Falco columbarius columbarius*)
Migrant.

E—Less often seen than preceding species; April 4, 1909 (R. H. H.) to May 11, 1912 (L. S. K.); July 21, 1935 (L. L. W. and R. T. Peterson) to Sept. 29, 1928.

H—Medsger reports one taken in hencoop, Arlington; Sept. 13, 1931, Secaucus (J. L. E.) to Oct. 23, 1915, Westside Park (L. S. K.).

Eastern Sparrow Hawk (*Falco sparverius sparverius*)
Permanent resident.

E—Uncommon breeder and permanent resident; nest and young, June 15, 1910 (L. S. K.).

H—Very rare breeder and permanent resident.

Ruffed Grouse (*Bonasa umbellus umbellus*)
Extirpated.

E—No longer found; last records, Caldwell, March 11, 1927 (E. S.); Montclair, Feb. 1, 1928 (Mrs. Abbott); Orange, Feb. 15, 1925 (C. A. U.).

H—Formerly in North Bergen township, before 1887 ("History of Hudson County"). [In Bergen County east of Englewood till about 1910, R. S. Lemmon.]

European Partridge (*Perdix perdix perdix*)
Introduced but extirpated.

E—Introduced in West Caldwell, bred, but killed off a few years ago (1932), (former Warden, Fred Hall).

Eastern Bob-white (*Colinus virginianus virginianus*)
Uncommon permanent resident and decreasing despite artificial plantings.

E—Two records at Port Newark, fall 1934 (L. S. K.). So far as now known a rare breeder in only one or two places. Last record (Orange region), Dec. 24, 1932 (Chaliff); Montclair, July 7, 1929, until stocked April, 1935, by the Montclair Bird Club.

H—Formerly bred in West Hoboken and North Bergen ("History of Hudson County"), formerly bred at Arlington; last record July 16, 1928 (E. S. M.).

Florida Bob-white (*Colinus virginianus floridanus*)
Introduced; now extirpated.

E—Specimen taken by Herrick at Chatham (now in Springfield, Mass., Museum) probably Dickenson's Neck, Nov. 26, 1871, indicates their planting many years ago.

Ring-necked Pheasant (*Phasianus colchicus torquatus*)
Permanent resident—introduced 1897

E—Permanent resident and rare breeder; June 8, 1927, nest and 14 eggs (W. R.).

H—Very rare permanent resident; still breeds at Arlington; nest and eggs, May 1, 1920 (E. S. M.).

Whooping Crane (*Grus americana*)

H—De Vries (1639-1642) reports with swans, ducks and geese on New York Bay (Eaton's "Birds of New York").

King Rail (*Rallus elegans*)

Formerly bred, rare migrant.

E—Nest down river from Summit, 1895 (Littlejohn, Stone, p. 110); May 13, 1928 (E. S.) and May 13, 1923 (Mrs. C. S. H.)

H—A few records in fall (R. S. Lemmon.)

Northern Clapper Rail (*Rallus longirostris crepitans*)

Rare breeder and migrant.

E—Port Newark, formerly bred; no recent records except as migrants until June, 1935, when this species became re-established on the only piece of undrained marsh suitable (C. A. U.).

H—1901, observed by Eugene Smith in March at foot of Bergen Hill, Jersey City (Linnaean Abstract, 1900-1902, p. 16).

Virginia Rail (*Rallus limicola limicola*)

Rare breeder.

E—April 23, 1929 (W. R.) to Sept. 24, 1933; now rare breeder; nest and eggs, May 17, 1927 (W. R.)

H—Formerly bred, Arlington to 1927 (E. S. M.); rare fall migrant when rail shooting (R. S. Lemmon). Still breeds on meadows, March 26, 1927 to July 29, 1931.

Sora Rail (*Parzana carolina*)

Formerly rare breeder.

E—April 2, 1933 (R. F. H.) to Sept. 24, 1933 (W. F. E. and J. L. E.); nest and eggs, May 15, 1929 (W. R.).

H—Arlington, probably a former breeder to June 28, 1919 (E. S. M.); Greenville, Aug. 19, 1899 (Miller); Saw Mill Creek, May 23, 1928 (L. S. K.); May 6, 1920 (E. S. M.) to Oct. 22, 1933; Fairview; formerly abundant in fall flights (R. S. Lemmon); may still breed in meadows but no recent proof.

Yellow Rail (*Coturnicops noveboracensis*)

E and H—Herrick reports 4 to 5 specimens shot on meadows near Dickinson's place; 2 specimens in collection labeled "about 1875" (Linnaean Society meeting, Nov. 2, 1878) (*Forest and Stream,* XII, 1879, p. 165); a female in Herrick's collection now in Springfield Museum, dated Sept. 17, 1877, Madison, N. J.

Florida Gallinule (*Gallinula chloropus cachinnans*)

Migrant.

E—Now extirpated as a summer resident at least in its former haunts at Long meadow and Port Newark; nest and eggs, May 16, 1926 (W. R.) to July

1, 1905 (Abbot, Hann, and Callender, Auk, 1907, p. 1-11); April 26, 1929 (W. R.) to Sept. 20, 1931 (J. L. E.).

H—Formerly bred in Kearney (O. P. M.); still breeds at Secaucus, Croxton Ponds, and Fairview, June, 1922 (Griscom) to Oct. 11, 1931 (M. Rich); specimen in hotel at Homestead.

Coot (*Fulica americana americana*)

Rare migrant.

E—Now a rare transient to Nov. 13, 1932 (Loomis); formerly bred at Port Newark; nest, May 30, 1907 (Abbot, Auk 1907, p. 436).

H—April 26, 1933, Croxton (J. L. E.) to May 12, 1920 (E. S. M.); Oct. 28, 1905 (E. S. M.); 1901, observed by Eugene Smith in marshy spot at foot of Bergen Hill, Jersey City (Linnaean Astract, 1900-1902, p. 16).

Piping Plover (*Charadrius melodus*)

Rare migrant.

E—April 4, 1930 (R. C.) to May 20, 1928 (C. A. U.); Aug. 10, 1927 (C. A. U.).

Semipalmated Plover (*Charadrius semipalmatus*)

Common migrant.

E—Rare inland; second shorebird in abundance at Port Newark; May 12, 1934 (C. A. U.) to May 31, 1930 and 1931 (J. L. E. and C. A. U.); June 27, 1933 (C. A. U.) to Oct. 23, 1932.

H—May to June 17, 1932, at Secaucus (M. Rich); July 26, 1931 to Aug. 13, 1933.

Killdeer (*Oxyechus vociferus vociferus*)

Permanent resident.

E—Permanent resident, rare in winter; has increased in last 25 years; Feb. 10, 1935 (D. Wilson); Jan. 15, 1933; Dec. 28, 1931 (L. S. K.); Jan. 1, 1935; young able to run, May 4, 1930. Migrants, July 3, 1931 (C. A. U.)

H—Regular summer resident at suitable places; March 6, 1910 (L. S. K.) to Oct. 8, 1919 (E. S. M.).

Golden Plover (*Pluvialis dominica dominica*)

Irregular migrant.

E—At times frequent transient in fall at Port Newark, Aug. 23, 1933 to Nov. 12, 1932 (C. A. U.).

H—One reported shot on Hackensack meadows (L. S. K., *The Oologist*, February, 1931, No. 525, p. 25); Sept. 13, 1931, several seen (by J. L. E., Herbert and Kassoy) at Secaucus.

Black-bellied Plover (*Squatarola squatarola*)

Common transient, one winter record.

E—Port Newark, May 8 to June 8, 1929; July 27, 1930 (J. L. E.) to Nov. 18, 1928 and Jan. 6, 1935 (C. A. U.).

H—Secaucus, Sept. 13, 1931 (J. L. E., R. Herbert, and I. Kassoy).

Ruddy Turnstone (*Arenaria interpres morinella*)
Uncommon migration.

E—Port Newark, not common, Aug. 22, 1928 to Oct. 6, 1929 (C. A. U.).

H—Secaucus, Aug. 11, 1932 (W. F. E. and J. L. E.) and Aug. 14, 1932 (J. L. E.).

Woodcock (*Philohela minor*)
Breeds.

E—Feb. 27, 1930 (W. R.) to Nov. 28, 1929; nest and young, May 11, 1929 (W. R.); young, May 12, 1934 (D. Wilson).

H—Formerly found in West Hoboken and nested in Arlington to about 1910 (O. P. M.); seen May 11, 1927 (E. S. M.); March 26, 1927 to Nov. 15, 1920 (O. P.M.).

Wilson's Snipe (*Capella delicata*)
Irregular migrant.

E—Formerly abundant on Great Piece Meadows and formerly bred on Dickinson's Neck, March 25, 1928 (E. S.) to May 7, 1935 (L. S. K.) and May 26, 1910 (L. S. K.) at Bloomfield; Sept. 3, 1928 to Dec. 2, 1928 (C. A. U.); also Feb. 11, 1934; Feb. 10, 1935 (D. Wilson) and Feb. 17, 1935 (W. F. E. and J. L. E.), all at Bloomfield.

H—Much less common than formerly; recorded in West Hoboken; March 26, 1927 to April 11, 1920 (E. S. M.); formerly shot commonly in fall and spring, March 10-April 30 (R. S. Lemmon). Specimens in hotel at Homestead.

Hudsonian Curlew (*Phaeopus hudsonicus*)
Rare migrant

E—Port Newark, July 23, 1930 (C. A. U.) to Aug. 29, 1927 (J. L. E.).

Upland Plover (*Bartramia longicauda*)
Migrant

E—Port Newark, July 11, 1928 (C. A. U.) to Sept. 25, 1927 (J. L. E.). Specimen in Herrick collection labeled Passaic meadows, September, 1871.

Spotted Sandpiper (*Actitis macularia*)
Breeds.

E—Common migrant and breeder; April 20, 1930 (W. R.) to Sept. 25, 1932; nest, June 12, 1906, with 3 young and 1 unbroken egg (L. S. K.)

H—Occurs in suitable localities; formerly bred in Arlington (O. P. M.); May 6, 1929 to Sept. 17, 1927 (E. S. M.).

Eastern Solitary Sandpiper (*Tringa solitaria solitaria*)
Common migrant.

E—Regular migrant inland; less common at Port Newark; April 28, 1929 to May 31, 1934 (L. S. K.); July 11, 1934 (C. A. U.) to Sept. 30, 1933 (C. A. U.).

H—Regular in fall at Secaucus, July 16, 1932 to Oct. 30, 1931 (J. L. E.).

Willet (subsp.?) (*Catoptrophorus semipalmatus*) [*semipalmatus* or *insinatus*]
Uncommon migrant.

E—Port Newark, May 15, 1934 (L. S. K.); July 21 to Sept. 29, 1929 (C. A. U.); no collected specimens from our area.

Greater Yellow-legs (*Totanus melanoleucus*)
Common migrant.

E—Rare inland; common at Port Newark, March 31, 1933 (C. A. U.) to May 30, 1931; June 27, 1933 (C. A. U.) to Nov. 30, 1933 (C. A. U.).

H—Regular transient (Griscom, "Birds of New York City Region"); May 9, 1920 (E. S. M.) to May 30, 1934; also fall.

Lesser Yellow-legs (*Totanus flavipes*)
Abundant fall migrant; rare spring migrant.

E—Rare inland and in spring; abundant in fall at Port Newark; April 30, 1931 to May 13, 1934 (C. A. U.); June 27, 1933 (C. A. U.) to Nov. 5, 1932 (C. A. U.).

H—Very rare in spring (Griscom, "Birds of New York City Region"); second fall migrant in abundance at Secaucus; July 8, 1934 to Sept. 10, 1935.

American Knot (*Calidris canutus rufus*)
Rare migrant.

E—Port Newark, May 30 and 31, 1930 (J. L. E.); Aug. 17, 1930 (Herbert) to Oct. 1, 1933.

Pectoral Sandpiper (*Pisobia melanotos*)
Common migrant.

E—Port Newark, July 14, 1932 and July 14, 1934 (C. A. U.) to Nov. 6, 1934 (C. A. U.).

H—Fourth shorebird migrant in numbers at Secaucus; July 16, 1932 to Aug. 11, 1932.

White-rumped Sandpiper (*Pisobia fuscicollis*)
Common migrant at times.

E—Port Newark, May 30, 1930 and 1931 (J. L. E.); July 2, 1933 (C. A. U.) to Nov. 11, 1933 (C. A. U.).

H—Probably occurs at Secaucus; no positive record.

Baird's Sandpiper (*Pisobia bairdi*)
Rare migrant.

E—Port Newark, 7 records in 1933, Aug. 30 (C. A. U.) to Oct. 7 (Breslau and Sedwitz).

Least Sandpiper (*Pisobia minutilla*)
Common migrant.

E—April 20, 1929 (Wolfarth) to May 31, 1930 (C. A. U.); June 23, 1934 (C. A. U.) to Nov. 4, 1933 (C. A. U.).

H—Third migrant shorebird in abundance at Secaucus; May 27, 1930, Harrison; July 7, 1935 to Sept. 10, 1935, Secaucus.

Red-backed Sandpiper (*Pelidna alpina sakhalina*)
Common migrant.
E—Port Newark, Oct. 1, 1933 to Nov. 30, 1933 (C. A. U.); occurs in spring but no county records at hand.

Eastern Dowitcher (*Limnodromus griseus griseus*)
Common migrant.
E—Port Newark, May 7, 1935 (L. S. K.) to May 30, 1930 (C. A. U.); June 21, 1935 (C. A. U.) to Oct. 29, 1933 (C. A. U.).
H—Secaucus, July 26, 1931, flock of 15.

Long-billed Dowitcher (*Limnodromus griseus scolopaceus*)
Very rare and no collected specimens.
E—Port Newark, Sept. 9 to 30, 1933, several sight records (C. A. U.).

Stilt Sandpiper (*Micropalama himantopus*)
More common migrant than formerly supposed.
E—Port Newark, July 7, 1934 (C. A. U.) to Oct. 12, 1934 (G. Rebell).
H—Secaucus, Sept. 5, 1931 (J. L. E.).

Semipalmated Sandpiper (*Ereunetes pusillus*)
Most abundant shorebird; some recent decrease.
E—May 12, 1929 (J. L. E.) to May 31, 1930 (C. A. U.); July 7, 1931 to Nov. 9, 1930 (L. L. W.).
H—Commonest migrant at Secaucus; May 27, 1934, Harrison, to June 17, 1932, Secaucus (M. Rich); July 16, 1932 to Sept. 10, 1935.

Western Sandpiper (*Ereunetes mauri*)
At times common migrant; more frequently identified than formerly.
E—Port Newark, July 14, 1934 (C. A. U.) to Oct. 17, 1934 (L. S. K.).
H—Regular transient at Secaucus; July 26, 1931 to Aug. 30, 1931 (J. L. E.).

Buff-breasted Sandpiper (*Tryngites subruficollis*)
Very rare migrant, but recorded nearly every fall.
E—Port Newark, Sept. 6, 1931 (I. Kassoy and R. Herbert) to Oct. 9, 1932 (J. L. E.).

Marbled Godwit (*Limosa fedoa*)
Very rare migrant.
E—Port Newark, Aug. 22 to Sept. 1, 1928 (J. L. E.); Sept. 15 and 18, 1929 (Herbert, Hickey, and Kassoy).

Hudsonian Godwit (*Limosa haemastica*)
Very rare.
E—Port Newark, July 3, 1925, in breeding plumage (C. A. U.); Aug. 31 (R. Friedman) to Oct. 13, 1928 (J. L. E.).

Ruff (*Philomachus pugnax*)

H—A specimen in the Jersey City Museum may have been taken in the county but positive data are lacking.

Sanderling (*Crocethia alba*)

Not common migrant.

E—Port Newark, May 14, 1935 (L. S. K.); July 22 to Oct. 22, 1928 (C.A.U.).

H—Specimen in collection of mounted birds at Secaucus reported shot in vicinity.

Avocet (*Recurvirostra americana*)

E—Port Newark, 1932. Three birds seen by many observers, Sept. 15 to Oct. 4, reported as remnant of flock of 12 (C. A. U.).

Red Phalarope (*Phalaropus fulicarius*)

Rare migrant.

E—Port Newark, one record, May 12, 1934 (C. A. U.).

H—Dr. Abbot (1868) records one shot on the Hackensack, June 27, 1863 (Stone, p. 117).

Wilson's Phalarope (*Steganopus tricolor*)

Rare but seen more frequently than formerly.

E—Port Newark, Sept. 1, 1930 (C. A. U.) to Oct. 8, 1932 (C. A. U.); only one spring record, May 12, 1934 (C. A. U.).

H—Secaucus, Sept. 13, 1931 (J. L. E., R. Herbert, and I. Kassoy).

Northern Phalarope (*Lobipes lobatus*)

Rare migrant.

E—Port Newark, Aug. 23, 1933 (C. A. U.); Aug. 27 and Sept. 15, 1929 (R. Herbert); Sept. 10, 1933 (Hickey); Sept. 18, 1934 (J. L. E. and J. R. Kuerzi, *Bird-Lore*, p. 370, Vol. XXXVI).

Pomarine Jaeger (*Stercorarius pomarinus*)

E—H. Herrick writes (*Forest and Stream*, XII, 1879, p. 165, paper read before Linnaean Society, Nov. 2, 1878) "Will Dickinson shot an immature specimen of the genus *Stercorarius* probably *pomatorhinus* (now *pomarinus*) in a freshet on meadows after a storm in October, 1876."

H—This species also reported in New York Harbor, Oct. 23, 1932, by Breslau and Sedwitz (Proceedings of Linnaean Society, Abstract, May, 1934, p. 69).

Glaucous Gull (*Larus hyperboreus*)

Rare winter visitant.

E—1, at Port Newark, Feb. 5, 1928 (C. A. U.).

H—Several killed on lower Hudson (Chapman); more common from Ferries than Iceland Gull; Nov. 21, 1928 to May 4, 1933 (J. L. E.) from Erie Ferry.

Iceland Gull (*Larus leucopterus*)

Irregular winter visitant.

E—Frequent records at mouth of Bound Creek, Newark Bay, Jan. 15, 1922 to April 10, 1927 (C. A. U.).

H—Rare on Hudson River; Erie Ferry, Dec. 9, 1933 to Jan. 19, 1935 (J. L. E.).

Kumlien's Gull (var. *Larus leucopterus x Larus argentatus thayeri*)

H—Jan. 2, 1935, Staten Island ferry near Governor's Island (Peterson and Allen).

Great Black-backed Gull (*Larus marinus*)

Winter visitant—chiefly in very cold weather; much more common than before, winter 1934-1935.

E—Port Newark, Jan. 23, 1925 to March 5, 1923 (C. A. U.).

H—More common on Hudson-Erie Ferry; Dec. 2, 1915, Ellis Island (L. S. K.) to March 5, 1932, Erie Ferry.

Herring Gull (*Larus argentatus smithsonianus*)

Abundant except in summer.

E—At Port Newark and on lower Passaic River abundant in fall and winter, less so in spring; generally absent in early summer; July 23, 1933 to May 30, 1931; inland, Nov. 29, 1931 and 1934 to May 21, 1929 (W. R.); but more regular, Dec. 22, 1929 (E. S. and W. R.) to April 5, 1931.

H—Abundant on Hudson, September to April, inclusive; immatures or non-breeding birds less commonly seen from ferries, May to August; formerly less common. W. deW. Miller extreme old dates, Oct. 27, 1898 to May 11, 1901; none in summer. Full adult birds last noted April 29, 1930, and first noted July 3, 1935, Erie Ferry. Rather irregular on Hackensack and Passaic Rivers except in summer when birds in any plumage are rare. Their habits and sight frequency are governed by the tide.

Ring-billed Gull (*Larus delawarensis*)

Irregularly common, fall, winter and spring.

E—Port Newark, sometimes more abundant than formerly in fall and winter; not seen inland except one record at Weequahic Park; July 6, 1935 (J. L. E.) to May 30, 1931; various June records (C. A. U.).

H—Rather rare on Hudson but more common on Newark Bay and Hackensack River; Sept. 11 to June 8, 1931.

Laughing Gull (*Larus atricilla*)

Locally abundant summer and fall.

E—Port Newark, abundant in late summer, July 16, 1931 to December; rare in spring, April 2, 1933 (Haulenbeek) to June 8, 1929.

H—Common in fall on Hudson after 1921; formerly on Passaic (E. S. M.), less often in spring; April 22 to June 8, 1931. First re-established spring observa-

tion, May 7, 1922 (W. deW. Miller). Average fall Hudson River last date, Nov. 21 (9 years); July 5, 1932 to Nov. 30, 1935.

Bonaparte's Gull (*Larus philadelphia*)

Irregularly common or abundant.

E—Port Newark, irregular, sometimes common to abundant; July 30, 1932 to May 30, 1930 (C. A. U.).

H—On Hudson more irregular than other gulls, at times unseen; often abundant in December and January; July 26, 1934 (L. S. K.) to May 6, 1929 (J. P. Chapin). On Hackensack, Nov. 3 to April 18, 1934.

Little Gull (*Larus minutus*)

E—Port Newark, one bird with Bonaparte's Gulls, May 12, 1929 (J. L. E., W. F. E., and J. Thompson, Auk, Vol. XLVI, No. 3); also seen May 14 (C.A.U.).

H—New York Bay, May 7 and 8, 1933 (Chapin and Rich); May 6, 1929 (J. P. Chapin, Auk, Vol. XLVI, No. 43). Seen west of Governor's Island from Staten Island Ferry, probably same bird as Essex County record; seen both times with adult Bonaparte's Gulls.

Atlantic Kittiwake (*Rissa tridactyla tridactyla*)

H—Hudson River, May 4, year not recorded (C. A. U.).

Gull-billed Tern (*Gelochelidon nilotica aranea*)

H—L. S. Kohler reports on Sept. 7, 1913—"light house keeper at Ellis Island exhibited specimens of two terns killed by hitting light in late August; I believe they were later mounted by Hofman in Brooklyn."

Forster's Tern (*Sterna forsteri*)

Irregular migrant.

E and H—Newark Bay, seen irregularly in fall 1925, 1928, 1929, 1930, 1932, 1934, 1935; Aug. 18, 1929 to Nov. 2, 1930 (C. A. U.).

Common Tern (*Sterna hirundo hirundo*)

E—Newark Bay, regular migrant spring and fall but rare in spring; Aug. 4, 1927 (J. L. E.) and 1935 to Sept. 18, 1932.

H—Frequent on Hudson River; most common late August; April 19, 1932 (M. Rich); May 14, 1929; July 29 to Oct. 22, 1922, from C. R. R. of N. J. Ferry (W. deW. Miller).

Roseate Tern (*Sterna dougalli dougalli*)

Rare migrant.

E—Port Newark, one record only, Sept. 21, 1924 (C. A. U.).

Least Tern (*Sterna antillarum antillarum*)

Rare migrant.

E—Three records only; May 15, 1929 (R. F. H.); Aug. 5, 1933 (L. L. W.); Aug. 7, 1933 (R. Herbert and C. Farley).

Caspian Tern (*Hydroprogne caspia imperator*)

Rare migrant.

E—Port Newark, one record, May 20, 1928 (J. L. E.).

H—Bedloe's Island, N. Y. Bay, 2 seen Oct. 9, 1934 (L. S. K.).

Black Tern (*Chlidonias nigra surinamensis*)

E—Branch Brook Park, May 10, 1916 (L. S. K.); Port Newark, May 25, 1930 (J. L. E.) and May 29, 1932 (C. A. U.); Aug. 4, 1927 (J. L. E.) to Oct. 6, 1906 (W. deW. Miller).

H—Common on Hudson some years in late August and September; July 26, 1934 (L. S. K.) to Sept. 21, 1925 (W. de W. Miller).

Black Skimmer (*Rynchops nigra nigra*)

E—Port Newark, one record, Aug. 29, 1928 (C. A. U.).

Razor-billed Auk (*Alca torda*)

Rare migrant.

H—Two from Central R. R. of N. J. ferry, Dec. 5, 1926 (C. A. U.).

Brunnich's Murre (*Uria lomvia lomvia*)

Rare migrant.

E—Orange Reservoir, Dec. 24, 1899 (Babson; see Stone, p. 45).

H—On Jan. 14, 1929, C. A. U. saw one from the Central Railroad of N. J. ferry on the Hudson, and on Jan. 16 probably the same bird from the Erie ferry (W. F. E.).

Dovekie (*Alle alle*)

Accidental visitant.

E—Flight, blown in by storm, Nov. 19 and 20, 1932; live specimens picked up in Glen Ridge, Caldwell (Carrington Howard); Bloomfield, 3 (W. A. Young), specimen sent to American Museum; at least one bird released alive in Newark Bay (W. F. E.).

H—One seen from Central R. R. of N. J. ferry on Hudson, Nov. 20, 1932 (C. A. U.).

Rock-dove (*Columba livia livia*)

Feral.

E—Common permanent resident.

H—Common permanent resident.

Eastern Mourning Dove (*Zenaidura macroura carolinensis*)

Permanent resident.

E—Permanent resident, less common in winter; has probably increased in last 25 years; nest and eggs, March 20, 1921 (O. P. M.) to July 8, 1934, young in nest; earliest spring arrival, Feb. 28, 1933 (Mrs. Greene).

H—Still a summer resident; April 8, 1935 to July 26, 1931.

Passenger Pigeon (*Ectopistes migratorius*)
Extinct.

E—Formerly an abundant migrant (see text).

H—Formerly in Union township (Shaw's "History of Hudson County").

Carolina Paroquet (*Conuropsis carolinensis carolinensis*)
Believed extinct.

E—Albert Emmet Hedden, father-in-law of Harry Peck Havell of East Orange, reported that Carolina Paroquets appeared in his father's orchard in the "eighteen fifties." They did considerable damage to the apples, picking out the seeds, and were regarded as destructive pests. They flew about in little flocks and were seen during several hot summers.

Yellow-billed Cuckoo (*Coccyzus americanus americanus*)
Not common breeder.

E—May 12, 1912 (L. S. K.) to Oct. 13, 1924 (Mrs. C. S. H.); not common breeder; nest and 3 eggs, June 2, 1907 (L. S. K.).

H—May 6, 1929 to Oct. 8, 1919 (E. S. M.); formerly bred to 1920, Arlington (E. S. M.); nest and eggs, July 7, 1912, Kearney (L. S. K.).

Black-billed Cuckoo (*Coccyzus erythropthalmus*)
Not common breeder.

E—May 11, 1897, G. H. Swezey (specimen in Newark Museum); May 11, 1929 to Oct. 2, 1931 (J. L. E.); not common breeder; nest and eggs, May 21, 1928 (E. S.).

H—May 11, 1927 (E. S. M.) to Sept. 17, 1933; Arlington, formerly bred to 1919 (E. S. M.); nest in trees along Sawmill Creek, 1930 (J. L. E.).

Barn Owl (*Tyto alba pratincola*)
Still breeds rarely.

E—Bred and raised 2 young in St. Paul's Church, Newark, 1934 (W. E. Dillon); formerly bred up to 1920. Now appears to be chiefly a wanderer; March 12, 1935 to May 20, 1929 (W. R.); Oct. 14, 1932 to Nov. 30, 1928 (W. R.).

H—Two records at Arlington Cemetery; Oct. 30, 1932 and Oct. 28, 1933. Akhurst (1878) reports as seen frequently about Snake Hill (E. P. Bicknell, Bulletin, Nuttall Ornithological Club III, 1878, p. 132).

Eastern Screech Owl (*Otus asio naevius*)
Permanent resident.

E—Generally distributed permanent resident; often heard but rarely seen; nest, April, 1905 (L. S. K.); young, May 7, 1928 (E. S.) to June 28, 1933, just able to fly.

H—Permanent resident, 1929 (O. P. M.); Aug. 2, 1910, Arlington Cemetery (L. S. K.). "Aug. 17, 1913—one dropped to deck of Str. Monmouth near Robbins Reef to rest in its flight from Greenville to Brooklyn. It quickly took flight at being approached and soon made the Brooklyn side of the Bay—red phase" (L. S. Kohler).

Great-horned Owl (*Bubo virginianus virginianus*)
Permanent resident.

E—Permanent resident, formerly bred; may still now; rare, most often seen in winter; nest, March 4, 1903 (Callender); last summer records, July 2, 1917 (R. H. H.) and June 10, 1934.

Snowy Owl (*Nyctea nyctea*)
Rare in winter.

E—Rare, except in winters of big flights; recorded three winters in last 20. Nov. 12, 1926 to April 1, 1922 (C. A. U.).

H—One record on Hackensack meadows (R. H. H.).

American Hawk-owl (*Surnia ulula caparoch*)

E—Specimen in Dickinson collection reported by Larue K. Holmes in 1904 as taken on the property.

Northern Barred Owl (*Strix varia varia*)
Permanent resident.

E—Permanent resident, less common than formerly; one egg, March 1, 1935 (E. S.); full clutch, March 29, 1929 (L. S. K.) to April 8, 1907 (F. Merriam).

H—Winter only; one in a hemlock tree at Arlington, Jan. 26 to March 10, 1925 (E. S. M.); Jan. 1, 1910, Westside Park (L. S. K.).

Short-eared Owl (*Asio flammeus flammeus*)
Permanent resident.

E—Maximum 11 on Jan. 27, 1935; rare resident on Newark meadows; often seen in winter. One picked up dead in Branch Brook Park, Dec. 6, 1931, and remains of one killed in Hatfield Swamp found Jan. 3, 1935 (Wolfarth).

H—Winters on meadows and migrates; no summer records; Oct. 30, 1932 to March 13, 1931.

Long-eared Owl (*Asio wilsonianus*)
Uncommon in winter; rare breeder.

E—No positive breeding evidence until nest with sitting bird found March 18, 1935 (W. R.); winters; most common in February; Dec. 19, 1919 (R. F. H.) to April 22, 1911 (R. H. H.).

H—Winter visitant, formerly more common at Arlington; Roost of 12, Feb. 29, 1920 (O. P. M.); Nov. 12, 1922 (E. S. M.) to March 21, 1920 (E. S. M.).

Saw-whet Owl (*Cryptoglaux acadica acadica*)
Rare winter visitant.

E—Nov. 9, 1929 (B. S. Bowdish) to Feb. 25, 1929 (W. R.).

H—Winter only, 1910 (O. P. M.); Jan. 13, 1922 and Feb. 17, and March 10, 1906 (E. S. M.).

Eastern Whip-poor-will (*Antrostomus vociferus vociferus*)
Common migrant; rare breeder.

E—Regular migrant, formerly common summer resident; now very rare and almost extinct as a breeder; L. S. K. found 2 sets of eggs in 1906 and one in 1909 in West Orange; April 28, 1929 (C. A. U.) to Sept. 23, 1928.

H—Arlington, May 10, 1927 (E. S. M.).

Eastern Night-hawk (*Chordeiles minor minor*)
Common migrant; breeds locally.

E—Common migrant, local breeder in city areas, especially Newark; May 10, 1930 to Oct. 15, 1928 (E. S.).

H—May 10, 1928 to May 31, 1915 (E. S. M.); nest and two young on roof of Mengel Box Factory, Jersey City, July 9, 1910 (L. S. K.); Sept. 15, 1914 (E. S. M.) to Oct. 10, 1914, Westside Park (L. S. K.).

Chimney Swift (*Chaetura pelagica*)
Summer resident.

E—Common summer resident,, less so than formerly; April 3, 1926 (W. R.) to Oct. 8, 1896, collected by W. E. D. Scott (Urner, "Birds of Union County") and Oct. 26, 1935 (M. Solomon); May 22, 1934, nest started; 4 eggs, June 3, 1934 (W. R.).

H—Uncommon summer resident; May 14, 1916 (E. S. M.) to Oct. 11, 1914 (E. S. M.).

Ruby-throated Hummingbird (*Archilochus colubris*)
Very rare summer resident.

E—Very rare summer resident, less common than formerly; May 5, 1924 (R. F. H.) to Sept. 28, 1930 (Mrs. C. S. H.); nest, May 11, 1912; eggs, May 25, at Montclair Heights (L. S. K.); nest and eggs, May 27, 1894 to July 17, 1893, Short Hills (De Courcey Cleveland, Hallinan collection in Paterson Museum).

H—Formerly bred to 1930, nest, Arlington (O. P. M.); May 14, 1924 to May 28, 1927 (E. S. M.).

Belted Kingfisher (*Megaceryle alcyon alcyon*)
Resident.

E—A not uncommon resident, less common in winter but regular when any open fresh water persists; March 11, 1928 (E. S.) to Dec. 6, 1931; nest and eggs, June 9, 1928 (E. S.).

H—Formerly bred, Arlington (O. P. M.); uncommon migrant; March 25, 1929 to Sept. 30, 1934.

Northern Flicker (*Colaptes auratus luteus*)
Permanent resident.

E—Often quite rare in winter; nest, April 23, 1928 (E. S.): migrant at Port Newark, Sept. 24, 1933.

H—Rare in winter, formerly bred; Arlington, to 1919 (E. S. M.); Woodcliff, 1931; common migrant, March 30, 1935; nest, May 17, 1911, Westside Park (L. S. K.).

Northern Pileated Woodpecker (*Ceophloeus pileatus abieticola*)

E—Recent workings near Verona Lake, 1915 (Fleischer—Linn. Abs. No. 27, p. 40). A bird picked up dead, shot in neck and fresh, Feb. 22, 1929, in Essex County Reservation (E. C.).

Red-bellied Woodpecker (*Centurus carolinus*)

E—Herrick reports Dickinson took one specimen. (Linn. paper, Nov. 2, 1878, *Forest and Stream*, XII, 1879, p. 165). Reported in Belleville swamp in 1927 (F. W.) and an excellent view of a ♂ bird in company with Red-headed Woodpeckers seen by J. L. Edwards and William Rusling at Pine Brook, Jan. 25, 1936.

Red-headed Woodpecker (*Melanerpes erythrocephalus*)

E—Irregular permanent resident. Some years absent as a wintering bird or as a breeder. Once common in Passaic Valley west of the hills, chiefly in river lowlands. Nest and eggs, June 7, 1928 (E.S.). Rarer than formerly in east part of county.

H—Formerly bred, to 1925, at Arlington (O. P. M.); April 1, 1920 to Oct. 25, 1908, Secaucus (L. S. K.). Last record as migrant, May 13, 1929 (E. S. M.); formerly regular.

Yellow-bellied Sapsucker (*Sphyrapicus varius varius*)

Transient and winter visitant.

E—Regular in spring and fall; irregular in winter, but half a dozen records in December, January or February; April 3, 1930 (Mrs. C. S. H.) to May 7, 1927 (W. R.); Aug. 9, 1933 (L. S. K.); Sept. 21, 1928 (W. R.) to Nov. 6, 1927 (Mrs. C. S. H.).

H—April 22, 1917 (E. S. M.); Oct. 12, 1872 (collected by Herrick) to Oct. 14, 1933.

Eastern Hairy Woodpecker (*Dryobates villosus villosus*)

Resident.

E—Rare permanent resident except in east of county. Present in Branch Brook Park, Jan. 15, 1928 (R. F. H.); June 18, 1927, young seen (E.S.).

H—Arlington, three records by Marks: Jan. 1, 1918; March 18, 1925; April 4, 1924. Westside Park, Oct. 24, 1909 (L. S. K.).

Northern Downy Woodpecker (*Dryobates pubescens medianus*)

Resident.

E—Common permanent resident, more often seen in winter. Nest and eggs, May 19, 1928 (W. R.).

H—Permanent resident to 1919 (E. S. M.); no longer breeds; winters, Sept. 30, 1934 to February.

Red-cockaded Woodpecker (*Dryobates borealis*)

H—Specimen taken in Hoboken (in collection of G. N. Lawrence) some time before 1866 (Stone, p. 180).

Arctic Three-toed Woodpecker (*Picoides arcticus*)

E—One bird, Upper Montclair, Feb. 10 and 11, 1926 (R. H. H.).

Eastern Kingbird (*Tyrannus tyrannus*)

Summer resident.

E—Uncommon and rarer than formerly; May 1, 1927 to Sept. 25, 1919 (Mrs. C. S. H.). Nest and eggs, May 28, 1927 (W. R.).

H—Still breeds in county; Arlington to 1928 (E. S. M.); May 9, 1915 (E. S. M.) to Aug. 8, 1931 (J. L. E. and C. A. U.).

Northern Crested Flycatcher (*Myiarchus crinitus boreus*)

Summer resident.

E—Common, formerly (1873, Trippe) rare; April 29, 1927 (R. F. H.) to Sept. 13, 1924 (Montclair Bird Club). Nest and eggs, June 2, 1927 (W. R.).

H—Formerly bred, Arlington (O. P. M.), June 15, 1913, Secaucus (L. S. K.) to May 20, 1916 (E. S. M.) and May 27, 1934.

Eastern Phoebe (*Sayornis phoebe*)

Summer resident.

E—Common transient; uncommon summer resident; once in winter, Feb. 9, 1929 (W. R.). March 2, 1930 (W. R.) and 1935 (E. S.) to Oct. 15, 1933. Nest and eggs, April 14, 1928 (W. R.) to July 8, 1932 (E. S.).

H—Formerly bred, Arlington, 1920 (E. S. M.); March 11, 1929 to Oct. 24, 1909 (L. S. K.).

Yellow-bellied Flycatcher (*Empidonax flaviventris*)

Uncommon spring and fall migrant.

E—May 16, 1914 (Mrs. C. S. H.) to June 11, 1934 (L. S. K.); Sept. 8, 1910 (L. S. K.).

H—May 23, 1920 (E. S. M.).

Acadian Flycatcher (*Empidonax virescens*)

Now accidental visitant.

E—Once undoubtedly a rare summer resident; Orange, May 30, 1896 (collected by Herrick). Only a few recent records of value, as most sight records are not satisfactory; June 8 and July 1, 1934, heard and seen (L. S. K.); Montclair, Sept. 1, 1932 (W. R.) to Sept. 10, 1898. (Specimen taken in West Orange, in Dwight coll., Urner, Birds of Union Co.) Nest with 1 young and 1 added egg, Bloomfield, July 4, 1871 (H. Herrick).

Alder Flycatcher (*Empidonax trailli trailli*)

E—Rare summer resident; May 11, 1929 (W. R.) to July 20, 1930. Completed nest, no eggs on June 12, 1932 (later destroyed); June 21, 1934, three nests with eggs, and July 12, 1934, with young (L. S. K.).

H—May 9, 1932 (L. S. K.) to May 30, 1913 (E. S. M.) (sight records only); Sept. 8, 1890 and Sept. 26, 1889 (Dwight coll. from Statue of Liberty, Griscom, "Birds of New York City Region").

Least Flycatcher (*Empidonax minimus*)

E—Uncommon summer resident, formerly more numerous; April 27, 1930 to Sept. 23, 1928. Nest and eggs, June 10, 1927 (W. R.).

H—Arlington, May 14, 1927 (E. S. M.) to May 21, 1925 (E. S. M.) and July 26, 1931.

Eastern Wood Pewee (*Myiochanes virens*)

E—Common, May 6, 1922 (Mrs. C. S. H.) to Oct. 4, 1931.

H—Formerly bred, Arlington (O. P. M.); May 21, 1911 (L. S. K.) to Sept. 17, 1933.

Olive-sided Flyatcher (*Nuttallornis mesoleucus*)

Rare spring and fall migrant.

E—May 10, 1928 (W. R.) to June 6, 1928 (E. S.) and Aug. 25, 1910 (R. H. H.).

Northern Horned Lark (*Otocoris alpestris alpestris*)

Winter visitant.

E—Common at Port Newark, rare elsewhere; Oct. 18, 1931 to March 17, 1929.

H—Winters; Oct. 22, 1933 (J. L. E.) to March 12, 1935 (L. S. K.).

Prairie Horned Lark (*Otocoris alpestris praticola*)

E—Only two positive records before 1934: with Horned Lark at Port Newark, Feb. 8, 1930 (R. F. H.); one bird with Horned Larks in Orange Reservation, Feb. 23, 1920 (C. A. U.); Feb. 19, 1935 (Mrs. Fry and L. S. K.); migrating flock, Bloomfield, March 4, 1934; recorded twice in June at Newark Airport, June, 1934 (C. A. U. and Gerbert Rebell).

Tree Swallow (*Iridoprocne bicolor*)

Abundant transient.

E—A rare summer resident in Caldwell area only; March 15, 1926 (W. R.) to June 10, 1912 and scattered individuals to July (L. S. K.); migrants, July 9, 1932 to Nov. 6, 1928. Nest, May 17, 1927 (W. R.).

H—Frequently common in June, but no nesting data (E. S. M.). Roosts commonly in marshes (F. M. Chapman); March 18, 1905 to June 15, 1913 (E. S. M.), July 4, 1914 (E. S. M.) to Dec. 24, 1919 (R. C. Caskey, *Bird-Lore*, 1920, p. 28).

Bank Swallow (*Riparia riparia riparia*)

Rare transient.

E—Formerly a rare summer resident in Montclair and Caldwell areas; now only a transient in the county; April 21, 1922 (Barbour) to Sept. 9, 1928 (J. L. E.). Nest and 5 eggs, June 14, 1926 (W. R.) in Peckman Valley.

H—May 10, 1934 (L. S. K.); Aug. 9, 1913 (L. S. K.) to Aug. 30, 1931 (J. L. E.).

Rough-winged Swallow (*Stelgidopteryx ruficollis serripennis*)

Very rare summer resident.

E—Local summer resident, formerly more common; not common as transient; April 8, 1933 to July 31, 1927 (J. L. E.). Nest, May 7, 1932, Two Bridges.

H—Possibly once bred, Arlington, but no proof (E. S. M.). Nesting in old iron works, Secaucus, 1933 and 1934 (L. S. K.); May 10, 1934 (L. S. K.) to Aug. 9, 1913 (L. S. K.).

Barn Swallow (*Hirundo erythrogaster*)
Summer resident.

E—April 10, 1926 (Mrs. C. S. H.) to Oct. 22, 1927 (Crowell); less common than formerly. Nest, May 4, 1928 (W. R.).

H—Formerly bred, to 1919 (E. S. M.); April 26, 1916 (E. S. M.) to Oct. 14, 1928 (E. S. M.).

Northern Cliff Swallow (*Petrochelidon albifrons albifrons*)
Rare transient.

E—Formerly bred, to 1929, at Caldwell; April 15, 1930 (W. R.) to Aug. 24, 1930. Nests, May 10, 1929 (W. R.).

H—Former transient, may have once bred (O. P. M.); June 10, 1933, Secaucus, nesting in old iron works (L. S. K.); April 26, 1916 (E. S. M.); July 20, 1917 (E. S. M.) to Aug. 26, 1921 (E. S. M.).

Purple Martin (*Progne subis subis*)

E—Now rare transient; formerly bred, to 1905, Montclair (R. H. H.); May 12, 1913, Bloomfield (L. S. K.) to Aug. 29, 1912, Newark meadows (L. S. K.).

Northern Blue Jay (*Cyanocitta cristata cristata*)
Permanent resident.

E—Very common breeder; sometimes abundant in migration. Nest and eggs, May 13, 1927 (E. S.); Port Newark, migrant, Sept. 24, 1933.

H—Common transient. Rare permanent resident; more common than formerly (O. P. M.).

Eastern Crow (*Corvus brachyrhynchos brachyrhynchos*)
Resident.

E—Very common summer resident west of first mountain; less common to the east; abundant migrant in great flights in spring; regular but less common than formerly in winter. Nest and 2 eggs, March 3, 1928 (E. S.).

H—Permanent resident, less common than formerly (Paulson). Bred to 1919 at Arlington; migrants, most common March and October (E. S. M.).

Fish Crow (*Corvus ossifragus*)
Summer resident and migrant.

E—Rare at all seasons but more often found as migrant. Very rare summer resident; formerly regular at Brookdale. No winter records; Feb. 12, 1927 (E. S.) to Aug. 12, 1911 (L. S. K.). Has nested at Port Newark (C. A. U.).

H—Uncommon, formerly bred along Passaic River at Arlington (O. P. M.); March 12, 1935 to Nov. 20, 1934 (L. S. K.); still breeds at Secaucus.

Black-capped Chickadee (*Penthestes atricapillus atricapillus*)
Permanent resident.

E—Uncommon in summer; common migrant and abundant winter resident. Nest, April 20, 1903 (L. S. K.); nest and eggs, April 21, 1928 (E. S.).

H—Formerly bred; winters; Sept. 30, 1934 to Jan. 25, 1922 (E. S. M.).

Carolina Chickadee (*Penthestes carolinensis carolinensis*)

E—Mr. R. F. Haulenbeek is confident of 2 sight records in Branch Brook Park, March 16, 1928 and March 28, 1933. (No collected specimens as yet north of Raritan, however).

Tufted Titmouse (*Baeolophus bicolor*)

Permanent resident.

E—Rare and local resident east of first mountain; more often seen in winter; common to abundant locally, west; unusually common winter 1934-1935. Nest, May 13, 1928 (W. R.).

H—Formerly found to 1917 (O. P. M.); Arlington, March 3, 1935; Oct. 18, 1914 (L. S. K.) to April 4, 1916 (E. S. M.).

White-breasted Nuthatch (*Sitta carolinensis carolinensis*)

Permanent resident.

E—Common permanent resident. Nest, April 15, 1928 (E. S.).

H—Former permanent resident, recently bred (E. S. M.); winter visitant; Oct. 22, 1933 to spring.

Red-breasted Nuthatch (*Sitta canadensis*)

E—Irregular migrant and winter visitant; Aug. 28, 1896 (W. E. D. Scott) to May 30, 1924 (J. L. E.).

H—Migrant; Oct. 12, 1911 (E. S. M.) to Dec. 6, 1912 (L. S. K.); May 16, 1928 (E. S. M.)

Brown Creeper (*Certhia familiaris americana*)

E—Common migrant, uncommon in winter; Sept. 28, 1930 to May 4, 1924 (M. B. C.).

H—Winter visitant and migrant; Oct. 11, 1914 (E. S. M.) to April 29, 1916 (E. S. M.).

Eastern House Wren (*Troglodytes aedon aedon*)

E—Very common summer resident, probably more so than formerly; April 18, 1922 (R. H. H.) and 1931 to Oct. 14, 1923 (R. H. H.). Two winter records at Brookdale, Jan. 3, 1931 (R. C.), and Hatfield, March 2, 1935 (E. S.). Nest, May 4, 1929 (W. R.).

H—Very rare summer resident; formerly North Bergen; still at North Hudson Park, in 1932 and Secaucus, 1935; Westside Park, May 21, 1911 (L. S. K.).

Eastern Winter Wren (*Nannus hiemalis hiemalis*)

E—Common migrant; not rare in winter; Sept. 18, 1932 (R. C.) to April 23, 1929.

H—Oct. 29, 1913, Westside Park (L. S. K.) to Feb. 28, 1913 (E. S. M.).

Carolina Wren (*Thryothorus ludovicianus ludovicianus*)

Rare and irregular.

E—Very irregular permanent resident; may be seen at any time; breeds rarely if ever. Temporarily killed off by winters 1917-18 and 1933-34. Only record in 1934, Nov. 13 (W. R.) at Caldwell.

H—Formerly bred on Snake Hill, to 1917 (O. P. M.); formerly at Arlington, to June 28, 1919 (E. S. M.).

Long-Billed Marsh Wren (*Telmatodytes palustris palustris*)

E—Locally common summer resident; May 1, 1928 (E. S.) to Oct. 7, 1928 (J. L. E.). Nest, May 15, 1929 (W. R.).. Nests and eggs, May 22-30, 1912 (L. S. K.).

H—Common summer resident on meadows; April 27, 1932 (E. S. M.) to Aug. 19, 1899 (W. de W. Miller). Nest and eggs, June 26, 1932; 55 nests, June 21, 1912 (L. S. K.) and 4 nests, June 18, 1910 (L. S. K.); June 12, 1869, 3 nests, 2 with 4, 1 with 3 eggs (H. Herrick), to July 7, 1935, nest with 4 eggs (R. T. Peterson).

Short-billed Marsh Wren (*Cistothorus stellaris*)

E—Very rare and local summer resident in Caldwell area; May 2, 1913 (L. S. K.) to Oct. 21, 1934. Nest, May 19, 1929 (W. R.).

Eastern Mockingbird (*Mimus polyglottos polyglottos*)

E—Irregular at all seasons; more often recorded in December, January and February. Nest and pair at Verona, April, 1932 (Miss Hornfeck); recorded 1930, 1932 and 1933 (by M. B. C.) and Feb., 1935 (Miss Hornfeck).

H—March 3, 1935, one seen, Hudson County Park, Bayonne.

Catbird (*Dumetella carolinensis*)

Summer resident; rare in winter.

E—Very common; April 21, 1929 (W. R.) to Nov. 1, 1931. In winter, Feb. 17 to 23, 1931, and Feb. 11, 1933 (Mrs. Geo. Taylor and others), Montclair. Nest, May 15, 1928 (E. S.).

H—Uncommon summer resident; April 30, 1918 (E. S. M.) to Sept. 30, 1934, and Jan. 10, 1918 (E. S. M.).

Brown Thrasher (*Toxostoma rufum*)

Summer resident; rare in winter.

E—Common summer resident; more often recorded in winter than preceding; April 9, 1929 to Dec. 12, 1929 (Mrs. Alice M. Cox). Winter of 1922-23 (Montclair Bird Club). One record, Jan., 1931 (P. S. Howe), Short Hills, and Jan. 8, 1930 (Mrs. Alice M. Cox), Montclair. Nest and eggs, May 20, 1934.

H—Summer resident at Arlington to 1928 (E. S. M.); April 26, 1916 (E. S. M.) to Dec. 7, 1917 (E. S. M.).

Eastern Robin (*Turdus migratorius migratorius*)

Permanent resident.

E—Very abundant summer resident; not common but regular in winter. Nests April 6, 1929 (W. R.) to July 22, 1933.

H—Permanent resident; common in summer, less common in winter; arrival, March 3, 1935, Hudson County Park, Bayonne. Nest, 2 young, 1 egg, April 24, 1921, Arlington (E. S. M.) to May 29, 1869; nest and 4 eggs, Weehawken (H. Herrick).

Northern Varied Thrush (*Ixoreus naevius meruloides*)

H—One taken at Hoboken, Dec., 1851, by G. N. Lawrence (Stone, p. 315).

Wood Thrush (*Hylocichla mustelina*)

E—Very common; April 21, 1929 (W. R.) to Oct. 20, 1924 (Mrs. L. E. W. Abbot). Nest and eggs, May 16, 1926 (W. R.) to July 4, 1871 (H. Herrick).

H—Formerly summer resident at Arlington to 1931 (O. P. M.); May 6, 1920 (E. S. M.) to fall; May 18, 1905. Nest and 4 eggs, Arlington (L. S. K.) to May 29, 1870, nest and 4 eggs, Weehawken (H. Herrick).

Eastern Hermit Thrush (*Hylocichla guttata faxoni*)

Transient and winter resident.

E—Abundant migrant; less common but regular in winter; Aug. 26, 1896 (W. E. D. Scott) to May 1, 1912 (L. S. K.).

H—Common migrant; Sept. 20, 1914 (E. S. M.) to Nov. 11, 1927 (E. S. M.); March 20, 1921 (E. S. M.) to May 17, 1916 (E. S. M.).

Olive-backed Thrush (*Hylocichla ustulata swainsoni*)

Common transient.

E—May 4, 1924 (R. F. H.) to May 31, 1924 (M. B. C.); Aug. 31, 1932 (W. R.) to Oct. 20, 1896 (W. E. D. Scott).

H—May 11, 1927 (E. S. M.) to May 28, 1931.

Gray-cheeked Thrush (*Hylocichla minima aliciae*)

Common transient.

E—May 8, 1927 (J. L. E.) to June 1, 1930 (Mrs. C. S. H.); Sept. 13, 1924 (M. B. C.) to Oct. 20, 1896 (W. E. D. Scott).

H—May 18, 1913 (L. S. K.) to May 28, 1931; no fall data.

Bicknell's Thrush (*Hylocichla minima minima*)

Migrant.

E—Probably more common than records indicate as little collecting is done; May 10, 1934 (R. F. H.), small size compared closely with Olive-back; one banded, May 24, 1923 (R. H. H.); Sept. 29 to Oct. 15, 1896, six (collected by W. E. D. Scott, see *Auk* XLV, No. 2, p. 225); also Oct. 10, 1915 (C. B. Isham).

Veery (*Hylocichla fuscescens fuscescens*)

Summer resident and transient.

E—Uncommon and local; April 28, 1929 to Oct. 18, 1929 (Mrs. C. S. H.). Nest and eggs, May 28, 1927 (E. S.).

H—Formerly bred at Arlington; still at Secaucus, 1935; April 26, 1916 (E. S. M.) to May 28, 1927 (E. S. M.); Oct. 10, 1915 (E. S. M.); May 26, 1869 and May 29, 1870, nest and 3 eggs, Weehawken (H. Herrick).

Eastern Bluebird (*Sialia sialis sialis*)

Permanent resident.

E—Resident; common in migration; now rare but formerly common breeder; not common in winter. Nest and 3 two-day old young, April 8, 1906 (L. S. K.) to May 2, 1928, nest and eggs (E.S.).

H—Formerly bred, North Bergen and Arlington, to 1913 (E. S. M.); winter, 1914, 1915 and 1927; March 11, 1905 (E. S. M.) to Aug. 9, 1913 (E. S. M.).

Blue-gray Gnatcatcher (*Polioptila caerulea caerulea*)

E—Four records, chiefly in Branch Brook Park; April 11, 1928 (R. F. H.); Aug. 21, 1934 (Rebell, *Bird-Lore,* 1934, p. 370); Sept. 25, 1925 (Loomis); also reported by Mrs. M. L. Cox.

Eastern Golden-crowned Kinglet (*Regulus satrapa satrapa*)

E—Common transient and less common winter resident; Sept. 25, 1932 to May 11, 1929 (W. R.).

H—Transient; less common in winter; Oct. 19, 1915 (E. S. M.) to April 27, 1922 (E. S. M.).

Eastern Ruby-crowned Kinglet (*Corthylio calendula calendula*)

Common, sometimes abundant, transient.

E—Sept. 15, 1930 (Mrs. C. S. H.) to May 11, 1929 (W. R.); three winter records in Caldwell area, 1928 and 1929; one in Montclair, 1924.

H—Migrant; Oct. 24, 1909 (L. S. K.); March 19 to May 6, 1905 (E. S. M.).

American Pipit (*Anthus spinoletta rubescens*)

Common transient, especially on the meadows.

E—Rare in winter; Sept. 18, 1932 to Dec. 23, 1928; winter; March 14, 1931 (F. W.) to May 8, 1927.

H—An abundant transient, rare in winter (1932); Oct. 2, 1930 to Oct. 29, 1872 (H. Herrick); March 17, 1900 (W. de W. Miller).

Cedar Waxwing (*Bombycilla cedrorum*)

Common resident.

E—Uncommon summer resident and irregular permanent resident, at times quite abundant as migrant. Nest in May, 1904, at Bloomfield (L. S. K.).

H—Formerly bred (O. P. M.) to 1907 (E. S. M.); April 21, 1925 (E. S. M.) to Nov. 14, 1908 (L. S. K.); winter, Jersey City (O. P. M.).

Northern Shrike (*Lanius borealis borealis*)

Irregular winter visitant.

E—Nov. 11, 1930 to Feb. 20, 1906 (R. H. H.).

H—Jan. 2, 1922 (E. S. M.) and Nov. 12, 1913, Kearney (L. S. K.).

Migrant Shrike (*Lanius ludovicianus migrans*)

Accidental visitant.

E—Rare; Aug. 23, 1911 (L. S. K.) and Aug. 26, 1933, at Montclair Heights (L. S. K. and W. F. E.).

H—One record: Aug. 25, 1911, Westside Park, Jersey City (L. S. K.).

Starling (*Sturnus vulgaris*)

Abundant resident

E—Very abundant; most numerous in flocks in late summer, fall and winter. Nest, March 24, 1929. Arrived Bloomfield, spring 1903 (L. S. K.); first seen Montclair, Oct. 25, 1904 (R. H. H.).

H—Now abundant permanent resident; first recorded at Greenville, Jersey City, Jan. 13, 1900. Probably bred there, June 3, 1901 (W. de W. Miller). First recorded, Arlington, Nov. 25, 1905 (E. S. M.).

White-eyed Vireo (*Vireo griseus griseus*)
Summer resident.

E—Very rare and local; April 29, 1929 (W. R.) to Sept. 25, 1932 (J. L. E.). Nest and 4 eggs at Orange, July 5, 1877 (collected by H. Herrick).

H—Formerly rather common breeder (O. P. M.); May 1, 1928 (E. S. M.) to Sept. 19, 1914 (E. S. M.).

Yellow-throated Vireo (*Vireo flavifrons*)

E—Uncommon; formerly more frequent. May 5, 1929 to Sept. 13, 1924 (Montclair Bird Club). Nest and eggs, June 9, 1928 (E. S.).

H—Formerly bred (O. P. M.). Nest and eggs in maple at Kearney, May 21, 1905 (L. S. K.) to Aug. 9, 1913 (L. S. K.).

Solitary vireo (*Vireo solitarius solitarius*)
Common transient.

E—One nest record for South Orange (A. R. Dugmore, *Bird-Homes,* p. 119; pub. 1900); April 13, 1923 (R. F. H.) to May 20, 1934; Sept. 18, 1932 (R. C.) to Oct. 22, 1916 (C. H. Rogers).

H—April 27, 1922 (E. S. M.) to May 18, 1907 (E. S. M.); Oct. 14, 1928 (E. S. M.) to Oct. 29, 1921, Arlington (E. S. M.).

Red-eyed Vireo (*Vireo olivaceus*)
Summer resident.

E—Very common; April 30, 1930 (W. R.) to Oct. 10, 1926. Nest and eggs, May 26, 1910 (L. S. K.) to July 4, 1871, with 1 Cowbird egg (H. Herrick).

H—Summer resident (1932). Formerly bred at Arlington to 1919 (E. S. M.); May 9, 1915 (E. S. M.) to Aug. 23, 1919 (E. S. M.).

Eastern Warbling Vireo (*Vireo gilvus gilvus*)
Summer resident.

E—Uncommon and local; April 29, 1927 (R. F. H.) to Sept. 13, 1924 (Montclair Bird Club). Nest, June 3, 1926 (W. R.).

H—Formerly rare breeder (O. P. M.); May 21, 1911, Westside Park (L. S. K.).

Black and White Warbler (*Mniotilta varia*)
Summer resident and transient.

E—Rare summer resident in western part of county; April 18, 1933 (F. W.) to Sept. 28, 1930. Nest and eggs, May 23, 1926 (W. R.).

H—Formerly bred, to 1919 (E. S. M.); April 29, 1916 (E. S. M.) to Oct. 10, 1915 (E. S. M.).

Prothonotary Warbler (*Protonotaria citrea*)

E—Very rare spring migrant. One breeding record a few feet over line in Morris County (Quattlebaum); May 2, 1928 (R. F. H.) to June 6, 1925 (J. L. E.).

Worm-eating Warbler (*Helmitheros vermivorus*)

Summer resident and transient.

E—Uncommon summer resident on ridges; May 4, 1930 (J. Q. Adams) to Aug. 25, 1924 (Miss L. Morris). Nest, June 17, 1927 (W. R.).

H—Migrant, May 4, 1927 (E. S. M.).

Golden-winged Warbler (*Vermivora chrysoptera*)

E—Uncommon migrant; rare breeder, Cedar Grove and Caldwell; May 2, 1935 (L. S. K.) to May 31, 1924 (Montclair Bird Club); June 13, 1934 (L. S. K.). Nest and young, July 4, 1933 (L. S. K.); Aug. 25, 1924 (Mrs. C. S. H.) to Sept. 28, 1929 (W. R.).

H—Reported as migrant (O. P. M.); no record (E. S. M.).

Brewster's Warbler (*Vermivora leucobronchialis*)

E—Very rare migrant; May 11, 1883, Orange (C. B. Riker, *Auk*, 1885, p. 378).

Lawrence's Warbler (*Vermivora lawrencei*)

E—Very rare migrant; May 20, 1928 (J. L. E.).

H—One record, Hoboken, Sept., 1876 (D. B. Dickinson, Stone, p. 270).

Blue-winged Warbler (*Vermivora pinus*)

Summer resident.

E—Common; April 25, 1921 (R. F. H.) to Sept. 23, 1928. Nest and egg, May 23, 1926 (W. R.).

H—Transient; formerly bred, 1907 (E. S. M.); May 1, 1920 (E. S. M.) to May 28, 1927 (E. S. M.).

Tennessee Warbler (*Vermivora peregrina*)

Transient.

E—Rare; fairly common some years as in fall of 1910 (R. H. H.); May 13, 1928 (E. S.) to June 1, 1924 (R. F. H.); Sept. 30, 1934 to Oct. 9, 1932.

Orange-crowned Warbler (*Vermivora celata celata*)

E—Four records only; April 14, 1898 (S. Van Rensselaer, Griscom, p. 319); May 19, 1927 (Griscom); Oct. 2, 1894 (S. Van Rensselaer, Griscom, p. 319); Dec. 25 and 26, 1920 (R. F. H., *Bird-Lore*, 1921, p. 14).

H—Hoboken, May, 1865 (C. S. Galbraith collection, Griscom, p. 319).

Nashville Warbler (*Vermivora ruficapilla ruficapilla*)

Not common migrant.

E—April 28, 1935 to May 29, 1932 and June 11, 1932, a singing male; Sept. 30, 1930 (Mrs. C. S. H.) to Oct. 9, 1932; a probable migrant, July 23, 1933.

H—Reported (O. P. M.); no record (E. S. M.).

Northern Parula Warbler (*Compsothlypis americana pusilla*)

Common transient.

E—April 23, 1916 (C. H. Rogers) to May 23, 1932; Sept. 28, 1930 to Oct. 14, 1896 (W. E. D. Scott).

H—May 1, 1920 (E. S. M.) to May 30, 1913 (E. S. M.); Sept. 20, 1914 (E. S. M.) to Oct. 1, 1914 (L. S. K.).

Eastern Yellow Warbler (*Dendroica aestiva aestiva*)
Summer resident.

E—Common; April 27, 1921 (R. F. H.) to Oct. 12, 1923 (Montclair Bird Club). Nest and eggs, May 10, 1911 (L. S. K.) to May 30, 1907 (L. S. K.).

H—Summer resident; formerly more common; formerly bred at Arlington (Paulson); to 1920 (E. S. M.); May 1, 1920 (E. S. M.) to fall. Nest with 2 eggs at Weehawken, May 26, 1869 (H. Herrick).

Magnolia Warbler (*Dendroica magnolia*)
Common transient.

E—May 2, 1920 (R. F. H.) to May 31, 1924 (Montclair Bird Club); Aug. 30, 1932 (W. R.) to Sept. 28, 1930.

H—May 1, 1920 (E. S. M.) to May 16, 1928 (E. S. M.); Aug. 26, 1925 (E. S. M.) to Oct. 1, 1914 (L. S. K.).

Cape May Warbler (*Dendroica tigrina*)
Rare transient; probably more common in fall than spring.

E—May 7, 1924 (Mrs. C. S. H.) to May 20, 1926 (Mrs. L. E. W. Abbot); Aug. 31, 1932 (W. R.) to Oct. 6, 1929 (R. F. H.).

H—Reported (O. P. M.); no record (E. S. M.).

Black-throated Blue Warbler (*Dendroica caerulescens caerulescens*)
Common transient.

E—April 29, 1929 (W. R.) to May 20, 1934; Oct. 1, 1928 to Oct. 16, 1896 (W. E. D. Scott).

H—May 7, 1927 (E. S. M.) to May 21, 1911 (L. S. K.); Sept. 14, 1924 (E. S. M.).

Myrtle Warbler (*Dendroica coronata*)
Abundant transient.

E—Usually regular, although not common in winter; Sept. 29, 1931 to May 16, 1931.

H—Migrant; April 4, 1924 (E. S. M.) to May 27, 1920 (E. S. M.); Oct. 1, 1914 (L. S. K.) to Dec. 3, 1917 (E. S. M.).

Black-throated Green Warbler (*Dendroica virens virens*)
Common transient.

E—Formerly probably rare breeder in Orange Reservation, 1928 (Urner Birds of Union County); April 23, 1927 (J. L. E.) and 1929 (R. F. H.) to May 30, 1931, and June 9, 1935; July 25, 1934 (L. S. K.); Sept. 18, 1932 (R. C.) to Oct. 12, 1923 (Montclair Bird Club).

H—May 1 to 27, 1920 (E. S. M.); Aug. 30, 1927 to Oct. 12, 1925 (E. S. M.).

Blackburnian Warbler (*Dendroica fusca*)
Common transient in spring; rare in fall.

E—April 19, 1929 (F. W.); April 23, 1927 (R. F. H.) to May 25, 1929 (W. R.); Aug. 30, 1932 (W. R.) to Sept. 15, 1923 (Mrs. C. S. H.).

H—May 11 to 22, 1927 (E. S. M.).

Yellow-throated Warbler (*Dendroica dominica dominica*)
Rare in spring.

E—Two records; May 1, 1928, Newark (J. H. Burnett and E. G. Loomis). May 15, 1928, Orange Reservation (C. A. U.).

Chestnut-sided Warbler (*Dendroica pensylvanica*)
Common summer resident.

E—April 27, 1935 to September. Partly completed nest, May 10, 1912 (L. S. K.); nest, May 21, 1927 (E. S.).

H—Migrant; formerly bred (O. P. M.); May 1, 1920 (E. S. M.) to May 17, 1916 (E. S. M.).

Bay-breasted Warbler (*Dendroica castanea*)
Transient.

E—Not common, but abundant for three days in 1916 (Mrs. C. S. H.); May 1, 1920 (F. W.) to May 29, 1927 (Montclair Bird Club); Aug. 21, 1896 (W. E. D. Scott) to Aug. 25, 1928 (Mrs. C. S. H.).

H—May 14, 1916 (E. S. M.) and May 17, 1920 (E. S. M.).

Black-poll Warbler (*Dendroica striata*)
Transient.

E—Abundant; May 4, 1930 (W. R.) to June 7, 1934 (L. S. K.); July 11, 1930 (R. H. H.) a singing bird; Aug. 31, 1932 (W. R.) to Nov. 5, 1932.

H—Common; May 8, 1921 (E. S. M.) to June 3, 1932; September and early October (O. P. M.).

Northern Pine Warbler (*Dendroica pinus pinus*)
Uncommon migrant.

E—April 2, 1933 to May 6, 1927 (W. R.); Sept. 29, 1896 (W. E. D. Scott).

H—Reported (O. P. M.); no record (E. S. M.); May 11, 1910, Kearney (L. S. K.).

Northern Prairie Warbler (*Dendroica discolor discolor*)
Not uncommon migrant.

E—Regular; April 27, 1935 to May 24, 1927 (E. S.); Aug. 27, 1933 to Oct. 8, 1932.

H—May 8, 1921 (E. S. M.); May 14, 1922 (O. P. M.) to May 28, 1927 (E. S. M.).

Western Palm Warbler (*Dendroica palmarum palmarum*)
Rare in spring; often abundant in fall.

E—April 23, 1926 (W. R.) to May 11, 1929 (W. R.); Sept. 10, 1923 (Mrs. C. S. H.) to Nov. 2, 1930.

H—Sept. 30, 1934 to Oct. 22, 1921 (E. S. M.).

Yellow Palm Warbler (*Dendroica palmarum hypochrysea*)
Common transient.

E—April 5, 1921 (R. F. H.) to May 8, 1927 (E. S.); Oct. 7, 1928 to Nov. 10, 1928.

H—April 16, 1925 (E. S. M.) to May 12, 1917 (E. S. M.); Sept. 14, 1924 (E. S. M.) to Oct. 30, 1932.

Ovenbird (*Seiurus aurocapillus*)

Summer resident.

E—Very common on trap rock ridges; April 27, 1925 (Loomis) to Nov. 20, 1924 (Mrs. C. S. H.). Completed nest, May 11, 1913 (L. S. K.).

H—Formerly bred (O. P. M.); to June 2, 1912, nest at Arlington (L. S. K.); now migrant; May 1, 1920 (E. S. M.) to May 31, 1925 (E. S. M.); Aug. 23, 1919 (E. S. M.).

Northern Water-Thrush (*Seiurus noveboracensis noveboracensis*)

Common transient.

E—April 27, 1929 (R. F. H.) to May 30, 1929; Aug. 2, 1930 to Sept. 29, 1929 (W. R.).

H—May 11, 1922 (E. S. M.) and May 12, 1920 (E. S. M.); Aug. 13, 1933, Secaucus.

Louisiana Water-Thrush (*Seiurus motacilla*)

Summer resident.

E—Very rare; April 7, 1929 (Montclair Bird Club) to Sept. 23, 1928. Nest and eggs, May 1, 1927 (W. R.).

H—Migrant (O. P. M.); July 21, 1912, Westside Park (L. S. K.).

Kentucky Warbler (*Oporornis formosus*)

E—Only six records, all in spring; May 8, 1911 (R. H. H.) to May 30, 1935.

Connecticut Warbler (*Oporornis agilis*)

Rare migrant in spring; more common in fall.

E—May 11, 1920 (R. F. H.); Aug. 26, 1896 (W. E. D. Scott) to Sept. 28, 1929 (W. R.).

H—Aug. 26, 1933, Homestead (L. S. K.).

Mourning Warbler (*Oporornis philadelphia*)

Uncommon migrant in spring. No records in fall.

E—May 11, 1929 (W. R.) to June 4, 1934 (D. Wilson).

H—Recorded (O. P. M.).

Northern Yellow-Throat (*Geothlypis trichas brachidactyla*)

Very common summer resident and transient.

E—Lingers until early winter on occasion; April 26, 1928 (R. F. H.) to Nov. 24, 1927 (J. L. E.). Nest and eggs, May 15, 1927 (W. R.).

H—Common breeder; May 11, 1916 (E. S. M.) to Sept. 30, 1934.

Yellow-breasted Chat (*Icteria virens virens*)

Summer resident.

E—Rare and local; less common than formerly; April 30, 1922 (R. F. H.) to July. Nest, June 15, 1926 (W. R.).

H—Formerly a common breeder (O. P. M.); to 1920 (E. S. M.). Nest and eggs at Homestead, June 18, 1915 (L. S. K.); May 21, 1911 (L. S. K.) to Aug. 23, 1919 (E. S. M.).

Hooded Warbler (*Wilsonia citrina*)

Uncommon and local summer resident.

E—Probably more common than formerly; May 2, 1928 (Mrs. C. S. H.) to Sept. 28, 1929 (W. R.). Nest and young, June 25, 1933 (W. R.).

H—May 11 and 14, 1927 (E. S. M.); June 30, 1914, Westside Park (L. S. K.). Probably formerly bred as H. Herrick records nest at Fort Lee, June 3, 1872.

Wilson's Warbler (*Wilsonia pusilla pusilla*)

Transient.

E—Not common; May 10, 1922 (Miss L. Morris) to June 7, 1934 (L. S. K.); Aug. 27, 1933 to Sept. 23, 1928.

H—May 20, 1922 (E. S. M.).

Canada Warbler (*Wilsonia canadensis*)

Common transient.

E—May 6, 1928 (R. F. H.) to May 30, 1929; Aug. 2, 1934 (L. S. K.) to Oct. 2, 1926 (W. R.).

H—May 11, 1927 (E. S. M.) to May 28, 1931; Sept. 10, 1935 (Fr. E. Goellner).

Redstart (*Setophaga ruticilla*)

Uncommon summer resident on trap rock ridges.

E—Migrants; April 29, 1920 to June 3, 1927 (R. F. H.). Nest, May 20, 1908 (L. S. K.) to June 11, 1927; nest and eggs (W. R.). Fall migrants, Sept. 2, 1928 to Oct. 13, 1896 (W. E. D. Scott).

H—Formerly bred, to 1928, at Arlington (E. S. M.). Nest and 4 eggs, June 4, 1911 (L. S. K.); May 11, 1927 (E. S. M.) to Oct. 10, 1915 (E. S. M.).

House Sparrow (*Passer domesticus domesticus*)

Very abundant resident.

E—First recorded at Chatham about 1868 (Dickinson); first recorded, Caldwell, 1870; East Orange, 1874 or earlier (H. B. Bailey). (See "The English Sparrow in North America" by C. H. Merriam, 1889.) Perhaps less common than formerly, but now more generally distributed. Nests chiefly April, May and June. First nest of record, May, 1874, Orange (H. Herrick).

H—Most abundant breeder and permanent resident.

Bobolink (*Dolichonyx oryzivorus*)

Common transient and local summer resident.

E—Formerly abundant breeder (Trippet); now rare. Nest and eggs, June 9, 1928 (E. S.); May 6, 1928 (R. F. H.) to Sept. 13, 1931.

H—May 7, 1921 (E. S. M.) to Sept. 17, 1933. Formerly regular breeder on meadows, to 1920 (E. S. M.); May still breed, 1930 (O. P. M.); migrants appear early in July.

Eastern Meadowlark (*Sturnella magna magna*)

Resident.

E—Locally common summer resident; formerly abundant where now absent

(Trippet); abundant at Port Newark as a permanent resident. Migrants, March 10, 1929 to Dec. 15, 1931 (L. S. K.). Nest and eggs, May 11, 1927 (W. R.).

H—Permanent resident near Snake Hill; otherwise less common than formerly; Arlington, bred to 1919; March 26, 1916 (E. S. M.) to Jan. 1, 1915 (E. S. M.); winter.

Eastern Red-Wing (*Agelaius phoeniceus phoeniceus*)

Common summer resident; locally abundant; rare in winter; abundant migrant.

E—March 1, 1930 (F. W.) to Jan. 5, 1932 (L. S. K.). Nest and eggs, May 17, 1927 (E. S.).

H—Regular breeder; common migrant; rare in winter; Jan. 6, 1923 (E. S. M.) and Jan. 10, 1925 (E. S. M.); Feb. 21, 1933 (L. S. K.) to Dec. 7, 1929.

Orchard Oriole (*Icterus spurius*)

Uncommon summer resident.

E—May 4, 1929 (W. R.) to July 11, 1932. Nest and young, May 30, 1904 (L. S. K.) to June 24, 1928 (E. S.).

H—Arlington, formerly heard and seen singing and probably bred (O. P. M.); June 9, 1905 (E. S. M.).

Baltimore Oriole (*Icterus galbula*)

Summer resident.

E—Still common, but far less than formerly (Trippet); April 26, 1925 (R. F. H.) to Sept. 23, 1928. Nest, June 11, 1926 (W. R.).

H—Arlington; formerly regular breeder, now rare; probably still breeds (O. P. M.); 1933; May 8, 1915 (E. S. M.) to fall.

Rusty Blackbird (*Euphagus carolinus*)

Common transient, rare in winter.

E—Feb. 27, 1933 (L. L. W.) to May 13, 1934; Oct. 1, 1928 to Dec. 24, 1932 (J. L. E. and W. R.).

H—Oct. 14, 1933, North Hudson Park, to Nov. 11, 1914 (E. S. M.).

Purple Grackle (*Quiscalus quiscula quiscula*)

Resident.

E—Abundant breeder and transient; occasional in winter; Feb. 14, 1932 (Mrs. C. S. H.) to Nov. 18, 1896 (collected by W. E. D. Scott—Birds of Union County," Urner). About the December, January and early February records there is doubt as to the subspecific identification. Nest, April 30, 1928 (E. S.).

H—Regular migrant and summer resident; March 3, 1935 to Nov. 29, 1931; uncommon in December, January and February, but subspecies not determined positively.

Bronzed Grackle (*Quiscalus quiscula aeneus*)

Transient and winter visitant.

E—Common migrant; often abundant; probably more common in winter than preceding; March 10, 1929 to March 27, 1929 (W. R.); Oct. 13, 1929 to Dec. 13, 1931.

H—No positive records but probably most winter birds are of this species.

Eastern Cowbird (*Molothrus ater ater*)

Transient and very common summer resident.

E—Often abundant in migration; March 6, 1926 (W. R.) to Dec. 24, 1933 (F. W.); egg, May 2, 1928 (W. R.); young able to fly, June 8, 1929 to July 4, 1871 (H. Herrick).

H—Formerly bred (O. P. M.); common transient; Feb. 25, 1926 (E. S. M.) to Nov. 11, 1934.

Scarlet Tanager (*Piranga erythromelas*)

Summer resident.

E—Common; formerly more so on oak ridges (Trippet); May 2, 1925 (R. F. H.) to Sept. 28, 1930. Nest and eggs, June 5, 1870 (Herrick); nest and young about week old, July 18, 1909 (L. S. K.).

H—Formerly bred (O. P. M.) and to 1919 (E. S. M.); May 11, 1927 (L. S. K.) to Aug. 2, 1913 (L. S. K.).

Eastern Cardinal (*Richmondena cardinalis cardinalis*)

E—Not common permanent resident but increasing; at northern limit of its breeding range; found in certain localities about the Orange Reservation, Montclair and Essex Fells, etc. Nest, May 18, 1933 (F. W.).

H—Akhurst reports years ago (1878) pair breeding near Jersey City (Bicknell, Bull. N. O. C. III, 1878, p. 132); rare; April 11, 1915 (E. S. M.), and Jan. 26, 1920, at Arlington (O. P. M.).

Rose-breasted Grosbeak (*Hedymeles ludovicianus*)

Summer resident.

E—Locally common; April 30, 1934 (L. S. K.) to Oct. 9, 1932 (Mr. and Mrs. Theo. Edison); Dec. 4, 1932 (Mrs. G. G. Fry). Nest, June 10, 1927 (W. R.).

H—Formerly bred (O. P. M.); May 11 and 14, 1927 (E. S. M.); specimen in hotel at Homestead.

Eastern Blue Grosbeak (*Guiraca caerulea caerulea*)

E—May 11, 1935 (Mrs. Scott Bailey) and May 15, 1932 (Mrs. C. S. H.) in garden in Montclair.

H—Several individuals noticed in a single day in spring by Mr. Akhurst near Snake Hill before 1878 (E. P. Bicknell in Bull. N. O. C. III, 1878, p. 132); one seen at Arlington (O. P. M.) about September, 1925.

Indigo Bunting (*Passerina cyanea*)

Very common summer resident.

E—May 7, 1926 (R. F. H.) to Oct. 9, 1932.

H—May 6, 1928 (E. S. M.) to Aug. 2, 1913 (L. S. K.); summer resident (nest) on Snake Hill, 1933.

Dickcissel (*Spiza americana*)

H—In 1851 common summer resident at Hoboken (*Auk*, 1891, p. 395). This species has peculiarly disappeared.

Eastern Evening Grosbeak (*Hesperiphona vespertina vespertina*)

Winter visitant, rare or irregular.

E—Recorded as follows: Probable record, Nov. 17, 1923 (Montclair Bird Club) Verona; Dec. 31, 1929 (W. R.), Caldwell; Jan. 16, 1927 (C. A. U.), and Jan. 26, 1930 (C. A. U.) in Orange Reservation; March 14, 1920 (Mrs. C. S. H.) at Verona.

H—Jan. 26 to Feb. 23, 1920, at Arlington (O. P. M. and G. A. King).

Eastern Purple Finch (*Carpodacus purpureus purpureus*)

E—Common transient; locally common about feeding stations in winter; sometimes practically absent at this season; Sept. 29, 1931 to May 12, 1928 (Mrs. C. S. H.).

H—Oct. 14, 1933, North Hudson Park.

Canadian Pine Grosbeak (*Pinicola enucleator leucura*)

Irregular and sometimes common winter visitant.

E—Dec. 22, 1929 to Feb. 16, 1930 (C. A. U.); also autumn 1884 (Trippet), and Dec. 25, 1903 (V. E. Gorman and F. T. Morrison, *Bird-Lore*, January-February 1904 census).

H—Abundant at Weehawken, Oct., 1836 to March, 1837 (Ward—Trans. N. Y. Acad. Sci., IV, p. 5); Dec. 20, 1913, Snake Hill (spec. coll. by L. S. K.).

European Goldfinch (*Carduelis carduelis*)

E—Dec. 3, 1911 at West Orange, and Jan. 4, 1913 at Caldwell (L. S. K.).

H—Introduced at Hoboken in 1878 (Eaton, "Birds of New York," p. 281, Vol. 2). Last record, May 23, 1907, at Arlington (E. S. M.).

Redpoll (*Acanthis linaria linaria*)

Irregular winter visitant; at times common.

E—Dec. 20, 1926 (R. F. H.) to March 14, 1934 (L. S. K.).

H—Arlington, Feb. 23, 1920 (O. P. M.) to March 8, 1908 (L. S. K.).

Northern Pine Siskin (*Spinus pinus pinus*)

Irregular transient and uncommon winter visitant.

E—Oct. 21, 1928 to May 20, 1923 (R. F. H.).

H—Dec. 10, 1911 (L. S. K.) to March 10, 1917, Westside Park (L. S. K.).

Goldfinch (*Spinus tristis tristis*)

Common permanent resident; sometimes scarce in winter.

E—Migrants at Newark meadows, Aug. 21, 1932 to May 30, 1931, and winter. Nest, July 26, 1926 (W. R.).

H—Permanent resident; formerly bred at Arlington to 1928 (E. S. M.).

Red Crossbill (*Loxia curvirostra pusilla*)

Very irregular transient and winter visitant.

E—Oct. 17, 1896 (W. E. D. Scott) to April 10, 1925 (Mrs. C. S. H.); very common winter 1899-1900 (A. R. Dugmore).

H—Recorded in winter at Arlington (O. P. M.).

White-winged Crossbill (*Loxia leucoptera*)

E—Recorded only in winter of 1899-1900 when it was reported as common with preceding species (Babson and Dugmore,—Stone, p. 224).

Red-eyed Towhee (*Pipilo erythrophthalmus erythrophthalmus*)

Summer resident.

E—Very common as breeder and transient; a few winter records, especially in December; April 14, 1929 to Dec. 26, 1928 (R. F. H.); winter 1922 and 1923. Nest and eggs, May 8, 1932 (Paulson).

H—April 16, 1927 to Dec. 28, 1924 at Arlington (E. S. M.); formerly bred to 1922 (E. S. M.).

Ipswich Sparrow (*Passerculus princeps*)

E—Jan. 25, 1934 (L. S. K.) at Port Newark.

Eastern Savannah Sparrow (*Passerculus sandwichensis savanna*)

E—Common migrant; resident on Newark marshes; March 11, 1928 (E. S.) to June 5, 1917 (R. H. H.); Oct. 26, 1930, and Jan. 18, 1931 in Montclair region.

H—Spring and fall transient; may winter; April 8, 1933 at North Hudson Park; Sept. 30, 1934 to Dec. 23, 1929.

Eastern Grasshopper Sparrow (*Ammodramus savannarum australis*)

Rare and local breeder.

E—March 20, 1894, West Orange—specimen taken by Van Rensselaer in Dwight collection—to Oct. 18, 1931 (W. F. E., J. L. E. and C. A. U.). Nest and eggs, May 30, 1927 (E. S.) to July 4, 1871 (H. Herrick). Juvenile taken, July 19, 1898 (Van Rensselaer).

H—Formerly bred at Arlington to June 15, 1913 (E. S. M.); one bird in song, Secaucus, Aug. 8, 1931 (C. A. U. and J. L. E.).

Eastern Henslow's Sparrow (*Passerherbulus henslowi susurrans*)

E—Three records—May 5, 1928, May 11, 1935 (E. S.); specimen taken by Herrick recorded from Chatham, N. J., without data (probably Dickinson's Neck).

Acadian Sparrow (*Ammospiza caudacuta subvirgata*)

Rare transient; probably to be found more often by careful search.

E—Recorded at Port Newark on Sept. 30, 1929 (R. T. Peterson).

H—One seen in marsh along Hackensack near Snake Hill, May 30, 1934.

Sharp-tailed Sparrow (*Ammospiza caudacuta caudacuta*)

Summer resident.

E—Much less common than formerly at Port Newark; April 30, 1935 (L. S. K.) to Oct. 23, 1932. Juvenile, Aug. 17, 1930.

H—Formerly bred at Kearney prior to fill (O. P. M.); still breeds along the Hackensack in Jersey City (1935); June 6, 1896 to Aug. 19, 1899, at Greenville, Jersey City (W. de W. Miller).

Nelson's Sparrow? (*Ammospiza caudacuta nelsoni*)

E—Record of a Sharp-tailed sparrow reported by Thurber (Stone, p. 233) as being taken on the Passaic River below Chatham, might have been this species, owing to its inland distribution.

Northern Seaside Sparrow (*Ammospiza maritima maritima*)

E—A few pairs still occur on edge of Newark Bay at Port Newark; April 30, 1934 (L. S. K.); April 30, 1931 to Oct. 2, 1934 (L. S. K.).

H—Formerly present at Greenville, June 6, 1896 to Aug. 19, 1899 (W. de W. Miller).

Eastern Vesper Sparrow (*Pooecetes gramineus gramineus*)

E—Local and uncommon summer resident; March 30, 1929 (Montclair Bird Club) to Dec. 26, 1921 (Robert Barbour). Nest and 4 eggs, May 10, 1878 (Herrick). Nest, June 1, 1927 (E. S.).

H—Transient; not common; April 10, 1920 (E. S. M.) and April 12, 1922 at Arlington (E. S. M.); Oct. 14, 1933 at North Hudson Park.

Eastern Lark Sparrow (*Chondestes grammacus grammacus*)

E—One seen (C. A. U) on the Union County side of Bound Creek, might have just crossed the line, Oct. 28, 1928 (C. A. U.); one picked up dead, Sept. 19, 1934 (L. S. K.).

Slate-colored Junco (*Junco hyemalis hyemalis*)

E—Abundant winter visitant and migrant; Sept. 25, 1932 (J. L. E.) to May 5, 1931.

H—Abundant migrant and common winter visitant; Oct. 14, 1933 to May 5, 1928 (E. S. M.).

Eastern Tree Sparrow (*Spizella arborea arborea*)

Abundant migrant and winter visitant.

E—Oct. 30, 1930 (Mrs. C. S. H.) to April 25, 1926 (J. L. E.).

H—Oct. 30, 1927 (E. S. M.) and Oct. 30, 1932 to April 18, 1920 (E. S. M.).

Eastern Chipping Sparrow (*Spizella passerina passerina*)

Very common summer resident, may occur in winter.

E—March 31, 1929 (W. R.) to Dec. 24, 1923 (Barbour), and Jan. 4, 1935 (W. R.). Nest and eggs, May 18, 1928 (E. S.).

H—Formerly bred at Arlington (O. P. M.); to 1919 (E. S. M.); March 26, 1926 (E. S. M.) to Oct. 14, 1933 at North Hudson Park. Nests, May 29, 1870, 1, 2 eggs, 1, 2 young, 1 egg, at Weehawken (H. Herrick).

Eastern Field Sparrow (*Spizella pusilla pusilla*)

Resident.

E—Very common summer resident; less numerous in winter; nest, May 15, 1927 (W. R.).

H—Arlington, formerly bred (O. P. M.); to 1928 (E. S. M.); still breeds in North Hudson Park, April 14, 1935 to Oct. 14, 1933; winter 1916 and 1921 (E. S. M.).

White-crowned Sparrow (*Zonotrichia leucophrys leucophrys*)

Uncommon but regular migrant; more often seen in fall than spring.

E—April 20, 1928 (E. S.) to May 21, 1927 (Loomis); Oct. 18, 1931 to Oct. 26, 1930.

H—Uncommon migrant; May 14, 1920 (E. S. M.) and May 19, 1915, at Arlington (E. S. M.); Oct. 20, 1911, Arlington (E. S. M.), and Oct. 14, 1933, North Hudson Park.

White-throated Sparrow (*Zonotrichia albicollis*)

Abundant transient; common in winter; accidental in summer.

E—Sept. 7, 1932 (W. R.) to May 26, 1910 (L. S. K.); July 14 to 31, 1923, an immature bird of this species seen, captured and banded (R. H. H.). In 1933, Mrs. C. S. Hegeman had a pair of birds which lingered into June, one being seen into July. There is a set of eggs in the Hallinan collection in Paterson Museum, marked as taken in Short Hills, June 5, 1894, but there may be some error about the locality.

H—Oct. 14, 1933 to May 28, 1927 (E. S. M.); a singing male in Secaucus cedar swamp carefully observed July 7, 1935 (J. L. E., R. T. Peterson, R. C. and W. F. E.).

Eastern Fox Sparrow (*Passerella iliaca iliaca*)

Common transient, rare and sometimes absent in winter.

E—Earliest spring migrant, Feb. 27, 1935, Montclair (Mrs. C. S. H.); Oct. 20, 1929 (J. L. E.) to April 30, 1934 (L. S. K.).

H—Oct. 22, 1933 to Dec. 10, 1917 (E. S. M.); March 3, 1935 to April 8, 1933; also winter (E. S. M.); 1920 and 1921, at Arlington.

Lincoln's Sparrow (*Melospiza lincolni lincolni*)

Rare but regular migrant.

E—May 2, 1928 (Loomis) to May 13, 1923 (R. F. H.); Sept. 6, 1934 (L. S. K) and Sept. 24, 1896 (collected by W. E. D. Scott) to Oct. 6, 1923 (R. H. H.).

Swamp Sparrow (*Melospiza georgiana*)

Abundant summer resident in suitable localities; rare elsewhere except as a migrant and uncommon in winter.

E—Nest and eggs, May 15, 1929 (W. R.).

H—Arlington, March 22, 1924 (E. S. M.) to Nov. 29, 1931; winter, Jan. 7, 1932, Feb. 9, 1920 (E. S. M.), etc.

Eastern Song Sparrow (*Melospiza melodia melodia*)

Permanent resident.

E—Abundant breeder; less common in winter. Nest and eggs, April 30, 1928 (E. S.).

H—Common summer resident and even breeds in Hoboken. Nest and 3 eggs, May 22, 1869, Bull's Ferry (H. Herrick).

Lapland Longspur (*Calcarius lapponicus lapponicus*)

Irregular migrant and winter visitant on marshes.

E—Nov. 14, 1926 (C. A. U.) to March 22, 1922 (W. de W. Miller).

H—Recorded at Bayonne, March 3, 1935, and Feb. 22, 1933, both times with flock of Horned Larks in City Park.

Eastern Snow Bunting (*Plectrophenax nivalis nivalis*)

E—Rare winter visitant except on Newark marshes; Nov. 2, 1930 (J. L. E.) to Feb. 19, 1905 (L. S. K.).

Shorebirds on the North and Central New Jersey Coast

By Charles A. Urner

Persistent combing of the salt marshes, mud flats, shallows and beaches of the New Jersey coast from Newark Bay to Brigantine during 1932, 1933, and 1934 yielded sight records of a total of 38 species and subspecies, bringing the 7-year total to 39.

The writer continued, through 1932, 1933 and 1934, the compilation of numbers of individuals of each species seen on field trips over this area of the New Jersey Coast by observers trained in correct identification of shorebirds. He has added to his own counts the totals observed by Julian K. Potter and certain other members of Delaware Valley Ornithological Club, James L. Edwards, Warren F. Eaton, Charles K. Nichols, Lester L. Walsh, C. D. Brown and other members of Linnæan Society of New York. The results have been summarized by the same method used in the four preceding years [see *Auk*, 1929, p. 314; 1930, p. 424; 1931, p. 418; 1932, p. 470].

Number of Locality Counts

	North Migration			South Migration		
	1932	1933	1934	1932	1933	1934
Newark Meadows	12	11	4	55	57	49
Manasquan River	6	10	3	9	12	13
Seaside Park	7	6	2	3	8	11
Barnegat Inlet	2	1	1	12	3	14
Barnegat Marshes	1	4	4	10	6	13
Beach Haven Inlet	6	5	4	15	15	31
Tuckerton Marshes	4	7	5	21	15	24
Brigantine and Absecon	6	8	11	23	34	13
Totals	44	52	34	148	150	168

The Distribution of Trips on Which any Shorebirds Were Seen

	North Migration		
	1932	1933	1934
February	—	9	—
March	2	12	7
April	18	16	14
May	22	13	13
June	2	2	—
	—	—	—
Totals	44	52	34

	South Migration		
	1932-33	1933-34	1934-35
June	2	1	4
July	39	26	28
August	33	41	48
September	27	30	30
October	22	15	16
November	17	15	19
December	5	7	18
January	3	10	5
February	—	5	—
Totals	148	150	168

The number and seasonal distribution of trips and localities covered has varied more or less so that the totals are not exactly comparable. But an even more important variable factor than number of trips has been the feeding conditions of the areas covered. This has had great influence during the summer on the number of birds stopping and tarrying on areas such as Newark Meadows and Barnegat Marshes and this variation must be considered in comparing one year with another, the totals of those species preferring fresh or brackish muddy shallows and marshes.

1932—Summer and fall conditions were more favorable than in the two previous years with more fresh water ponds on the Newark fill and the various brackish marshes.

1933—Summer and fall conditions were still more favorable on Newark fill near the Airport where, because of shortage of funds, no ditches were dug or dikes repaired by the Mosquito Commission and where the brackish sewage-polluted waters of Bound Creek flooded a large section of the fill every high tide, leaving ideal shallow ponds for shore-bird feeding. On other areas of the fill shallow rain water ponds were a great attraction, and there was considerable bare ground or ground covered only with low growths, furnishing good feeding conditions.

1934—On Newark Meadows ditching and dike repair, coupled with protracted mid-summer drought, dried the excellent feeding grounds of former years near the Airport, and *Phragmites* spread over more of the bare ground making the site less attractive to shorebirds. South of Bound Creek, toward Elizabeth, the unfilled but very dry marsh was burned over in places and over it all grasshoppers and insects abounded. Here, in spite of some extension of the *Phragmites* patches, several species, chiefly Lesser Yellow-legs and Upland Plover, were present in numbers and there was enough water in some of the ponds to attract a fair variety of species. However, except for a few species there was less accumulating of migrants than usual on Newark Meadows and conditions were decidedly less favorable for holding the smaller species, which must have gone elsewhere. Many congregated on a piece of salt marsh along Raritan River, being filled in by the usual sand-sucking method. The dryness of Newark Meadows

explains much of the drop in the totals for Lesser Yellow-legs and Semipalmated Sandpiper. Conditions farther south in the area were quite favorable.

The numbers of species and subspecies recorded during the three years follow:

	1932	1933	1934
Northbound	24	26	27
Southbound	34	33	36
Totals	37	34	36

From the three years' records the following observations are pertinent:

Charadrius melodus. Piping Plover.—Extreme dates, Mar. 17 to Nov. 6. Some increase. Good north flight Mar. 16, 1933, and, due to colder spring possibly, April 8, 1934. High counts, southbound, July 16, 2 and 17 respectively.

Charadrius semipalmatus. Semipalmated Plover.—Extreme dates April 4 to June 4; July 7 to Dec. 24. Principal movements, northbound, May 7 to 28; southbound, Aug. 4 to Sept. 3. High counts, northbound, May 18, 7 and 20; southbound, Aug. 6, Sept. 3 and Aug. 12.

Pagolla w. wilsonia. Wilson's Plover.—One record, Sept. 15, 1934, by Julian K. Potter at Brigantine.

Oxyechus v. vociferus. Killdeer.—Present all year. High counts, northbound, May 18, Feb. 26 and May 13; southbound, July 9, 12 and 7.

Pluvialis d. dominica. American Golden Plover.—Totals for 1932 were a new high for recent years; sharp decrease since. First spring record for Newark Meadows, May 30, 1933. Extreme dates, fall, Aug. 20 to Dec. 4; principal movements middle two weeks in September. High counts, southbound, Sept. 15, 20 and 8.

Squatarola squatarola. Black-bellied Plover.—Present most of year in some numbers; sometimes all year. Principal movement north, May 7 to 28; south Aug. 13 to Oct. 15, occasionally late. High counts, northbound, May 18, 28, and 20; southbound, Oct. 2, Sept. 17 and Nov. 4.

Arenaria interpres morinella. Ruddy Turnstone.—Extreme dates, northbound, May 7 to June 4; southbound, July 23 to Dec. 2. Principal movement, northbound, May 14 to 28; southbound, Aug. 7 to Sept. 3. High counts, northbound, May 18, 28 and 20; southbound, Aug. 20, 25 and 12.

Philohela minor. American Woodcock.—Scattered records, only on coast. Extreme date, Feb. 26 to Nov. 12.

Capella delicata. Wilson's Snipe.—Extreme dates: Feb. 26 to May 16; Sept. 2 to Dec. 24. Principal movements not conclusively shown. High counts, northbound, April 17, 1, and 28; southbound, Oct. 2, Sept. 24 and Oct. 14.

Phaeopus hudsonicus. Hudsonian Curlew.—Probably some further increase. Extreme dates, northbound, April 29 to May 27; southbound, July 2 to Sept. 17. Principal movements, northbound, May 7 to 27; southbound, July 21 to Sept. 3. High counts, northbound, May 18, 14 and 16; southbound, July 23, 30 and 21.

Bartramia longicauda. Upland Plover.—Some increase indicated. Spring data inconclusive. Principal movement south, Aug. 1 to 30; latest, Sept. 9. High counts, Aug. 14, 15 and 11.

Actitis macularia. Spotted Sandpiper.—Extreme dates: May 5 to Oct. 1. Principal southbound movement, July 14 to Sept. 3. High counts, southbound, July 16, Aug. 16 and Aug. 18.

Tringa s. solitaria. Eastern Solitary Sandpiper.—Coastal records scattered, but becoming more frequent. Extreme dates: northbound, May 1 to 18; southbound, July 11 to Oct. 14.

Catoptrophorus semipalmatus, subsp.? Willet.—Numbers very variable from year to year. Spring records few, May 7 to 21. All evidence indicates that summer birds are moving south. Extreme dates, July 10 to Oct. 14. Principal movement Aug. 15 to Sept. 8. High counts, Sept. 3, Aug. 15 and Aug. 25.

RANKING OF SHOREBIRDS ON NEW JERSEY COAST AND SALT MARSHES

Spring Flight of 1932

	Rank	Times Seen	Largest No. on 1 Locality Trip	Total No. All Trips
Semipalmated Sandpiper	1	13	4,000	11,454
Semipalmated Plover	2	12	4,000	6,443
Black-bellied Plover	3	9	2,000	2,786
Eastern Dowitcher	4	8	1,500	1,971
Least Sandpiper	5	7	1,500	2,150
Greater Yellow-legs	6	18	100	435
Ruddy Turnstone	7	7	500	1,212
Sanderling	8	6	160	495
Hudsonian Curlew	9	4	400	580
Killdeer	10	16	6	55
Spotted Sandpiper	11	9	10	44
Piping Plover	12	7	20	42
Red Phalarope	13	1	300	327
American Knot	14	4	100	185
Red-backed Sandpiper	15	6	25	40
Lesser Yellow-legs	16	5	10	23
Solitary Sandpiper	17	5	3	12
Wilson's Snipe	18	4	6	18
American Woodcock	19	3	3	5
Hudsonian Godwit	20	1	2	2
White-rumped Sandpiper	21	1	2	2
Western Sandpiper	22	1	1	1
Northern Phalarope	23	1	1	1
Wilson's Phalarope	24	1	1	1

Totanus melanoleucus. Greater Yellow-legs.—Possibly some but no pronounced recent increase. Extreme dates, northbound, March 25 to June 24; southbound, June 27 to Dec. 2. Principal movement, northbound, April 23 to May 18; southbound, July 30 to Oct. 2. High counts, northbound, May 7, April 29, May 5; southbound, Aug. 13, Sept. 2 and Sept 29.

Totanus flavipes. Lesser Yellow-legs.—Numbers seen and tarrying vary widely with feeding conditions on Newark Meadows. Probably gradual continued increase. Extreme dates, northbound, scattered few May 1 to 18 but record num-

RANKING OF SHOREBIRDS ON NEW JERSEY COAST AND SALT MARSHES

Southbound Flight of 1932

	Rank	Times Seen	Largest No. on 1 Locality Trip	Total No. All Trips
Semipalmated Sandpiper	1	86	2,700	27,651
Lesser Yellow-legs	2	88	800	6,745
Eastern Dowitcher	3	56	2,450	9,436
Sanderling	4	56	1,000	8,795
Least Sandpiper	5	84	400	2,295
Semipalmated Plover	6	78	300	4,860
American Knot	7	32	790	2,907
Pectoral Sandpiper	8	59	125	954
Black-bellied Plover	9	64	75	935
Greater Yellow-legs	10	66	75	847
Killdeer	11	85	40	570
American Golden Plover	12	30	300	2,175
Hudsonian Curlew	13	24	350	2,140
Spotted Sandpiper	14	70	25	418
Red-backed Sandpiper	15	26	100	802
Ruddy Turnstone	16	39	75	407
Stilt Sandpiper	17	44	30	264
Western Sandpiper	18	45	25	218
Willet	19	20	32	90
Piping Plover	20	24	20	160
Upland Plover	21	14	25	110
White-rumped Sandpiper	22	24	8	57
Wilson's Snipe	23	10	10	35
Avocet	24	7	3	21
Wilson's Phalarope	25	9	2	10
Buff-breasted Sandpiper	26	9	1	9
American Woodcock	27	4	3	6
Marbled Godwit	28	5	2	6
Red Phalarope	29	1	6	6
Solitary Sandpiper	30	7	1	7
Baird's Sandpiper	31	2	1	2
Purple Sandpiper	32	1	2	2
Ruff	33	1	2	2
Long-billed Dowitcher	34	1	1	1
Northern Phalarope	35	1	1	1

bers with maximum of 24, May 12, spring of 1934, which may be indicative of a broader migration route as numbers increase; southbound June 26 to Nov. 12. Principal movements, southbound, July 13 to Oct. 1. High counts, southbound, July 28, July 19 and Aug. 30. Usually two main movements with peaks in July and September, though August movement at times quite heavy.

Calidris canutus rufus. American Knot.—Wide variation in numbers seen from year to year but 1934 totals encouraging. Extreme dates, northbound, May 7 to June 4; southbound, July 16 to Jan. 13. Principal movements, northbound, May 16 to 28; southbound, July 23 to Aug. 18. High counts, northbound, May 18, 28 and 21; southbound, Aug. 1, Aug. 6 and July 28.

Arquatella maritima. Purple Sandpiper.—Some recent increase in scattered winter records, probably due to increasing number of artificial rock jetties which furnish food supply. Extreme dates, Nov. 18 to April 7.

Pisobia melanotos. Pectoral Sandpiper.—Probably some increase. Spring records few, May 7 to 16. Extreme dates, southbound, July 10 to Nov. 12. Prin-

RANKING OF SHOREBIRDS ON NEW JERSEY COAST AND SALT MARSHES

Spring Flight of 1933

	Rank	Times Seen	Largest No. on 1 Locality Trip	Total No. All Trips
Semipalmated Sandpiper	1	12	2,500	10,979
Black-bellied Plover	2	17	600	2,244
Eastern Dowitcher	3	11	5,000	6,909
Least Sandpiper	4	12	700	1,691
Semipalmated Plover	5	12	500	1,973
Red-backed Sandpiper	6	15	500	906
Ruddy Turnstone	7	9	700	2,520
Sanderling	8	13	400	1,024
Greater Yellow-legs	9	22	79	443
Killdeer	10	25	20	156
American Knot	11	8	250	670
Piping Plover	12	9	39	123
Hudsonian Curlew	13	5	150	276
Spotted Sandpiper	14	10	10	42
White-rumped Sandpiper	15	8	15	64
American Woodcock	16	11	6	40
Northern Phalarope	17	2	24	34
Wilson's Snipe	18	7	3	14
Western Sandpiper	19	3	5	7
Red Phalarope	20	1	9	9
Willet	21	4	2	6
Upland Plover	22	2	3	5
Solitary Sandpiper	23	2	1	2
Lesser Yellow-legs	24	1	1	1
Pectoral Sandpiper	25	1	1	1
American Golden Plover	26	1	1	1

cipal movements variable; southbound, July 23 to Oct. 1. High counts, southbound, Sept. 15, Sept. 17 and Aug. 18.

Pisobia fuscicollis. White-rumped Sandpiper.—Numbers vary widely year to year. Extreme dates, northbound, May 6 to 30; southbound, July 14 to Nov. 12. Principal movements, northbound, May 7 to 27; southbound, Aug. 30 to Oct. 15. High counts, northbound, May 8, 21 and 27; southbound, Sept. 28, 10 and 16.

Pisobia bairdi. Baird's Sandpiper.—No spring records. Southbound records show a slight average increase. Extreme dates, Aug. 18 to Oct. 7. Principal movements, Sept. 8 to Oct. 7. High counts, Sept. 10, 30 and 8.

RANKING OF SHOREBIRDS ON NEW JERSEY COAST AND SALT MARSHES

Southbound Flight of 1933

	Rank	Times Seen	Largest No. on 1 Locality Trip	Total No. All Trips
Semipalmated Sandpiper	1	72	4,000	52,146
Lesser Yellow-legs	2	70	700	12,445
Semipalmated Plover	3	67	500	5,318
Eastern Dowitcher	4	61	500	3,116
Least Sandpiper	5	65	400	3,439
Sanderling	6	46	500	6,567
Greater Yellow-legs	7	74	150	1,328
Black-bellied Plover	8	59	350	1,530
Western Sandpiper	9	48	500	1,121
Pectoral Sandpiper	10	56	300	1,663
Killdeer	11	80	50	964
Red-backed Sandpiper	12	31	324	2,469
White-rumped Sandpiper	13	41	200	894
Stilt Sandpiper	14	45	60	716
Spotted Sandpiper	15	55	25	296
Hudsonian Curlew	16	19	250	888
Ruddy Turnstone	17	21	34	387
American Golden Plover	18	23	32	143
American Knot	19	25	25	173
Upland Plover	20	21	30	143
Willet	21	17	30	205
Piping Plover	22	20	10	107
Wilson's Snipe	23	21	6	31
Wilson's Phalarope	24	19	6	33
Solitary Sandpiper	25	12	2	20
Hudsonian Godwit	26	10	2	11
Purple Sandpiper	27	4	5	10
Baird's Sandpiper	28	7	2	9
Marbled Godwit	29	4	4	7
Northern Phalarope	30	6	2	7
Long-billed Dowitcher	31	5	1	5
Buff-breasted Sandpiper	32	2	1	2
American Woodcock	33	1	1	1

Pisobia minutilla. Least Sandpiper.—Extreme dates, northbound, April 28 to June 4; southbound, June 23 to Nov. 4. Principal movements, northbound, April 29 to May 25; southbound, July 2 to Sept. 22. High counts, northbound, May 18, 7 and 12; southbound, July 13, 15 and 14. Sometimes fairly large September movement.

Erolia testacea. Curlew Sandpiper.—One seen in flight Oct. 28, 1934; swung close several times and passed at varying levels with mixed flocks. Bird very light below, whiter than Red-backs, fairly dark above with distinct wing stripe but not as prominent as Red-backs; clear white rump and long evenly curved bill. Note definitely different from either White-rump or Red-back. Size comparison in conformity.

Pelidna alpina sakhalina. Red-backed Sandpiper.—Increasing winter resident from Beach Haven south up to extreme cold winter of 1933-34, since which the northern limit of wintering flocks has moved slightly south again. Extreme dates, July 9 to June 4, principally Sept. 30 to Feb. 12; few July and August often in

RANKING OF SHOREBIRDS ON NEW JERSEY COAST AND SALT MARSHES

Spring Flight of 1934

	Rank	Times Seen	Largest No. on 1 Locality Trip	Total No. All Trips
Eastern Dowitcher	1	11	1,000	2,296
Semipalmated Sandpiper	2	11	800	2,418
Black-bellied Plover	3	12	800	1,843
Least Sandpiper	4	8	250	538
Greater Yellow-legs	5	16	100	346
Red-backed Sandpiper	6	14	100	383
Semipalmated Plover	7	10	200	488
Ruddy Turnstone	8	5	150	451
Piping Plover	9	13	28	153
Sanderling	10	10	50	258
Hudsonian Curlew	11	5	200	295
Killdeer	12	16	10	56
American Knot	13	5	50	112
Spotted Sandpiper	14	7	20	51
Lesser Yellow-legs	15	4	25	31
American Woodcock	16	5	3	7
White-rumped Sandpiper	17	4	10	18
Solitary Sandpiper	18	4	8	21
Wilson's Snipe	19	2	2	4
Pectoral Sandpiper	20	2	1	2
Red Phalarope	21	1	2	2
Upland Plover	22	1	1	1
Western Sandpiper	23	1	1	1
Purple Sandpiper	24	1	1	1
Stilt Sandpiper	25	1	1	1
Wilson's Phalarope	26	1	1	1

breeding plumage. Might include stray Dunlins but not identified. High counts, northbound, May 15, Feb. 12 and April 29; southbound, Oct. 16, Dec. 24 and Nov. 25.

Limnodromus g. griseus. Eastern Dowitcher.—Numbers vary but gains of recent years fairly sustained though rate of increase has slowed. Extreme dates, northbound, April 28 to June 18; southbound, June 30 to Nov. 4. Principal movements, northbound, April 29 to May 21; southbound, July 7 to Aug. 25. High counts, northbound, May 18, 7 and 20; southbound, July 10, 16 and 28.

RANKING OF SHOREBIRDS ON NEW JERSEY COAST AND SALT MARSHES

Southbound Flight of 1934

	Rank	Times Seen	Largest No. on 1 Locality Trip	Total No. All Trips
Semipalmated Sandpiper	1	65	4,000	15,575
Eastern Dowitcher	2	45	1,200	5,435
Lesser Yellow-legs	3	62	400	5,249
Semipalmated Plover	4	63	350	4,426
Sanderling	5	40	500	4,232
Least Sandpiper	6	50	250	1,382
Killdeer	7	75	55	777
Pectoral Sandpiper	8	45	350	1,146
Black-bellied Plover	9	57	150	1,097
Red-backed Sandpiper	10	27	500	1,812
American Knot	11	20	1,000	3,258
Greater Yellow-legs	12	60	60	701
Hudsonian Curlew	13	19	960	2,896
Western Sandpiper	14	33	100	301
Spotted Sandpiper	15	45	30	315
Ruddy Turnstone	16	28	50	273
Piping Plover	17	25	50	296
Willet	18	30	35	162
Upland Plover	19	19	55	163
Stilt Sandpiper	20	20	30	94
Solitary Sandpiper	21	20	7	36
American Golden Plover	22	7	40	60
White-rumped Sandpiper	23	14	10	34
Wilson's Snipe	24	11	6	27
American Woodcock	25	5	3	7
Wilson's Phalarope	26	3	4	6
Marbled Godwit	27	7	1	7
Long-billed Dowitcher	28	5	1	5
Purple Sandpiper	29	2	3	4
Baird's Sandpiper	30	3	1	3
Buff-breasted Sandpiper	31	3	1	3
Northern Phalarope	32	1	1	1
Red Phalarope	33	1	1	1
Hudsonian Godwit	34	1	1	1
Wilson's Plover	35	1	1	1
Curlew Sandpiper	36	1	1	1

Limnodromus g. scolopaceus. Long-billed Dowitcher.—Probably not as rare as the scarcity of records indicates. No spring identifications. Scattered fall records, Aug. 18 to Nov. 4 based on sight and note identification only.

Micropalma himantopus. Stilt Sandpiper.—One spring record May 12, 1934. Extreme dates, southbound, July 7 to Oct. 12. Principal movements, July 19 to Sept. 30. High counts, Aug. 21, Sept. 2 and Aug. 5.

Ereunetes pusillus. Semipalmated Sandpiper.—Decrease in 1934 records probably due to poorer feeding conditions though some evidence of fewer birds in recent years. Extreme dates, northbound, April 29 to June 18; southbound, July 2 to Jan. 16. Principal movements, northbound, May 7 to June 4; southbound, July 15 to Sept. 30. High counts, northbound, May 18, 21 and 16; southbound, July 31, July 30 and Aug. 26.

Ereunetes maurii. Western Sandpiper.—Extreme dates, northbound, May 7 to 25; southbound, July 4 to Dec. 26. Principal movements, northbound, May 7 to 25; southbound, averaging later than Semipalmated, July 16 to Sept. 16. High counts, northbound, May 25, 7 and 12; southbound, Aug. 28, Sept. 11 and Sept. 16.

Tryngites subruficollis. Buff-breasted Sandpiper.—No spring records. Extreme scattered dates, southbound, Aug. 30 to Oct. 9.

Limosa fedoa. Marbled Godwit.—No spring records. Extreme scattered dates, southbound, Aug. 5 to Sept. 10. High counts, Aug. 20, Sept. 10 and Aug. 5.

Limosa haemastica. Hudsonian Godwit.—Spring records, May 15 and 16; southbound, Aug. 23 to Sept. 30, chiefly Sept. 8 to 30. High counts Sept. 17 and 8.

Philomachus pugnax. Ruff.—One record, 2 birds on Tuckerton Marsh, Oct. 2, 1932.

Crocethia alba. Sanderling.—Winters in small numbers usually, though frozen out some years. Extreme dates, July 2 to June 4. Principal movements, northbound, May 8 to 28; southbound, July 22 to Sept. 17. High counts, northbound, May 8, 14 and 20; southbound, July 29, July 30 and Aug. 25.

Recurvirostra americana. Avocet.—The three birds seen by many observers on Newark Meadows, Sept. 16 to Oct. 4, 1932, were, according to an anonymous communication, the remnant of a flock of 12 birds first seen at Bay Pond, Sept. 4, one being in breeding plumage, all of which were probably illegally killed except the three in question, one of which was wounded.

Phalaropus fulicarius. Red Phalarope.—Spring records increasing; seen each of the three years. Extreme dates, May 7 to 15. One fall record, Aug. 18, 1934, at Beach Haven.

Steganopus tricolor. Wilson's Phalarope.—Records increasing. Seen May 18, 1932, and May 12, 1934. Fall dates more frequent. Extreme dates, Aug. 5 to Oct. 8, chiefly Sept. 3 to Oct. 8. High counts, Sept. 3, Aug. 30 and Aug. 8.

Lobipes lobatus. Northern Phalarope.—Extreme dates, northbound, May 7 to 28; southbound, Aug. 23 to Sept. 18, chiefly Sept. 8 to 18. High counts, Sept. 8, Aug. 23 and Sept. 18.

In the accompanying tables the species have been ranked by averaging the ranking in three particulars: (1) number of times seen; (2) largest number seen in one locality on one day, and (3) totals of numbers recorded on all trips, the latter total of course representing considerable duplication since the same individuals are counted more than once in the case of those species which linger for some time in favorable feeding haunts. This duplication is most marked in the fall in species such as Semipalmated Sandpiper, Lesser Yellow-legs, Dowitcher, Least Sandpiper and Semipalmated Plover, and improves the showing of these in comparison with birds which are seen merely passing on migration. Moreover, trips were not made every day and the main flight of some species may have been witnessed one year and missed the next.

Because of the variable repetitive factor and other factors mentioned no single year's counts can be considered certainly comparable either between different species the same year or between the same species different years. However, the data of a series of years will offer indications, in a general way, of any marked change in the status of the various shorebird species on the New Jersey coast.

The observed trend toward more wintering shorebirds, especially Red-backed Sandpiper and Black-bellied Plover on that section of the Jersey coast covered during the several years of mild winters ending with 1932-3 was checked by the colder winters of 1933-4 and 1934-5 when fewer birds were recorded through January and early February. However, even when early February is cold and the birds move south there is evidence of a later February influx as the weather moderates. Several species have recently been recorded at new late dates, the trend being toward a longer season as numbers increase.

Twenty-nine species, including 9 of the 15 in the "rare" or "very rare" groups, were seen in October; 21 species in November; 14 in December; 8 in January and 6 in February. Those seen after October follow:

Piping Plover—Nov.
Semipalmated Plover—Nov., Dec.
Killdeer—Nov., Dec., Jan., Feb.
Golden Plover—Nov., Dec.
Black-bellied Plover—Nov., Dec., Jan., Feb.
Ruddy Turnstone—Nov., Dec.
Woodcock—Nov.

Wilson's Snipe—Nov., Dec., Jan., Feb.
Greater Yellow-legs—Nov., Dec.
Lesser Yellow-legs—Nov.
American Knot—Nov., Dec., Jan.
Purple Sandpiper—Nov., Dec., Jan., Feb.
Pectoral Sandpiper—Nov.
White-rumped Sandpiper—Nov.
Least Sandpiper—Nov., Dec.
Red-backed Sandpiper—Nov., Dec., Jan., Feb.
Dowitcher—Nov.
Long-billed Dowitcher—Nov.
Semipalmated Sandpiper—Nov., Dec., Jan.
Western Sandpiper—Nov., Dec.
Sanderling—Nov., Dec., Jan., Feb.

Summarizing the southbound flight of the past 7 years and averaging the rankings of each year, we get the following order:

ABUNDANT OR VERY COMMON

1. Semipalmated Sandpiper
2. Lesser Yellow-legs
3. Semipalmated Plover
4. Eastern Dowitcher
5. Sanderling
6. Least Sandpiper

COMMON

7. Killdeer
8. Black-bellied Plover
9. Greater Yellow-legs
10. Hudsonian Curlew
11. Pectoral Sandpiper
12. American Knot
13. Red-backed Sandpiper
14. Spotted Sandpiper
15. Ruddy Turnstone
16. Western Sandpiper

IRREGULARLY AND LOCALLY TOLERABLY COMMON

17. American Golden Plover
18. Piping Plover
19. White-rumped Sandpiper
20. Stilt Sandpiper
21. Willet
22. Upland Plover
23. Wilson's Snipe
24. Solitary Sandpiper*

RARE

25. Purple Sandpiper
26. Marbled Godwit
27. Wilson's Phalarope
28. Baird's Sandpiper
29. American Woodcock*
30. Northern Phalarope
31. Buff-breasted Sandpiper
32. Hudsonian Godwit

VERY RARE

33. Long-billed Dowitcher†
34. Red Phalarope
35. Avocet
36. American Oyster-catcher
37. Ruff
38. Wilson's Plover
39. Curlew Sandpiper

*Status along north and central Jersey coast only.
†Probably so ranked because of usual failure positively to identify.

The past seven years field work in New Jersey indicate, on the whole, reasonable law observance in those areas of chief concentration of shorebirds, and some average increase in the total number of shorebirds under protection. However, most species have become so tame that even a short reopening of the season, considering the number of hunters and the concentration of birds in relatively few localities, would undo in a few days the reconstruction of several years and put a number of species, now fighting their way back, again in a precarious position.

The Half-Hardy Birds That Wintered Through 1933-1934 In the New York City Region

By Walter Sedwitz

A winter unprecedented for cold was that of 1933-1934. A glance over the New York Meteorological Monthly Summary shows that the average temperature for the month of February was 20°F. The lowest reading ever recorded by the New York Weather Bureau was on the 9th of February, 1934, when the mercury fell to —14°F. During this month snow was widespread and storms were frequent. Rivers, bays, lakes, creeks and ocean fronts were ice covered and ice clogged. If our bird population, usually denoted as half-hardy, could survive the weather then we had something worth while to record. It was found to be of interest at the present as well as valuable data to the future, to record the species of half-hardy birds and under what conditions they survived the winter. That these birds survived the cold wave which lasted over a month is a credit to their hardiness and adaptability under abnormal conditions. The hardy land and sea birds perished by the hundreds during this period of cold, while most land birds of all kinds became very scarce. It is, therefore, a very good list that my correspondents have helped me to compile, little different from a list that one might collect during a less severe winter.

It will be noticed that in the above preamble I refer to the winter and February quite as if one were the same as the other. In the beginning of my compilation I was rather sure that the birds seen between the date December 15th and February 15th would be the ones that would be regarded as winter birds of the half-hardy type. But in looking over my material I saw how wrong I was. Except for a three day cold wave during the last days of 1933, December and January were quite mild months, and many times my present list of species were noted. However, when the famous cold wave of February, 1934, clamped down, most of these species disappeared completely. It was found, therefore, to be more accurate to include in my list only those species noted during February. But here again I found a little confusion, for notwithstanding the severity of February, the latter part of the month found a slight influx of migration from the south. It was found justifiable to exclude certain species that could hardly

have wintered. To be exact in the matter of dates I stretched my period of winter from January 28th to March 3rd, 1934.

A few facts about the weather might give a better idea of what conditions were like in the days of February. Right after Christmas, as mentioned before, temperatures dropped to —0°F., —3°F., —6°F., on the 28th, 29th, and the 30th of December. However, these three days, while a foretaste of the later days to come, quickly let up and January was more or less mild and open. But on January 30, 1934, the thermometer registered 5°F., which was followed by readings of 4°F. on the third, 5°F. on the sixth, —7°F. on the eighth, —14°F. on the ninth (low record), —2°F. on the tenth, 3°F. on the fourteenth, 9°F. on the sixteenth, seventeenth and twentieth, 10°F. on the twenty-first, 10°F. on the twenty-third, 6°F. on the twenty-fourth, 9°F. on the twenty-fifth, 9°F. on the twenty-seventh, 7°F. on the twenty-eighth, and 15°F. on the first of March. After this sub-normal spell of weather, temperatures became reasonably normal again.

But low temperatures were not alone as a force to test the endurance of our half-hardy species, for along with the low temperatures came snow storms frequent and severe. The end of December brought 10 inches of snow, which disappeared completely during January. On the 1st of February, 10 inches of snow fell and this fall covered the ground until the 19th when 5 inches more covered the country; on the 20th, 3 inches more were recorded. On the 25th of February 4 inches of snow fell with 7 inches more on the 26th. At that time 14 inches of snow were packed hard on the ground in New York City, which meant tremendous drifts and banks in the wind swept open country. On the 2nd of March, 9 inches of snow still covered the ground.

Concerning open water, little was noted about New York and Long Island. Every lake was frozen tight; Long Island Sound was frozen a half mile from each shore; the bays on southern Long Island were as solid as dry land, with only a few inlets connecting to the ocean open. The Hudson River was partially frozen over and ice-clogged completely as was New York harbor. The few places that did remain open for some time were the fresh water streams that ran into the salt water estuaries. Ice cakes floated in the ocean at many points and soupy formations of ice were seen to be forming in the ocean all along

the shores. Fresh water fowl fled the ice bound ponds and lakes for the only open water, the ocean and sound. Land birds came to gardens, sanctuaries, garbage dumps, sewers, swamps and farm-yards. It was a critical time in the lives of our half-hardy birds.

In general the low temperatures are less injurious to our half-hardy birds than snow and sleet. For as long as these birds can find food and shelter they are fairly sure of surviving. But bring on hail, sleet or snow, any one of which would cover most of the natural food supply, and the birds weaken off and die unless they seek sanctuaries where food is always present. Low temperatures and the lack of food is an optimum condition for the destruction of our half-hardy species. It is quite probable that our northern visitants can endure much longer these mortal conditions without food; but our half-hardy birds lack that extra stored up energy and must feed regularly or else move on. Conditions for our-half-hardy species are far from ideal around New York or else the bulk of these same species would winter in this region instead of migrating hundreds of miles to the south. We can, therefore, describe a half-hardy species as a bird wintering north of its normal range in winter, and which unlike some of the "softer" species (Chat, Oriole, Yellow-throat, etc.) is more or less regularly recorded from year to year long after the southward migration has been concluded.

In all 31 species were recorded—a notable list for such a winter. Most of the species listed in normal winters would be seed, berry, and fruit eaters. But under the stress of cold and snow they seek human agencies for a surer supply of food and a more adequate shelter from the storms. However, in my listing I try to give all the information passed on to me concerning place, time, food, shelter and terrain.

Phalacrocorax auritus auritus. Double-crested Cormorant.—1, Coney Island, Feb. 11 (Breslau, Cruickshank, etc.). Flying southwestward, this bird was probably in migration to a less rigorous climate. Food no doubt was obtainable notwithstanding the ice on the rivers, bays, etc. It probably had attempted to winter on some fish weirs on the south shore of Long Island.

Nycticorax nycticorax hoactli. Black-crowned Night Heron.—Several, Massepequa, Feb. 18th (Breslau, etc.). Wintering in a group of pines surrounding a large estate. These herons must have found food very scarce in the usual place as Great South Bay was completely frozen over. However, food in the tidal creeks

and sewers no doubt helped to forestall any damages to these birds. Four successfully survived February, Idlewild Beach (Mayer).

Aix sponsa. Wood Duck.—A female in weakened condition almost captured, Westbury, Feb. 10 (Matuszewski). Probably a late bird, frozen out of its lake or pond and unable to find food to support itself, it flew in an almost exhausted condition around the nursery. It probably died or fell prey to cats, dogs, or hawks about.

Nyroca collaris. Ring-necked Duck.—9, Cross River, Westchester County, Feb. 12 (J. F. and R. G. Kuerzi). The rapid increase of this formerly rare species about New York City has been one of the most gratifying ornithological phenomena of the last decade. In favored localities like the great Reservoirs of Westchester, the species frequently winters where spillways manage to keep the waters open. Though data are lacking as to whether or not Ring-necks remained throughout the month of February, it is interesting to learn of their presence in an area where the mercury hovered somewhere around 25° below zero.

Nyroca affinis. Lesser Scaup Duck.—2, Coney Island, Feb. 17 (Cruickshank). In a flock of Greater Scaup, these more southern relatives were noted. Probably, like the Wood Duck, they were frozen out of fresh water, but more fortunate in their habits the Lesser Scaups came down to the ocean and were able to obtain food to sustain life. The two birds were seen with Greater Scaup, Scoter, Old-squaw, and Golden-eye.

Buteo platypterus platypterus. Broad-winged Hawk.—Badly crippled bird, Van Cortlandt Park, discovered Dec. 7, 1933 (Cruickshank), was still present Feb. 7, 1934 (W. J. Norse). This unfortunate bird was barely able to fly. It sustained itself chiefly by remaining close to a garbage dump and apparently did not survive the winter.

Rallus elegans elegans. King Rail.—1, Baxter Creek Marshes, Dec. 23 (R. G. Kuerzi and J. F. Matuszewski). This individual was heard calling during the Christmas Census. On March 6 it was found dead but apparently fresh (Malley). It therefore wintered at least into February, but in all likelihood found the food frozen over that had been available up to that time. Open tidal creeks supplied the food area, but like almost everything else, finally froze over.

Capella delicata. Wilson's Snipe.—5, Alley Pond Sanctuary, Feb. 2 (Queens County Bird Club); 2, Van Cortlandt Park Swamp, Feb. 22 (Cruickshank); 1, Eastport, L. I., Feb. 28 (Wilcox); 2, near Wantagh, on a mud bank next to the open water, March 3 (Hickey). The numbers of this snipe seen indicate more than just bare survival. Their mobility must have played a large part in their survival, seeking unfrozen patches of mud banks where the tidal forces opened the water ways.

Zenaidura macroura carolinensis. Eastern Mourning Dove.—6, Speonk, Feb. 4, 15 on Feb. 28 (Wilcox); 10, Westbury, stayed all winter (Matuszewski); 7, Mt. Sinai, all winter (G. P. Helme). The tree nursery at Westbury, the duck farms at Speonk, and the swamp at Mt. Sinai, all formed excellent wintering spots

for these half-hardy birds. Shelter was abundant, and food was plentiful, with house along with their shrubbery, crumbs, and a little natural food, all helped to pull these Doves through the arduous month.

Megaceryle alcyon alcyon. Eastern Belted Kingfisher.—1, New Rochelle, Feb. 12 (Marc C. Rich); 1, Bronx Park, Feb. 21 (Malley); 1, Fort Schuyler, March 3 (Hickey). It must have been a trial for this species to live in a region such as ours was when almost every patch of water was frozen solid. But being quite adaptable to conditions as they came, the bird came down to the coastline and proceeded to live on the salt and brackish water fish. Except for two small areas in the duck pond at the Zoo there was no open water in Bronx Park on the 21st. Here Malley had practically daily observation and it is therefore highly probable that his bird was a wanderer from either the Hudson, the Harlem or the East River, or Long Island Sound.

Colaptes auratus luteus. Northern Flicker.—1, Flushing, Feb. 4 (McBride); 5, Pound Ridge, Feb. 22 (Colvin Farley); a few, Mt. Sinai, Feb. 2, 12, 22 (Helme). The sheltered spots around and near habitations seemed to be the favorite wintering places for this hardy woodpecker. When the landscape looks cold and wintry, it is always a surprise to put up one or more of these "Golden Wings," with their summery colorings. Still they manage to find enough food in the berries, insect eggs, cocoons, and suet at feeding stations to last out the winter.

Sayornis phoebe. Eastern Phoebe.—1, Plainfield, Feb. 4, 5 (F. Clement Scott). This is not the first winter report of a Phoebe and the other record is at the same locality, in the winter of 1912-1913 (Linnaean Abstracts No. 24-25, page 139).

Sitta canadensis. Red-breasted Nuthatch.—1, Alley Pond Sanctuary, all winter until March 3 (Queens County Bird Club); 1, wintered in the New York Botanical Gardens by remaining close to a feeding station, where visitors placed seeds, nuts and crumbs on boulders or on the ground; this individual as well as the Chicadees frequently lit on the heads or shoulders of his hosts and obtained his food directly from their hands (Gibson and others); 1, Westbury, Feb. 11 (Matuszewski). Whether this bird may be classed as a half-hardy one is a point of discussion, but reacting to the cold waves just as surely as a Hermit Thrush, this northern species disappears in the cold winter with few exceptions.

Nannus hiemalis hiemalis. Eastern Winter Wren.—1, Oakland Lake, Queens County (Sheehan). This lone winter record of this uncommon winter resident is rather good, considering that so many residential birds were found dead as a result of the weather. Loving the tangles and swamps as it does, it would seem a not unusual bird to find in this region in the winter; however, it is rarely recorded in that season. The tangled sheltering spots around Oakland Lake with its swampy and rocky terrain is an ideal wintering place for such a bird.

Thryothorus ludovicianus ludovicianus. Carolina Wren.—On the Palisades, N. J., in greatly reduced numbers (R. A. Herbert); completely wiped out in the New Jersey pine barrens (C. A. Urner); increase noted at Milltown, N. J. (P.

L. Collins). A clean sweep of destruction was noted on Long Island up to the present time. At Orient a bird present in a garden the previous October survived until late February only to be killed by a cat (Latham). G. P. Helme reported one at Orient and Mt. Sinai respectively. In each case the birds were noted at feeding stations. The Carolina Wren had been on a great increase up until the cold winter of 1933-1934. The winter dealt a great blow to this species, and the birds that did not come to the feeding stations must have migrated or died.

Mimus polyglottos polyglottos. Eastern Mockingbird.—1, Saugatuck, Conn., Feb. 3 (Margaret Brooks); Riverhead, all winter on Main St. in the village (Latham); 1, Whitestone, L. I., Feb. 5th and 7th (Mrs. Beals and Reska). The Mocker always calls to mind the deep south, but the extreme cold of 1933-1934's winter dispelled all ideas about this bird's lack of hardiness, for the above three records speak for themselves. Smart and resourceful, never too shy to come to a feeding station in a time of need, it is little wonder that it outlasted the winter.

Dumetella carolinensis. Catbird.—1, Montauk, Feb. 12 (Queens County Bird Club). This lone record, at the wild Montauk Point, is not unexpected, for the many miles of tangled, brushy country might afford shelter to a few dozen of these half-hardy birds. With the abundance of berries and seeds and shelter, the Catbird was in no way put out as were many birds in less wild country where most underbrush is cut out and shelter, therefore, practically absent.

Turdus migratorius migratorius. Eastern Robin.—2, Rye Pond, Feb. 12 (W. F. Dresher); a few birds, Orient, February (Latham); East Moriches, some all through February (Wilcox); 1 found freshly dead, Bronx Park, Feb. 8 (Gibson); Miller Place, all winter in a swamp (G. P. Helme); Alley Pond Sanctuary, all winter (Queens County Bird Club). Robin populations in winter are very irregular, appearing and disappearing, without warning. They seem to prefer the wilder situations to the places where they breed during the warmer time of the year. Being in winter a tree and bush feeder rather than a ground feeder, it was easier to see how they withstood the storms and snow-covered ground.

Hylocichla guttata faxoni. Eastern Hermit Thrush.—1, Forest Hills, Feb. 20 (Queens County Bird Club); 1, Rye Pond, Feb. 12 (Dresher); 1, Mt. Sinai, Feb. 2 (Geo. P. Helme). A surprise, after so many hardy birds deserted the region, was to find this thrush still with us. A bird of the thickets in winter, it still had enough stamina to last that cold wave, and find enough food to keep it alive, a difficult task for ground feeders. Its winter berry eating habit saved its life.

Sialia sialis sialis. Eastern Bluebird.—10, Pound Ridge, in a cedar full of berries, Feb. 22 (Colvin Farley); 1, Bronx Region, February (Allen W. Thomas); Mt. Sinai, dead birds after the storm of Feb. 2; 7 or 8 in a cedar swamp, originally, but only 2 survived the winter (Geo. P. Helme); 200, Rye Pond, Feb. 12 (Dresher). Many individuals of this species evidently suffered and died from the hazardous weather of February.

Dendroica coronata. Myrtle Warbler.—100, Rye Pond, Feb. 12 (Dresher); a few, Wading River, Feb. 18 (Queens County Bird Club); a few Montauk, Feb. 12 (Queens County Bird Club); a few, Jones Beach, Feb. 15 (Breslau and others). Usually a common winter resident, the cold drove these warblers south, to become almost completely absent in this region. The species is therefore placed on the list because the bulk of the birds fled, leaving only a few in the region in February. They always prefer in winter the places where the bayberry is the thickest, but the cold dealt severely with these little birds, even with this plant in large masses in our territory.

Agelaius phoeniceus phoeniceus. Eastern Red-wing.—20, Van Cortlandt Swamp, Feb. 22 (Cruickshank); 13, Kissina Park, wintered through February (McBride). Only in the swamps that had warm water outlets, as were the two where the birds were seen, did the Red-wing find conditions suitable for wintering. A little open water must have been a great help during those cold days of February.

Euphagus carolinus. Rusty Blackbird.—1, Southhold, L. I., Feb. 8th (Latham).

Quiscalus quiscula aeneus. Bronzed Grackle.—1, Van Cortlandt Swamp, Feb. 22 (Cruickshank).

Molothrus ater ater. Eastern Cowbird.—Speonk, Feb. 4, after the first great snowstorm 50 were scratching and picking about in the duck pens there, 29 still present Feb. 20 (Wilcox); Mt. Sinai, Feb. 9, birds were on lawn in front of house (Geo. P. Helme); 50, Westbury, Feb. 4 (Matuszewski). Keeping close to house and farm where food was plentiful, and clearings frequent, this canny bird outlived the cold in fine shape.

Richmondena cardinalis cardinalis. Eastern Cardinal.—1, Creedmore, L. I., Feb. 10 and 11 and (A. and R. Borden). A lone bird that had been around the spot all year and probably fed in and around the houses in that section of Queens where food was plentiful enough at all times. Another individual may have wintered at Eaton's Neck, where observation is infrequent and where it was seen by Matuszewski in July, 1933 and July 10, 1934.

Pipilo erythrophthalmus erythrophthalmus. Red-eyed Towhee.—1, Alley Pond Sanctuary, all through the winter (Queens County Bird Club). This bird was captured in some other part of Queens and transferred to the Sanctuary where it was seen up to March 2nd. Mt. Sinai, in a catbriar up until the first storm in February (Geo. P. Helme). Each winter we find records of a few of these birds which seem hardy enough to withstand any cold, but which barely find enough food to sustain themselves, especially if snow covers the ground.

Pooecetes gramineus gramineus. Eastern Vesper Sparrow.—1, Westbury, Feb. 4 (Matuszewski). In the sheltered nursery, full of groves and sheltered by tangles, this rare winter resident found sufficient protection and food for wintering.

Spizella pusilla pusilla. Eastern Field Sparrow.—Mt. Sinai, all winter, came to feed at the feeding station and came through the winter fine (Geo. P. Helme);

Westbury, in the shrubbery around the farm house, Feb. 4 and 11; Speonk, Feb. 9, the coldest day of the year (—15?F.) (Wilcox). This species wintered with ease, keeping close to the farms and houses in the terrain in which it was found.

Zonotrichia albicollis. White-throated Sparrow.—Orient, all winter (Latham); Lawrence, L. I., in a bushy hedge surrounding a house. A few of these birds probably survived the rigors of the weather by keeping close to houses and the accompanying food.

Passerella iliaca iliaca. Eastern Fox Sparrow.—1, Botanical Gardens, Bronx, fed at the feeding station daily throughout January and February (Gibson, Malley and others). On Feb. 3 at 10:30 A.M. when the temperature was 10°F., it was singing sotto voce from its perch high near the top of a hemlock. There are no records at hand of this species surviving the winter of 1933-1934 without the help of man.

Melospiza georgiana. Swamp Sparrow.—A few, Kissina Park, in swampy woods, Feb. 4 (Queens County Bird Club); 12, Van Cortlandt Park, Feb. 22 (Cruickshank); 1, Speonk, in a swampy inlet, Feb. 9 and 20. It is curious that around New York the same swamps that held Red-wings also had Swamp Sparrows. Why more of these sparrows do not winter is a mystery, for there is plenty of territory around New York suited for its wintering, but even in mild winters only a few are noted.

Observations From Field and Study

A Surprising Encounter—This is a tale of heroic self defense with a happy ending that merits place in the annals of rodent history. I was driving one bright morning in the late summer of 1935, about the Brigantine golf course on the watch for shorebirds. A hunting Marsh Hawk of the year attracted my attention. It had just lit upon a fairway and I idly turned my glass upon it to see whether or not it wore a band. It was not far distant and in plain view with the sunlight playing full on its rich plumage. I saw it suddenly ruffle its neck feathers, and assume an attitude of defense. Looking closely I beheld before it on the ground a mouse. I wish I could have identified the species to give credit where credit is due. The mouse also had assumed a belligerant pose, facing its giant foe, and in the ensuing almost unbelievable scenes proved to be a real, though cautious aggressor. The hawk advanced a step or two watchfully; the mouse lunged at its throat, actually clearing the ground as it sprang to attack. The hawk seemed uncertain what to do. This was apparently an unprecedented experience. It retreated a step, whereupon the mouse turned tail and ran. But cover was far off and it had gone barely two feet before the hawk started in pursuit, hopping along with a half sidewise gait and flapping its wings. It seemed to jump squarely upon the mouse. But the little creature turned just in time, squirmed loose and again faced the hawk. Again it crouched and again and again it sprang at the throat of its towering enemy. Once more the hawk seemed taken aback and uncertain. It stepped clear and again the mouse attempted a wise retreat. But the hawk knew what to do when a mouse scurries to hide. It raised itself from the ground and attempted to snatch its prey. However, the mouse was an apt scholar,—it was learning fast. Again it slipped from the hawk's talons and again it faced its adversary. I did not count the number of times these scenes were re-enacted. It was a long hard fought battle across the close mowed ground. Eventually the mouse gained the sanctuary of a hedge of bayberry bushes and disappeared. The hawk inquisitively followed it in and when I ran to the hedge to observe the finale of this absorbing drama I found the hawk so deeply involved in the hedge in its search for its late opponent that I almost caught it before it could free itself and fly away.—Charles A. Urner.

Bird Mental Capacity—I was especially interested in the summer of 1935 in a family of Robins that nested in an apple tree in the back yard of my home. The female disappeared shortly after the four young were hatched and the male attempted to bring up the family. A protracted dry spell made earth worms scarce and hard to secure, and the Robin was forced to resort to a medium sized grub which seemed quite abundant in the turf beneath the nesting tree—probably the grub of the Japanese beetle. As the young grew the male bird had to work extremely hard to provide sufficient food. I marveled at its endurance, at the little rest and at the modest share of the food procured that it ate itself. I noticed that, with the smaller units of food, it would try to secure two or sometimes three before flying to the nest, but when the hunting was poor it would frequently feed a single grub after a fruitless search of over two minutes for the

second. One young died and was carried from the nest by the parent. The parent would always wait to carry away excrement after the young had eaten, except, and I consider this significant, when only one small grub was fed. Then, frequently, it flew from the nest promptly and with nothing in its bill.

When hunting was poor under the apple tree the male would leave the yard for an adjacent athletic field where the clipped turf offered a large feeding ground. Many nesting Robins hunted grubs there, apparently without definite allotment of territory and with little dispute. The field was also used by many English Sparrows, Starlings and a pair of Chipping Sparrows. Looking out over my back fence across the green of the field I was interested to watch the activities of a Starling which was feeding a brood of full grown young, following after. The Starling would sit on a post overlooking the field. It paid no attention to the English Sparrows or Chipping Sparrows. Their feeding activities intrigued it not one whit. But each time a Robin would stop, look or listen and start to dig for a grub the Starling was at its side, would drive it away and procure the located food for its own young. When more than one Robin stopped and started to dig at the same moment the Starling was greatly agitated. It would run from one to another and occasionally it did little but cause confusion, and nobody ate.

In this Starling's activities we have something very like intelligence. The species has been associated with American Robins only a comparatively few years. The American Robin usually eats earth worms, which Starlings do not specialize on. Yet this Starling discovered that the Robins were at that time eating the same food it was after, that the sparrows were not and that it could save itself much labor and get more grubs merely by sitting on a post and letting the Robins locate the grubs for it. This Starling's activities for a week must have kept the Robin nestlings hungry. However, the Starling stopped feeding earlier in the evening than the Robins and the latter had at least a brief respite from its pilfering.—Charles A. Urner.

The Ornithological Year 1934 in the New York City Region

By Joseph J. Hickey

The chief function of "The Ornithological Year," it was agreed at a Linnæan seminar some time ago, is the preservation of data for the future author of the next *Birds of the New York City Region.* To that end about eight hundred records are herewith presented. In rough terms around 23 per cent of these cover summer or fall rarities and interesting maxima; about 15 per cent are accounted for by spring rarities and maxima, and another 14 per cent by winter rarities and maxima. Only 9 per cent are made up by breeding records. The remainder are what appear to be unseasonable migration dates: 6 per cent early spring, 8 per cent late spring, 10 per cent early fall and 15 per cent late fall data.

During the year about 310 species and subspecies were reported in this region, five of this number being sight records of birds for which we have no locally collected specimens. Six or seven other varieties were also reported from the area north of us or from near-by points on the New Jersey shore. The total number of observers contributing data to the summary was about 120—an increase of 85 per cent over the first tabulation inaugurated by the Society in 1926. Perhaps the chief usefulness of these annual summaries lies in the fixing of responsibility for tracking down records made by the 95 per cent of New York bird students who do not keep note-books. It seemed rather senseless to us to drag out of busy people much data that we knew would inevitably be preserved. On the other hand, local observers who do not dignify their field work with careful and complete note-taking must be contacted at some time or another. The most difficult task has been the evaluation of notes generously sent to the compiler by bird students whom he knew only by name. In several cases we have quoted all the details of an observation so that the reader might judge the record himself.

Notwithstanding many meteorological averages that closely approximated normal, the year 1934 was phenomenal for several extraordinary features. There was severe cold and much snow late in winter, intense heat in early summer, a cool and rainy late summer and a mild, dry autumn. Most waterfowl were eventually reported in

fairly good numbers. Brant were apparently recovering from their discouraging low in 1933, but the Redhead was definitely in a precarious spot. Gulls and terns were noted in unusually large numbers. Shorebirds were much the same as in 1933. The phenomenal heron incursions of other years were not repeated but small, satisfying numbers of each species did come north. Raptores showed a slight increase.

During the year Hempstead Lake, Brookhaven, Montauk and Barnegat received chief attention in the search for winter birds. Jones Beach remained prominent for its ducks and shorebirds, and Mill Neck and Troy Meadows remained the best rail swamps. The Ramble in Central Park, the Botanical Gardens in The Bronx, Troy Meadows in New Jersey and Kissena Park on Long Island shared the warbler spotlight while Oakwood Beach on Staten Island, Brigantine and Beach Haven on the Jersey shore all remained much the same as did the Tuckerton marshes. The great mud flats near the Newark Airport finally succumbed to the tenacity of the New Jersey Mosquito Commission. Practically all the waders were, however, recorded on the burnt meadows and about the ponds toward Elizabethport. New causeways on the outer strip at Jones Beach made accessible a superb tidal flat at Oak Island Beach and apparently increased the possibilities for seeing Longspurs and Buntings. The artifically created Parsippany Lake received more attention and produced some unique inland water bird records for New Jersey. New York City parks continued to support a flora remarkable for its general propensities to grow downward rather than upward. A new bird sanctuary was begun in Central Park and the Alley Pond sanctuary in Queens was continued. Elsewhere in the city most of the ruthless damage done to shrubbery abated. The magnificent warbler vegetation of Van Cortlandt Park disappeared for the most part in 1933. Although most of it was effectively ditched last spring, the unique cat-tail swamp there managed to support a pair of Least Bittern whose home life remained throughout the summer a precarious exposure to the sticks and stones of Yosians and similar so-called naturalists who were anxious to "scare 'em up."

Although 1933 closed with a snow storm and a terrific cold snap (—6°), *January* was relatively mild and unspectacular. Since 1927 this month has had each year a mean temperature above normal. Once

again the same half-hardy species lingered. Longspurs began gradually to thin out along the coast where they had been generally distributed at the close of 1933. The white-winged gull invasion remained one of the best in the last ten years. Similar hold-overs from the fall were the Purple Sandpipers on the shore at Montauk and on the Lido Breakwater at Long Beach. Although northern finches were numerous in New England and although practically all these species were reported here in December, January records of this group consisted chiefly of casuals or stragglers. Just to the north of us, however, where only infrequent observation occurs in the rural communities, several large flocks of Evening Grosbeaks were noted. In the Boston region Harlequin Ducks appeared in December and an unusual flight of *Alcidae* was concentrated along the coast. To the south of us around Philadelphia Goshawks, White-winged Crossbills, Evening Grosbeaks were observed in numbers. In our region the Grosbeaks were noted as above, the *Alcidae* only casually, the Crossbills only as stragglers and the Goshawks not at all. On the twentieth a lone Harlequin appeared at Montauk. Fresh water ducks were present in much the same numbers as in the last few years. European Teals at Hempstead Lake, Wood Ducks in the Bronx, European Widgeon and the like were all noted. This rather heterogeneous picture of the New York Region and the Atlantic Seaboard was the opening act of one of the most amazing winters we have had in recent years.

On the twenty-eighth of January the thermometer registered 57°. In the ensuing eighteen hours the mercury dropped 52° and some never-to-be-forgotten weather followed. *February* had a mean temperature of 19.8°, the lowest February on record. As the ponds and lakes froze over, heavy snows blanketed the countryside for the entire month. Whereas the snowfall in January (0.2 inches) was the third lowest on record, that of February (30.1 inches, three times normal), was the greatest in forty years. When a mercury reading of —14° on February 9 broke the all-time low for New York City, readings of —20 to —30 were common on the coast and in the rural sections of the region. By this time practically every body of water here was solid except a few channels, some inlets and the ocean itself. Freshwater ducks, like the Hooded and American Mergansers, took to salt water.

Long Island Sound almost froze over as far east as the Connecticut River. Near Fort Schuyler, Scaup piled up into a dense mass estimated at 50,000. Exhausted birds were picked up on nearby beaches.

Around New York City emergency measures provided food for hundreds (or thousands) of ducks that might have starved to death. In Bronx Park 7 Green-winged Teal, 6 Pintail, 18 Wood Ducks, 7 Baldpate and a Hooded Merganser all survived by mingling with the clipped fowl (Drescher). At Coney Island an ice pack of several hundred feet crunched against the beach, while the whole bay between Rockaway Point and Manhattan Beach was one impassable jam. Here thousands of Scoters were too far out to be identified; those close-in twice showed the same unusual ratio:—about four Surfs to each White-winged, with only a scattering of American Scoters. Kittiwakes, small flocks of American Mergansers and Canvas-backs, both Eiders and both Cormorants were all seen along the usually barren shore from Coney Island to Manhattan (Cruickshank and others). In the Barnegat area ducks that elected to remain were living on the vegetation and shellfish adhering to the stone jetties. These included many Scaup and Scoters, Black Ducks, Canvas-backs and an odd Redhead (Urner). Barnegat Bay did not open until the 15th or 16th of March while Shinnecock and Mecox out on Long Island were frozen until the 18th of March. Only the canals there between the bridges at Quogue and Westhampton Beach remained free of ice. In the tiny open spot at Westhampton on March 2 were 10 Canada Geese, 200 Black Ducks, 3,000 Scaup, 2 Redheads, 50 Canvas-backs, 12 Pintails, 25 Golden-eyes, 15 American Mergansers, 50 Red-breasted Mergansers, 15 Holboell's Grebes and 5 Horned Grebes (Wilcox). Here the water fowl were fed corn and the mortality was small.

The terrific cold spell froze over Lake Ontario about February 11th—the first time this had happened in about sixty years. On the 12th Holboell's Grebes appeared in Lake Cayuga and, when this body of water froze over a few days later, Grebes were being picked up dead or alive and carried to the university there by towns-people and farmers [*vide* Miss A. M. Heydweiller]. In New Jersey the first Grebe movement reported was a Holboell's found alive on the hill behind Princeton on the 18th (Rogers). Of a trip to Montauk on the

22nd, Leo Breslau writes: "The first sight as I stepped from the train was that of 14 Holboell's Grebes just alive enough to waddle in the town street. Mr. King . . . told me of hundreds of dead Grebes, a flock of 12 Dovekies on February 21, a few Auks and Murres on the 22nd A.M. (before I arrived) flying over the town. . . . I counted 225 dead Holboell's Grebes—their frozen bodies all over Montauk, but concentrated on the ocean beaches . . . 350 dead Horned Grebes all concentrated on the sound side. Many Grebes were seen alive but in the most weakened condition that I have ever observed: 150 Holboell's, 300 Horned Grebes." Up at Westbury on the Rhode Island—Massachusetts line, Ames found enough dead Grebes strewn along the beach to have filled a dump cart (*vide* Peterson). This dispersal of Holboell's Grebes was apparently due to the extraordinary ice conditions inland. The birds scattered southward along the New Jersey coast and were noted in large numbers both inland and on the shore of New England. The mortality due to starvation, ice, or oil, must have been terrific. (See also *Bird-Lore,* v. 36, no. 3, May-June, 1934, pp. 178-80.) The climax of the winter occured near the end of the month when lone Harlequins scattered along the coast down to the Manasquan and the Shark River in New Jersey after a N. W. gale of 51 M. P. H. and a near occurrence (6°) of more sub-zero temperatures. All February records of half-hardy species have been omitted from the annotated list appended and the reader may study the effects of the winter on these birds in the paper prepared by Walter Sedwitz elsewhere in the Proceedings.

March provided a mean temperature that was practically normal. The snowfall was, however, the greatest in any March since 1917—a total of 8.5 inches. Out on eastern Long Island, snow remained on the ground until the 14th and in some spots even until the 20th. The result was an anomalous migration which seems almost weird in retrospect. Land birds were late in arriving but not unprecedentedly so. The first migrant in Central Park was the Fox Sparrow (March 2 as against February 26th last year and snow 9 inches deep). In The Bronx Grackles appeared on the 3rd and became common on the 18th; Robins were first seen on the 7th but did not become common until April 1st. During this very time the relentlessness of the winter had

not relaxed its grip along the coast. Barnegat Bay still had some ice on the 17th but Shinnecock and Mecox had only a few open spots on the 25th.

At Montauk on the 3rd 80,000 Scoters were estimated to be present. Some 10,000 of these were identified as White-wingeds, about 1,000 were Americans and only 500 were Surfs—a ratio little typical of normal conditions at the Point and suggesting that the birds came from Long Island Sound or the coasts of New England.

It is practically impossible to form any estimate of how many ducks perished during the winter. The biggest numbers of dead were found around the beginning of the month, but few observers kept notes on conditions at that time. The following counts cover (1) about two miles of beach at Montauk on Feb. 13 (Bohn), (2) on March 4th (Farley) and (3) on the 18th (Hickey); (4) four miles of beach south of Seaside Park on the 17th and (5) two miles of beach near Beach Haven Inlet, plus a small section of salt marsh south of Beach Haven (Rogers and Urner):

	(1)	(2)	(3)	(4)	(5)
Common Loon	—	1	1	2	1
Holboell's Grebe	—	18	7	33	2
Horned Grebe	—	6	5	12	2
Razor-billed Auk	1	—	—	—	—
Brunnich's Murre	1	—	1	—	—
Dovekie	—	—	—	4	—
Black Duck	—	—	—	4	13
Canvas-back	—	—	—	—	4
	(1)	(2)	(3)	(4)	(5)
Scaup	—	1	3	1	—
Redhead	—	—	—	—	1
American Golden-eye	—	—	1	—	1
Old-squaw	—	2	—	—	—
White-winged Scoter	185	1-2 doz.	28	7	1
Surf Scoter	1	—	1	3	1
American Scoter	3	sev.	5	—	—
Red-breasted Merganser	1	1	2	—	—
Great Black-backed Gull	1	—	—	—	—
Herring Gull	1	sev.	sev.	20	5
Ring-billed Gull	—	—	—	1	—
Starling	—	—	—	—	1
House Sparrow	—	—	—	—	1

On February 22 Breslau estimated about 400 dead Scoters along the entire shore line at Montauk. Of course a small per cent of the above counts represents the normal numbers of dead birds one always

finds on our beaches. Many specimens were brought home from Montauk, destroying the accuracy of any cumulative count. Autopsies performed by Dr. W. H. Wiegmann on two such birds from the Point disclosed the following: the entire stomach contents of a Greater Scaup contained nothing but thirteen pebbles; that of a White-winged Scoter contained nothing but ten pebbles. Both birds were but slightly polluted with oil.

By *April* spring was but a week or so late. The last killing frost, March 29, was recorded 13 days ahead of normal. The maximum temperature of the month, 75° on April 2nd, helped finally to clear the bays and ponds of ice. By the middle of the month land migrants were at last arriving in normal fashion. It was 34° on the 28th and six successive nights of fog, rain and adverse winds following the 29th checked all movements of warblers and kindred species.

May opened with local breeders slowly coming into Litchfield County and a complete drouth of migratory bird life around New York City. On the fifth (when a major wave was occurring around Philadelphia) the vacuum here was beginning to crack. A spectacular wave followed on the 6th when, with few exceptions, most of the species of Group I arrived in a striking wave distributed over western Long Island, New York City, and northeastern New Jersey. Practically all the birds in Groups II and III were recorded in the region but always in confused varieties or combinations which differed widely at each migration station. This wave was less pronounced northward in Westchester County and absent entirely in Litchfield County where the first wave did not occur until the tenth. It seems useless to amplify on the remainder of the month. The land bird migration in Central Park seems to have followed the group arrivals noted by Griscom in 1919. In this same locality one observer reported flights on the 10th, 20th and 21st; another on the 16th, 18th and 21st. When such contradictory conclusions are reached by two men after daily observation in the same area, it will be seen how relatively large is the human factor in migration summaries of this sort. In passing one cannot refrain from mentioning one of the quaintest notes of the month. On the 20th along the Hackensack River in New Jersey, Messrs. C. K. Nichols and Walsh checked off in a short time no less than 35 species in a single tree. Like

the story of F. E. Watson chasing an auk, this type of sport is so nearly unique that it deserves permanent record.

Shorebirds, whose early flights of the last few years have coincided with their recent tendencies to linger here in winter, did not come through until well into May. Heavy movements of these birds were observed from the 15th to the 20th but several species (Knot, White-rumped) did not reach their maximums on Long Island until late in *June*. Just at the time when observation is most infrequent on the coast some shorebirds may have come through with such rapidity as almost to escape notice. That the Knot flight was missed on Long Island is indicated by the New Jersey counts which showed a May 21 peak. Most of the breeding records [e.g. Veery in Ocean County, Clapper Rail in The Bronx] were purely of local interest. The appearance, however, of 3 Black Skimmers on Great South Bay on the 18th heralded one of the most satisfying events of the year. Scattering birds were observed for some time subsequently on Great South Bay, and finally on August 18th a nest containing young was found by Vogt in Gilgo State Park (*Auk*, v. 51, no. 4, p. 521, Oct., 1934). This constitutes the second breeding record in modern times for Long Island and New York State. On June 21, almost six years to the very day after a similar bird had been found in Central Park, a Purple Gallinule was discovered in the mosquito ditches at the Jones Beach Bird Sanctuary. A thunder storm on the 19th was accompanied by a south-easter whose maximum velocity was 38 miles per hour in New York City. This may have been the cause of this southern visitor's occurrence on Long Island. It is interesting to note, however, that the species was recorded in Cape May County on May 28 and along the Delaware River in Pennsylvania on June 15 (*Auk*, v. 51, no. 4, Oct., 1934).

Shorebirds remained well into June and even into *July*. In the past there has always been a definite break between the northbound and southbound migrations of each of these species in our region. To-day with a few species this margin has almost vanished. J. L. Ewards agrees with Wm. Vogt that waders summered here in 1934 and C. A. Urner believes that this condition will become more pronounced in certain species as shorebirds (and observers) increase. J. T. Nichols, how-

ever, holds out the hypothesis that daily observation will continue to show a lapse between departure and arrival on each species. In 1934 practically daily observation was obtained by only one observer for the critical period under discussion. This was by Mayer at Idlewild Beach at the western end of Long Island. His interesting results appear in detail in the annotated list appended.

By *August* it was apparent that the southern heron flight was very light. On Long Island, American Egrets seem to have outnumbered the Little Blues by about four to one while Snowy Egrets were about half as common as the latter. There was, on the other hand, a fair sized number of Yellow-crowned Night Herons reported. Despite high temperatures which made August the hottest on record but one, the mud flats and beaches received dozens of observers each week-end. Where a decade ago a mere handful of enthusiasts made the awkward boat trip each summer to Oak Island or Jones Beach, crowded motor cars now raced over wide causeways to these favored localities. A proportional increase in "rarities" has inevitably resulted. In the face of this, a comparative analysis of the early water bird migration on Long Island seems almost futile. A summary of the New Jersey shorebird flight by C. A. Urner appears elsewhere in this publication.

September was notable chiefly for a severe wind and rain storm, the result of a near-by hurricane. The rain on the 8th was 4.92 inches, the greatest of the year for a twenty-four hour period; the wind on this day did not attain any marked velocity until 6 P.M. but at its height, sixty-five miles an hour (north), was not only the greatest noted here during the year, but also the greatest ever recorded in September by the local weather bureau. As a result, some 110 Skimmers were seen the next day at Jones Beach, and the species scattered eastward reaching Orient on the 12th. Scattered too were numbers of Forster's Terns and much more rarely the Gull-billed Tern.

As usual the fall migration of warblers and other land migrants received little attention. Geoffrey Carleton, however, furnishes us with a practically complete account of summer conditions in the Ramble. His first transient was a Kingfisher on July 19. The first small wave, August 13, was followed by flights of fair size on August 21 and 29-30.

The warm foggy night of September 6th brought a wave of many warblers into the park the next day along with the Philadelphia Vireo and the Gnatcatcher. Further flights were observed on the 19th and 28th. The first week of October was continuously good and after it the warbler migration practically ceased.

October counts of ducks were somewhat distorted. The long hunting season destroyed all chances of good fall maximums at Troy, warm weather apparently affected the early numbers at Barnegat while other places like Hempstead and Jones Beach had fine numbers of certain species, particularly Green-winged Teal. A fine flight of Rough-legged Hawks began around the early date of October 12.

November was remarkable for the unprecedented number of lingering shorebirds, no less than twenty species (counting one cripple) being present in this region and on the New Jersey coast. Longspurs came down in big numbers although the new unusual maxima may be due to the recent accessibility of favored areas. The Shrikes were well distributed particularly on Long Island. A small but appreciable flight of Snowy Owls eventually got as far south as Staten Island. Most of the northern finches were unreported but the Purple Sandpipers returned again to Long Beach and the Jersey coast. European Teals once more favored Hempstead Lake with their presence. The first killing frost in Central Park was noted on November 3. This gave a plant growing season of 219 days, 34 more than last year and 11 more than normal. A gale from the northwest set a new November record here (61 miles per hour on the 1st) and may or may not have caused the extraordinary appearance of Blue Geese on the Atlantic seaboard during the month.

December found not only King Eiders at Montauk but American Eiders as well. On the 1st a 53 mile gale from the south drove a few Dovekies onto the beaches of Long Island. White-winged gulls were noted only infrequently. Christmas censuses were the ultimate that time, effort and money could produce. Unfortunately the contingencies of space forbid here the detailed statistical comparison with other years that these 1934 censuses deserve. About 127 varieties were recorded in the New York Region, and 16 more were also reported from Ocean County, N. J.

In studying this summary of the ornithological events of the year, the reader will undoubtedly gain some impression of the numerous contributors whose notes have given the paper whatever value it has. Many people, however, went out of their way to make the compiler's task a lighter one. Dr. Mayr inaugurated an index system which we found invaluable in keeping records; Mr. Cruickshank gave us practically all our information on the Grebe flight; Mr. Malley compiled complete data on the spring migration in Bronx Park; Mr. Rich listed all the spring arrival dates in The Ramble; Mr. Vogt made completely accessible the correspondence on "The Season"; Miss Brooks undertook, at our behest, daily observation on spring ducks and waders at Old Greenwich; and Mr. Carleton gave us the most complete information on the fall movement of warblers. A number of people, like Messrs. Helmuth and Latham, promptly and generously answered our letters with clear, comprehensive reviews of their observations. Active observers, like Messrs. Sedwitz and Urner, we have bothered time and time again for information. Theirs and many others, has been a cheerful willingness to make this report as complete as possible.

Gavia immer immer. Common Loon.—Old Greenwich, May 29 (M. Brooks); 2, Moriches Inlet, Aug. 11 (Wilcox).

Gavia stellata. Red-throated Loon.—Easthampton, Aug. 29-30 (W. T. Helmuth III).

Colymbus grisegena holboelli. Holboell's Grebe.—20 flying, "The Farms" fishing bank, Jan. 7 (Matuszewski); 1, Princeton, Feb. 18 (Rogers); 50, Long Beach, Feb. 22 (Sedwitz); Parsippany Lake, April 8 (Edwards); Old Greenwich, May 18 (M. Brooks); 1 in full breeding plumage, Port Newark, July 8 (Eaton, Rose); see also remarks by Breslau and others in summary previously given.

Colymbus auritus. Horned Grebe.—70, Old Greenwich, April 18 (M. Brooks); 48, Fort Salonga, April 28 (Bohn).

Podilymbus podiceps podiceps. Pied-billed Grebe.—Brookhaven, Jan. 27 (Astle and Matuszewski); Bronx Park, May 7-8 (H. Lunt and G. J. Schmidt); pair bred near Somers, N. Y. (J. F. and R. G. Kuerzi); adult with young bird, Millneck, July 2 (Bohn, Walker); Idlewild, appeared on July 24 and remained (Mayer); 4, Mecox Bay, Aug. 15 (Cobb, Wilcox).

Puffinus griseus. Sooty Shearwater.—2, Jones Beach, May 19 (Carleton, Sedwitz); 3, Easthampton, May 20 (Helmuth); 2, two to five miles out from Moriches Inlet, Aug. 25 (Cobb, Wilcox); 2, Easthampton, Sept. 7 (Helmuth).

Puffinus gravis. Greater Shearwater.—3, Jones Beach, May 19 (Carleton, Sedwitz); 2, Aug. 19 (Cruickshank, Carleton, Sedwitz), and 1, Sept. 2 (Cruick-

shank, and J. and H. Murdock); 6, Easthampton, Sept. 7 (Helmuth); Oak Island Beach, Sept. 9 (Cruickshank, J. and H. Murdock).

Puffinus diomedea borealis. Cory's Shearwater.—7, two to five miles out from Moriches Inlet, Aug. 25, and 4, Aug. 31 (Cobb, Wilcox); 23, Easthampton, Sept. 7 (Helmuth); 3, Sagaponack, Sept. 16 (Breslau, Carleton, Helmuth, Sedwitz, Wolfram).

Oceanites oceanicus. Wilson's Petrel.—40, Jones Beach, June 12, and 100 well distributed off Rockaway Breakwater, June 13 (Matuszewski); 14, Easthampton, Sept. 7 (Helmuth).

Moris bassana. Gannet.—6, "The Farms" fishing bank, Jan. 7 (Matuszewski); Long Beach, Feb. 4 (Janvrin); Sagaponack, Sept. 16 (Breslau, Carleton, Helmuth, Sedwitz, Wolfram); 25, Montauk, Dec. 29 (Sedwitz).

Phalacrocorax carbo carbo. European Cormorant.—Manhattan Beach, Feb. 10 (Cruickshank); Dr. Helmuth reports 16 at Montauk, May 20, 2 at Easthampton, May 21, and 1 at Montauk, July 4; 2, off Barnegat, Dec. 23 (Evans, Walsh).

Phalacrocorax auritus auritus. Double-crested Cormorant.—5,000, Jones Beach, April 22 (Vogt and others); 75, flying, Bear Mt., May 19 (Kritzler); Jones Beach, July 1 (Vogt); 1 flying over Central Park, Aug. 2 and 2 over the George Washington Bridge, Aug. 6 (Helmuth); Manhattan Beach, Jan. 15 (Wiegmann); 2 in the same general area, Feb. 10, and 1 dead on the beach at Coney Island about Feb. 12 (Cruickshank).

Fregata spec. Man-o'-war-bird.—"I give this record for what it may be worth; I myself believe it to be authentic. On September 5, my son, who has seen Frigate Birds in Florida, came to me in great excitement to tell me of having seen a large, black, long-winged and fork-tailed bird soaring across the sky at Easthampton. The bird was at a great altitude, almost a speck in the sky, and sailed northward without moving its wings. My son pointed out the bird to a friend who agreed in the above description. Later in the same day, Mrs. Walter Keck, of Easthampton, told me of seeing two large birds sweeping eastward over the ocean. She saw them from her porch, which faces the sea, and they were very large, coal black, and had the longest thinnest wings of any bird she had ever seen. These wings they scarcely moved as they flew. They were so unusual that she at once sent for me to tell me about them."—Dr. Helmuth.

It is always of interest to check the weather phenomena attending records of such distant visitors. A tropical disturbance was reported about 500 miles east of Jacksonville on Sept. 1 accompanied by squalls, winds and gales over a considerable area; this moved northward and by the third had markedly decreased.

Ardea herodias herodias. Great Blue Heron.—Orient, Jan. 22 (Latham); Idlewild, June 5 (Mayer); 71 on the beach side of Shinnecock Bay, Quogue to Southampton, Sept. 6 (Wilcox).

Casmerodius albus egretta. American Egret.—Jones Beach, April 25 (Vogt) to May 11 (Mayer); Elizabeth Reservoir, May (Urner); Mastic, June 1-3 (W. F.

and J. T. Nichols); Troy, June 10 (Knoblauch); 21, Tuckerton, July 16 (Brown); Jones Beach outer strip, July 20 (Vogt) to Sept. 30 (Vogt), maximum 18 on Sept. 9; Orient, Aug. 2 to Sept. 4 (Latham); Speonk, Aug. 25 to Sept. 9, maximum 3 (Wilcox).

Egretta thula thula. Snowy Egret.—Tuckerton, Aug. 11 (Urner); Jones Beach, Aug. 28 (J. and R. Kuerzi, Vogt) to Sept. 9 (Matuszewski and others), maximum 3.

Florida caerulea caerulea. Little Blue Heron.—Hempstead Lake, April 18-19 (J. L. Chapin, Terry); Rye, July 22 (Cruickshank); Easthampton, July 29; 6, Wanaque Reservoir, N. J., Aug. 14, and 1, Montauk, Aug. 18 (Helmuth); 2, Bayside, Sept. 2-16 (Rordan); Jones Beach outer strip, Sept. 9-30, maximum 3 (Breslau, Sedwitz and others); Orient, Sept. 16 (Latham).

Butorides virescens virescens. Eastern Green Heron.—Central Park, April 21 (M. Rich and others); Jamaica South, complete set of eggs, May 27 (Mayer); Central Park, Aug. 7 (Sedwitz); Bronx, Oct. 16 (Malley).

Nycticorax nyticorax hoactli. Black-crowned Night Heron.—2, Shinnecock, Jan. 20 (Wilcox); Idlewild, 4 wintering birds increased to 20 on March 5, later to over 50 (Mayer); 25 pair, Westhampton, May 17 (the eighth colony now in the county—Wilcox); 1,000 nests, Great Neck, where the colony has existed for many years (M. V. Beals).

Nyctanassa violacea violacea. Yellow-crowned Night Heron.—Mill Neck, May 5-6 (Mr. and Mrs. Rich); Ozone Park, May 13 (Lind); Jamaica South, May 13-14 (Mayer); Bayside, May 16 (Bohn); Mattituck, June 5-July 2, two birds (Latham); Bronx, July 27 to Aug. 20 (Malley); Newark marshes, Aug. 11-12 (Urner, Sedwitz); Moriches Inlet, Aug. 21 (Wilcox); Jones Beach, Aug. 26 (Vogt) to Sept. 16 (Moore), maximum 2 birds.

Botaurus lentiginosus. American Bittern.—Speonk, Jan. 14 (Wilcox); Troy, March 29 (Walsh); 2, Central Park, Aug. 29 (Carleton); Idlewild, Nov. 22 (Mayer).

Ixobrychus exilis exilis. Eastern Least Bittern.—Nest, Van Cortlandt Park, June 2 (Cruickshank).

Sthenelides olor. Mute Swan.—Piermont, flying up the river, Dec. 23 (Edwards and others).

Cygnus columbianus. Whistling Swan.—Lake Como, N J., Nov. 11 (Rebell, Urner); Montauk, killed striking wires, Dec. 28 (Walker, Wilcox).

Branta canadensis canadensis. Common Canada Goose.—Union Square, N. Y. C., 6 flying over, March 5 (Staloff); Old Greenwich, May 18 (M. Brooks); Easthampton, "flying strongly over ocean, may have been feral," Aug. 4 (Helmuth); 20 honking and going westward, Easthampton, Aug. 29 (J. L. Helmuth).

Branta bernicla hrota. American Brant.—5, Mecox Bay, May 20 (Helmuth); 2, Gilgo, June 7 (Noble, Vogt); 4,000, Shinnecock, Nov. 25 (Breslau, Carleton, Johnson, Sedwitz).

Chen hyperborea. Snow Goose [subspecies?].—2, Barnegat, Oct. 14 (Urner); Jones Beach outer strip, Nov. 4 (Astle, Hickey, Matuszewski) and Nov. 18 (Vogt); Tuckerton Marshes, Nov. 11 (Rebell, Urner); 2, Mecox Bay, Nov. 27 (Helmuth). Six immature birds arrived at the Oceanside Country Club, Long Beach, Oct. 7. They soon learned to like grain, were eventually reduced (by hunters?) to four, and occasionally wandered off. When they returned after the longest of these intervals during the fall, about ten days, they were unusually hungry and greedily raced toward the food thoughtfully provided for them by Mr. Darmstadt, who discovered their first presence on the grounds; seen by scores of observers and still present Dec. 31; track measurements corresponded to those of *atlantica,* the Greater Snow Goose (Farley, Matuszewski). Birds at Tuckerton, Nov. 11, showed so much greater span than Blue Goose with which they were associated that they were probably Greaters.

Chen caerulescens. Blue Goose.—Small flock of 4, one of which was shot, Shinnecock Bay, Nov. 1 or 2 (Cottam *vide* Leroy Wilcox); 2 flocks, the largest containing 9 birds, Moriches Bay off Swan Island, Nov. 8 or 9 (Carlos Wilcox); 2, Tuckerton Marshes, Nov. 11 (Rebell, Urner); Orient, Nov. 19 (Latham); also 2, Shinnecock Bay, either this species or the last, Nov. 25 (A. M. Thomas); evidences of this unusual deviation from the normal migration route of this species were also noted elsewhere in the east.

Mr. Cottam writes that at least four birds were reported as killed early in November by gunners (Dorsey Carter, Everett Talmadge, Samuel Lane) and that another bird was also reported shot on Mecox Bay early in December. Records of this species on the Atlantic seaboard during the fall ran from Maine down to South Carolina. At this writing the chronology of this extraordinary movement is unavailable and a proper correlation with meteorological phenomena is impossible. Late in October a disturbance of great intensity north of Lake Erie moved toward the mouth of the St. Lawrence River causing strong northwest winds and gales from Boston to Hatteras. A wind squall here on Nov. 1 was the highest ever recorded locally in November.

Anas rubripes rubripes. Red-legged Black Duck.—Idlewild, 76 remained until April 28; arrived in the fall, Sept. 27 (Mayer).

Anas rubripes tristis. Common Black Duck.—Oakland Lake, 9 eggs, April 22 (Scott); Jamaica South, 10 eggs, May 6 (Mayer).

Chaulelasmus streperus. Gadwall.—4, Brookhaven, March 25 (J. F. Kuerzi, Potter, Street and others); 4, Hempstead Lake, Sept. 23 (Matuszewski); Jones Beach, Oct. 28 (Sedwitz); Brookhaven, 10 on Nov. 25 (Breslau, Carleton, Johnson, Sedwitz); 42 on Dec. 23 (Wilcox).

Mareca penelope. European Widgeon.—Hempstead Lake, 2 on Jan. 28 (Cruickshank, Cobb, Hickey, J. and H. Murdock), remained until April 18 (Mayer), returned Oct. 7 (Chapin, Matuszewski) and two drakes on Dec. 9 (Berliner, Sedwitz); Jones Beach, five spring records, March 23 to April 29 (Vogt and others), maximum 2, and fall records, Oct. 7 to Nov. 25 (Vogt); Brookhaven, definite winter data lacking, 2 on March 25 (Potter, Street and others), returned Sept. 22 (Sedwitz); elsewhere only one record, New Inlet, Sept. 22 (Sedwitz).

Mareca americana. Baldpate.—Idlewild, May 13 (Sedwitz).

Dafila acuta tzitzihoa. American Pintail.—150, Jones Beach, Feb. 16 (Vogt); Old Greenwich, May 5 (M. Brooks); Shinnecock Bay, May 19 (Sedwitz).

Nettion crecca. European Teal.—Hempstead Lake, 2 drakes wintered, last seen April 15 (Kritzler, McBride, Scott), returned Nov. 29 (Rordan); Jones Beach, April 3 (Vogt).

Nettion carolinense. Green-winged Teal.—Jones Beach, May 13 (Vogt); Idlewild, Aug. 13 (Mayer); 200, Jones Beach, Nov. 17 (Vogt); 57, Hempstead Lake, Dec. 6 (Mayer).

Querquedula discors. Blue-winged Teal.—Troy, nest of 12 eggs, May 13 (Chalif); 2, Mecox Bay, May 20 (Helmuth); pair, Jones Beach, until June 15 (Vogt); Idlewild, July 8, Aug. 11-12 (Mayer); Bronx, July 31 (Malley).

Spatula clypeata. Shoveller.—Hempstead, Jan. 20 (Astle, Matuszewski); Brookhaven, March 18 (Cruickshank, Cobb, Hickey, J. and H. Murdock), March 25 (J. F. Kuerzi and others); Newark Marshes, Sept. 30 (Rebell).

Aix sponsa. Wood Duck.—Westbury, banded bird weakly flying about, Feb. 10 (Matuszewski); Montauk, Feb. 22 (Breslau); Troy, 13 eggs in nest May 13 (Cruickshank), young June 16 (Brown); Barnegat region, Dec. 23 (Evans).

Nyroca americana. Redhead.—Jones Beach, April 27 (Vogt); Old Greenwich, April 23 (M. Brooks); Jones Beach, Oct. 14 (Sedwitz); rare and decreasing.

Nyroca collaris. Ring-necked Duck.—Jerome Reservoir, Jan. 20 (Cruickshank); Hempstead, Jan. 21 (Breslau, Sedwitz); 9, Cross River, Westchester Co., Feb. 12 (J. F. and R. G. Kuerzi); 2, Alley Pond Creek, March 11 (Scott); Parsippany Lake, 85 on April 8 (Eaton, Edwards), 22 on April 22 (Mr. and Mrs. Rich).

Nyroca valisineria. Canvas-back.—Central Park, March 10 (Carleton); Parsippany Lake, April 29 (Cobb, Cruickshank, J. and H. Murdock).

Nyroca marila. Greater Scaup Duck.—50,000 (est.), East River between Fort Schuyler and Clason Point, Feb. 11 (J. F. and R. G. Kuerzi); Central Park, March 5-11 (Carleton); 1 (sp.?), Jones Beach, May 30 (Vogt).

Nyroca affinis. Lesser Scaup Duck.—Manhattan Beach, Feb. 17 (Cruickshank); 7, Parsippany Lake, May 13 (Edwards and others); pair, Passaic River, June 17 (Brown, Edwards); Rye, Dec. 23 (Herbert and others).—Also the follow-

ing reported without details: 2, Old Greenwich, May 29-30 (M. Brooks); Idlewild, July 14 and Aug. 11 (Mayer).

Glaucionetta clangula americana. American Golden-eye.—3, Old Greenwich, May 28 (M. Brooks); Jones Beach, May 28 (Vogt); Hempstead Lake, Oct. 28 (Chapin, Matuszewski).

Charitonetta albeola. Buffle-head.—2, Old Greenwich, April 20 (M. Brooks).

Clangula hyemalis. Old-squaw.—Old Greenwich, lingered until June 23 (M. Brooks); Suffolk Co., July 23-27 (J. L. Chapin); cripple, Oakwood Beach, Aug. 12 (Carleton, Cruickshank, J. and H. Murdock, Sedwitz).

Histrionicus histrionicus histrionicus. Eastern Harlequin Duck.—Montauk, drake, Jan. 20 (Wilcox) to March 4 (Drescher, Farley, Herbert, Hickey, Kessler); Lake Montauk, female, Feb. 22 (Breslau); Jones Beach, Feb. 25 (Vogt); Shark River, N. J., Feb. 25 (Brown, Eaton, Edwards, Urner); Manasquan River, N. J., Feb. 25 (Urner) to March 3 (Brown, Edwards, J. F. and R. G. Kuerzi, Mayr). Unprecedented numbers were also seen in Massachusetts. A disturbance of great intensity centered off the southern New England coast on Feb. 20th; this had increased by the 23rd and moving in a north-northeasterly direction resulted in strong northeast winds and gales.

Somateria mollissima dresseri. American Eider.—Brighton Beach and vicinity, Feb. 3-17; Long Beach, Feb. 18-25 (Cruickshank and others); Montauk, 2 on Dec. 16 (Helmuth, Sedwitz and others); 1 on Dec. 23 (Breslau, Carleton, Lind, Sedwitz).

Somateria spectabilis. King Eider.—Montauk, 8 on Feb. 23 (Breslau, Sedwitz), 1 on Nov. 11 (Breslau, Carleton, Johnson, Sedwitz), 9 on Dec. 16 (Helmuth, Sedwitz and others); Orient, Nov. 30 (Latham); Manhattan Beach, Jan. 15 (Wiegmann), 2 same general area Feb. 3, 1 plus 2 sp., Feb. 17 (Cruickshank); Long Beach, Feb. 25 (Cruickshank and others).

Melanitta deglandi. White-winged Scoter.—80,000 (est.) Scoters mostly this species, Montauk, March 4 (Drescher, Farley, Herbert, Hickey, Kessler); 150, Saugatuck Shores, Conn., May 27 (Farley, Hickey); Gilgo, June 13 (Matuszewski).

Melanitta perspicillata. Surf Scoter.—Jones Beach, July 22 (Jaques, Vogt).

Oidemia americana. American Scoter.—2, Bayside, Aug. 18 (Bohn); Gilgo, Aug. 26 (Breslau, Cruickshank, Herbert, J. F. and R. G. Kuerzi, Sedwitz).

Erismatura jamaicensis rubida. Ruddy Duck.—Kensico, Jan. 28 (Cruickshank); 14, Parsippany Lake, April 29 (Cobb, Cruickshank, J. and H. Murdock); 2, Jones Beach, May 24-27 (Vogt); 2, Central Park, Sept. 28 (Carleton); 6, Old Greenwich, Nov. 17 (Cruickshank, H. Grere).

Lophodytes cucullatus. Hooded Merganser.—Pompton, March 29 (Walsh); Troy, May 19 (Edwards); Jones Beach, July 29 (Rose, Sedwitz, Vogt); Rye,

Oct. 21 (Cruickshank), and 12 Dec. 2 (Oboiko and others); Jones Beach, Dec. 25 (Sedwitz).

Mergus merganser americanus. American Merganser.—Long Beach, Feb. 4 (Janvrin), and 4 Feb. 22 (Sedwitz); Central Park, March 26 (M. Rich); 135, Parsippany Lake, April 8 (Eaton, Edwards); Old Greenwich, May 10 (M. Brooks).

Mergus serrator. Red-breasted Merganser.—25, Parsippany Lake, April 8 (Eaton, Edwards); 5, Oakwood Beach, May 21 (Wiegmann).

Cathartes aura septentrionalis. Turkey Vulture.—Sheepshead Bay, March 17 (Cruickshank); Amityville, April 21 (Welles); 10, Wingdale, Dutchess Co., May 6 (J. F. and R. G. Kuerzi); Easthampton, Aug. 4 (J. L. Helmuth); 19, boundary line between Dutchess and Putnam Counties, Oct. 21 (Frost); Central Park, Oct. 28 (Sedwitz); west end of Southern State Parkway, Oct. 30 (Vogt); Orient, Nov. 3 (Latham); Bayside, Nov. 15 (Sabin).

Coragyps atratus atratus. Black Vulture.—Colts Neck, N. J., April 8 (Janvrin and Urner); Bayside, Oct. 12, "seen moving about 250 feet overhead, I noted the short, *spread* tail, rather wide wings and light almost white bases to the primaries [which] gave an effect as though there were holes in the wings at first. I know the Turkey Vulture very well and am positive that the bird in question was a Black Vulture" (Herman Bohn).

Astur atricapillus atricapillus. Eastern Goshawk.—Freshly killed bird, five miles south of Kent, Conn., Nov. 18 (Edwards, Kassoy, J. F. and R. G. Kuerzi, Oboiko); Barnegat region, Dec. 23 (Walsh); 2, Queens, Dec. 29 (Sedwitz).

Accipiter cooperi. Cooper's Hawk.—Staten Island, bred for the second consecutive year (Cleaves).

Buteo borealis borealis. Eastern Red-tailed Hwak.—Pair bred near Rutherford (Rebell); Central Park, April 10 (M. Rich).

Buteo platypterus platypterus. Broad-winged Hawk.—Van Cortlandt Park, badly crippled bird discovered two months earlier, still present Feb. 7 (W. J. Norse); 8, Hook Mt., April 15 (Farley, Herbert, Meredith).

Buteo lagopus s. johannis. American Rough-legged Hawk.—Hohokus, N. J., "carefully identified at close range," May 13 (Helmuth); eastern Long Island, Oct. 12 (Wilcox); Jones Beach, Oct. 12 (Cobb, Maynard, Vogt); Bronx, Oct. 13 (R. G. Kuerzi).

Aquila chrysaëtos canadensis. Golden Eagle.—Short Hills, N. J., Nov. 25, well seen by an observer aware of its extreme rarity and familiar with the species in the west (Chalif); New Jersey State Game Preserve, Forked River, trapped Dec. 8 (Dowd *vide* G. G. Fry). Some doubt of position identification in latter record.

Haliaeetus leucocephalus (subsp.). Bald Eagle.—9, Croton Point, Jan. 28 (Brandreth, Farley, Herbert, J. F. and R. G. Kuerzi).

Pandion haliaëtus carolinensis. Osprey.—Millneck, nest in process of construction, later abandoned, April 22 (Bohn); Mastic, Oct. 28 (J. T. Nichols); 2, Millneck, Oct. 28 (J. L. Chapin); Idlewild, Nov. 3 (Mayer); Speonk, Nov. 14 (Wilcox).

Falco obsoletus. Black Gyrfalcon.—Orient, Feb. 15 (Latham), see "Notes," *Proceedings,* Nos. 45-46, p. 102; reported also from Jones Beach, Oct. 20 (Lane), for details see *Bird-Lore,* v. 36, no. 6, Nov.-Dec., '34, p. 364.

Falco peregrinus anatum. Duck Hawk.—Bernardsville, May 6 (C. K. Herbst).

Falco columbarius columbarius. Eastern Pigeon Hawk.—Hook Mt., April 15 (Farley, Herbert, Meredith); Central Park, April 23 (Cruickshank, E. and M. Rich); Jamaica South, Aug. 31 (Mayer); Central Park, Nov. 11 (Watson); Orient, Dec. 11 (Latham); Bronx, Dec. 23, well seen by observers aware of its winter rarity (R. G. Kuerzi and P. P. Malley).

Bonasa umbellus umbellus. Eastern Ruffed Grouse.—Trap Rock Ridges, Union Co., N. J., 2 pairs bred (Rebell); Barnegat region, Dec. 23 (Jackson).

Colinus virginianus virginianus. Eastern Bob-white.—15, Inwood Park, present all fall (W. J. Norse).

Rallus elegans elegans. King Rail.—Dead bird, Baxter Inlet, Bronx, where it was seen Dec. 24, 1933 (R. G. Kuerzi, Matuszewski), March 6 (Malley); Troy, April 20 (Walsh); Ozone Park, May 13 (Lind, Sedwitz); Jamaica South, May 18 and 20 (Mayer); Mecox Bay, July 4 (Helmuth).

Rallus longirostris crepitans. Northern Clapper Rail.—Dead bird in fresh condition, Jamaica Marshes, March 18 (Wiegmann); Baxter Inlet, May 20 (R. G. Kuerzi), female with brood, Aug. 20 (Malley); Long Beach, nest found June 3, eggs still unhatched June 10, one egg left June 17 (Janvrin); has wintered regularly during the last few years at Oakwood Beach (Wiegmann); Barnegat area, Dec. 23 (C. K. and C. M. Nichols); Baychester Marshes, Dec. 23 (Hickey, Solotar, Weber); Flushing, Dec. 23 (M. V. Beals, Walker).

Rallus limicola limicola. Virginia Rail.—Van Cortlandt swamp, Dec. 23 (R. P. Allen, Cruickshank, J. and H. Murdock).

Porzana carolina. Sora.—Flushing, Nov. 2 (Mayer).

Coturnicops noveboracensis. Yellow Rail.—Bayside, "flushed twice in a dry pasture . . . noted the small size, general yellow color and white wing patches," Sept. 19 (Bohn).

Creciscus jamaicensis stoddardi. Black Rail.—Jones Beach, Sept. 29 (Astle, Matuszewski).

Ionornis martinica. Purple Gallinule.—Jones Beach, "captured in a mosquito ditch and possibly carried north by the storm of June 19," June 21 (Vogt); Barnegat strip, Oct. 28 (Urner).

Gallinula chloropus cachinnans. Florida Gallinule.—Mill Neck, April 15 (Kritzler, McBride, Scott); Troy, April 20 (Walsh) and 9 young, June 19 (Brown); Fort Salonga, L. I., Nov. 18 to Dec. 31 (G. G. Fry).

Fulica americana americana. American Coot.—2, Kensico Reservoir, Jan. 28 (Cruickshank); Clove Valley, Dutchess Co., April 1 (Baker); Millneck, May 20 (Sedwitz); 2, Rye Lake, Dec. 16 (Cook).

Charadrius melodus. Piping Plover.—Jones Beach, egg hatching, June 3 (Vogt); 4, Oak Island Beach, Sept. 30 (Breslau, Sedwitz, Wolfram).

Charadrius semipalmatus. Semipalmated Plover.—2, Brigantine, April 4 (Walsh); Central Park, May 29 (E. and M. Rich); Idlewild, July 2 and 6 (Mayer); 4, Newark Marshes, July 7 (Urner); Baxter Inlet, Oct. 30 (Malley); 2, Oak Island Beach, Nov. 18 (Breslau, Carleton, Johnson, Sedwitz).

Oxyechus vociferus vociferus. Killdeer.—Central Park, March 19 (M. Rich); Idlewild, full set of eggs, July 11 (Mayer); Orient, very common and increasing, lingered to Dec. 21 (Latham).

Pluvialis dominica dominica. American Golden Plover.—Mecox Bay, 76 arrived Aug. 29 and remained in varying numbers until Oct. 5 (Helmuth); Jones Beach, Aug. 5 (Breslau, Sedwitz) to Nov. 25 (Cruickshank, Jove, J. and H. Murdock, W. A. Weber), maximum 5, Aug. 26 (Breslau, Cruickshank, J. F. and R. G. Kuerzi, Sedwitz); 40, Hempstead Plains, Sept. 10 (Matuszewski); Orient, Nov. 16 (Latham).

Squatarola squatarola. Black-bellied Plover.—Baxter Inlet, June 12 (Malley); Idlewild, lingered to July 2, returned July 19 (Mayer); 15, Newark, Aug. 8 (Urner); Orient, Nov. 16 (Latham).

Arenaria interpres morinella. Ruddy Turnstone.—Old Greenwich, May 16-28, maximum 10, May 20 (M. Brooks); Baxter Inlet, May 21 (R. G. Kuerzi); Idlewild Beach, June 16, then July 13 and first regular migrants July 31 (Mayer); Rye, Oct. 21 (Cruickshank); 3, Tuckerton Marshes, Nov. 25 (R. P. Allen, Evans, Peterson, Walsh).

Philohela minor. American Woodcock.—Central Park, March 24 (Cruickshank) and May 19 (Carleton); 2, Port Chester, Dec. 16 (Cook); Bronx, Dec. 23 (Hickey, Jove, Norse, Solotar, W. A. Weber).

Phaeopus hudsonicus. Hudsonian Curlew.—South Oyster Bay, April 23 (Vogt); 100, Westbury, May 20 (Matuszewski); 3, Mecox Bay, June 1 (Wilcox); 2, Newark Marshes, Aug. 12 (Eaton); Orient, July 2 to Oct. 13 (Latham); 960, Barnegat, July 21 (Urner).

Bartramia longicauda. Upland Plover.—Lamington, 6 pair bred (an increase of two), arrived May 5 (C. K. Herbst); 12, New Hyde Park, Aug. 5 (Cruickshank, J. and H. Murdock, Sedwitz); 55 plus, Newark Marshes, Aug. 11 (Urner); 2, Bronx, heard flying over, Aug. 11 (J. F. Kuerzi); Orient, Sept. 17 (Latham).

Actitis macularia. Spotted Sandpiper.—Sullivan Co., virtual colonial nesting noted, 4 clutches completed May 24 (Mayr); 25, Old Greenwich, May 10 (M. Brooks); Jamaica South, Oct. 5 (Mayer).

Tringa solitaria solitaria. Eastern Solitary Sandpiper.—Newark Marshes, July 11 (Urner); Van Cortlandt Park, crippled bird, Nov. 18 (W. A. Weber).

Catoptrophorus semipalmatus subsp. Willet.—2, July 20 (Vogt); good scattering of fall birds along the coast; maximum 12, Moriches Inlet, Sept. 1 (Cobb); 10, Jones Beach outer strip, Sept. 6 (K. Browning, J. F. and R. G. Kuerzi, Oboiko). Leroy Wilcox, who has collected *inornatus* on Long Island and who is familiar with the measurements of *semipalmatus,* writes of an observation at Mecox Bay, Sept. 9: "In a flock of 11 Willets, I picked out an Eastern which was *very* noticeably smaller than the Westerns. It was in young or winter plumage. This is the first time I have been able to pick out the Eastern Willet in the fall." 2, Orient, Sept. 14 (Latham).

Totanus melanoleucus. Greater Yellow-legs.—Central Park, May 6 (E. and M. Rich); Jones Beach, "all of June" (Vogt); Idlewild, lingered to June 26, 6 returned July 3 (Mayer); Orient, June 29 (Latham); 3 "swimming and tipping for food in a pool, exactly in the manner of ducks," on a farm south of Flushing, Sept. 20 (Astle, Matuszewski); Idlewild, Dec. 4 (Mayer); Orient, Dec. 7 (Latham); 3, Old Greenwich, Dec. 23 (M. Brooks, Cook).

Totanus flavipes. Lesser Yellow-legs.—Old Greenwich, 4 records of 1 or 2 birds, May 7-21 (M. Brooks); 9, Newark Marshes, June 30 (Urner); Idlewild, July 2 (Mayer); Ocean County, Nov. 4 (Urner).

Calidris canutus rufus. American Knot.—18, Idlewild Beach, June 16 (Mayer); 16, Jones Beach, June 17 (Vogt); 150, Ocean Co., N. J., Nov. 11 (Urner); Beach Haven, Dec. 23 (C. K. and C. M. Nichols).

Arquatella maritima. Purple Sandpiper.—Long Beach, maximum of 24, Feb. 25 (Cruickshank); Montauk, remained until March 25 (Farley, Potter, Street and others); Oak Island Beach, Nov. 18 (Breslau, Carleton, Johnson, Sedwitz); 4, Long Beach, Nov. 18 (Lind); Beach Haven, Dec. 23 (C. K. and C. M. Nichols); 4, Larchmont breakwater, Dec. 23 (Cobb, Vogt).

Pisobia melanotos. Pectoral Sandpiper.—Jones Beach, Nov. 25 (Cruickshank, Jove, J. and H. Murdock, W. A. Weber).

Pisobia fuscicollis. White-rumped Sandpiper.—2 flocks of 50, Mastic, June 10 (J. T. and W. F. Nichols); Jones Beach, June 26 (Vogt); 50-75, Oak Island Beach, Sept. 9 (Breslau, Sedwitz); Beach Haven, Nov. 11 (Urner); Orient, Nov. 19 (Latham).

Pisobia bairdi. Baird's Sandpiper.—Jones Beach, June 3 (Vogt), Aug. 25 (Evans, Lawn, Vogt) and Aug. 31 (Matuszewski); Idlewild, Aug. 29 and 2 on Sept. 9 (Mayer); Newark Marshes, Sept. 8 and 15 (Urner), and 22 (Rebell); New Inlet, "catching insects on the wing," Sept. 22 (Sedwitz); Oak Island Beach, Oct. 21 (Breslau, Matuszewski, McKeever, Sedwitz).

Pisobia minutilla. Least Sandpiper.—Idlewild, June 12 and 2 possibly southbound, June 24 (Mayer); Jones Beach, cripple, June 17 (Vogt); 4, Newark Marshes, June 30 (Urner); 4, Tuckerton, July 1 (Urner).

Erolia testacea. Curlew Sandpiper.—Beach Haven, Oct. 28 (Urner).

Pelidna alpina sakhalina. Red-backed Sandpiper.—Jones Beach, July 2 (Vogt) and July 19 (Bohn, Walker); Brigantine, July 15 (Urner); 300, Beach Haven, Aug. 12 (Urner); Oak Island Beach, Dec. 2 (Astle, Matuszewski); Moriches Inlet, Dec. 14 (Wilcox).

Limnodromus griseus griseus. Eastern Dowitcher.—Old Greenwich, May 7 (M. Brooks); Baxter Inlet, May 20-21 (Malley); 300, Mecox Bay, May 19 (Sedwitz); 3, Jones Beach, June 26, and 2, June 30 (Vogt); 2, Idlewild, June 30 (Mayer); Newark Marshes, June 30 (Urner); 1,000 (est.), Brigantine, July 21 (Urner); 3, Jones Beach, Nov. 4 (Astle, Matuszewski, Hickey); 10, Tuckerton Marshes, Nov. 4 (Urner).

Limnodromus griseus scolopaceus. Long-billed Dowitcher.—Jones Beach, July 1 (Vogt); Tuckerton, Aug. 18, and 3, Nov. 4 (Urner).

Micropalama himantopus. Stilt Sandpiper.—Newark Marshes, July 7 (Urner).

Ereunetes pusillus. Semipalmated Sandpiper.—Idlewild, 2 arrived April 23, 123 as late as June 15, lingered until June 29 and returned July 4 (Mayer); Central Park, May 29 (E. and M. Rich); 10, Jones Beach outer strip, Nov. 3 (Bohn, Walker and others); 1, Nov. 18 (Breslau, Carleton, Johnson, Sedwitz).

Ereunetes mauri. Western Sandpiper.—Jones Beach, June 10 (Vogt); 2, Idlewild Beach, June 12 and 2, July 15 (Mayer); Oak Island Beach, Nov. 4 (Astle, Hickey, Matuszewski); Ocean County, N. J., Nov. 11 (Urner).

Tryngites subruficollis. Buff-breasted Sandpiper.—Newark Marshes, Aug. 30 and Sept. 15 (Urner).

Limosa fedoa. Marbled Godwit.—Moriches Inlet, Aug. 5 and Aug. 20-21 (Cobb, Wilcox); Brigantine, Aug. 5-Sept. 2 (Edwards, Urner); Jones Beach, Sept. 6 (K. Browning, J. F. and R. G. Kuerzi, Oboiko) to Sept. 23 (Cruickshank, J. and H. Murdock), maximum 5 birds; Orient, Aug. 16 and Sept. 17 (Latham).

Limosa haemastica. Hudsonian Godwit.—Brigantine, May 16 (Urner); Easthampton, Sept. 10 (Helmuth); Newark Marshes, Sept. 18 (Urner); Oak Island Beach, Oct. 28 (Breslau, Carleton, Johnson, Sedwitz).

Crocethia alba. Sanderling.—Old Greenwich, April 20, maximum 25 on May 7-8 (M. Brooks); 2, Idlewild until June 18, returned July 11 (Mayer); 25, Brigantine, July 15 (Urner).

Phalaropus fulicarius. Red Phalarope.—2, Newark Marshes, May 19 (Urner); Jones Beach, May 28 (Vogt); Gardiner's Bay, June 26 (Latham); Beach Haven, Aug. 18 (Urner).

Steganopus tricolor. Wilson's Phalarope.—Newark Marshes, May 12, and Brigantine, June 19 (Urner); Jones Beach, June 28 (Bohn, Walker) and July 29 (Sedwitz); Tuckerton Marshes, Aug. 5 and 4, Newark Marshes, Aug. 8 (Urner); 4, Jones Beach outer strip, Aug. 26 (Breslau, Herbert, Vogt and others) to Sept. 9 (Cruickshank, Sedwitz and others); 4, Gardiner's Bay, Sept. 4 (Latham).

Lobipes lobatus. Northern Phalarope.—Montauk, June 1 (Wilcox); Jones Beach, Sept. 9 (Vogt and others) and Sept. 16 (Farley, Herbert, Vogt); Newark Marshes, Sept. 18 (Edwards, J. F. and R. G. Kuerzi).

Stercorarius parasiticus. Parasitic Jaeger.—Oakwood Beach, a bird either this species or the next, May 22 (J. F. and R. G. Kuerzi); only a few shore records during the fall.

Stercorarius longicaudus. Long-tailed Jaeger.—Jones Beach, June 8 (well seen and carefully identified, J. F. Matuszewski).

Larus hyperboreus. Glaucous Gull.—Scattered individuals seen during the winter, much less frequent during the fall; 3, Westchester Creek garbage dump, Feb. 3 (J. F. and R. G. Kuerzi); 2, Long Beach, April 1 (Cobb, Cruickshank, J. and H. Murdock); between Shark River and Brigantine, April 8 (Janvrin, Urner and others); Hillview Reservoir, April 21 (Mr. and Mrs. Rich); Atlantic Beach, April 29 (Sedwitz and others); Jones Beach, May 6 (Cruickshank, J. and H. Murdock); Easthampton, May 20 (Helmuth).

Larus leucopterus. Iceland Gull.—Well distributed and most often at garbage dumps and sewer outlets; S. W. of Scotland Light Ship, Jan. 7 (Matuszewski); Hudson River, Englewood, Jan. 14 (Cruickshank); East River at Welfare Island, Jan. 15 (Helmuth); Harlem River at 155th St., Jan. 27 (Hickey); 3, Westchester Creek garbage dump, Feb. 3 (J. F. and R. G. Kuerzi); 2, Long Beach, Feb. 11 (Breslau, Cruickshank and Sedwitz); Little Neck Bay, April 8 (Brown); 3, between Shark River and Brigantine, April 8 (Janvrin, Urner and others); Jones Beach, May 6 (Cruickshank, J. and H. Murdock); one summered at Beach Haven (Urner); less numerous in the fall; probably 12 different birds at the Westchester Creek garbage dump during the winter of 1933-34 (R. G. Kuerzi).

Larus kumlieni. Kumlien's Gull.—Jones Beach, Dec. 16 (Peterson, Vogt).

Larus marinus. Great Black-backed Gull.—Over 200 in one flock, Long Beach, Feb. 11 (Breslau, Cruickshank, Sedwitz); 6, Montauk, July 25 (Sedwitz).

Larus fuscus fuscus. Lesser Black-backed Gull.—Beach Haven, N. J., Sept. 9, sight record (Edwards, Urner), see *Auk,* v. 52, no. 1, Jan., 1935.

Larus fuscus graellsi. Lesser Black-backed Gull.—Westchester Creek garbage dump, Bronx, Dec. 9, sight record (J. F. and R. G. Kuerzi); see *Proceedings,* v. 45-46, p. 101.

Larus delawarensis. Ring-billed Gull.—14, Old Greenwich, May 30 (M. Brooks); 60, Jones Beach, June 17, where it summered (Sedwitz, Vogt).

Larus atricilla. Laughing Gull.—1,000 (est.), two miles N. W. of Setauket, Long Island, mostly immature plumage, June 27 (Wilcox); Orient, Dec. 2 (Latham); Barnegat region, Dec. 23 (C. K. and C. M. Nichols).

Larus philadelphia. Bonaparte's Gull.—3, Parsipanny Lake, April 22 (Mr. and Mrs. Rich); 38, Old Greenwich, May 8 and 1,000 (est.), Southport, May 9

(M. Brooks); Idlewild, May 30 (Mayer); 1,000 (est.), Montauk, Dec. 29 (Sedwitz).

Larus minutus. Little Gull.—Oakwood Beach, April 22 (Drescher) and May 22 (J. F. and R. G. Kuerzi); Lower New York Bay, off Robbin's Reef, April 29 (Mr. and Mrs. Rich) and off the Staten Island Ferry, April 30 (J. P. Chapin).

Pagophila alba. Ivory Gull.—"A pure white gull flying in good view over Gardiner's Bay. I feel quite certain was this, although only a sight record," Feb. 1 (Latham); see Notes," *Proceedings,* v. 45-46, p. 102.

Rissa tridactyla tridactyla. Atlantic Kittiwake.—24, Idlewild, Jan. 16 (Mayer); 2, Jones Beach, Jan. 31 (Mayer); Manhattan Beach, 1 on Jan. 26 (Rich), 6 on Feb. 10 (Cruickshank) and 2, Feb. 11 (Breslau, etc.); 8, Long Beach, Feb. 11 (Breslau, etc.); 3, Montauk, Dec. 29 (Sedwitz).

Gelochelidon nilotica aranea. Gull-billed Tern.—Oakwood Beach, Aug. 4 (Cruickshank); Jones Beach, Sept. 9 (Matuszewski and others); Sagaponack, Sept. 16 (Breslau, Carleton, Helmuth, Sedwitz, Wolfram); 2, Mecox Bay, Sept. 17 (Helmuth).

Sterna forsteri. Forster's Tern.—Jones Beach, July 29 (Sedwitz); Idlewild, Aug. 29-31 (Mayer); 25, Jones Beach outer strip, Sept. 9 (Breslau, Sedwitz); 2, Moriches Inlet, Sept. 9 (Walker, Wilcox); 50, south shore of Long Island, Sept. 16-17 (Breslau, Carleton, Helmuth, Sedwitz, Wolfram); New Inlet, Sept. 23 (Breslau, Sedwitz); Barnegat region, Dec. 23 (C. K. Nichols, Walsh).

Sterna hirundo hirundo. Common Tern.—Old Greenwich, May 5 (M. Brooks); Orient, former colony of 4,000-5,000 now reduced to about 500 (Latham); 3, Fire Island Inlet, Nov. 7 (Breslau, Johnson, Sedwitz).

Sterna paradisaea. Arctic Tern.—Georgica Pond, Aug. 4 (Helmuth).

Sterna dougalli dougalli. Roseate Tern.—Orient, colony of 400 now entirely wiped out (Wilcox); Mt. Sinai, adult feeding young bird, June 27 (Wilcox); Baxter Inlet, Aug. 25 (Cruickshank); 3, New Inlet, Sept. 16 (Breslau, Carleton, Helmuth, Sedwitz, Wolfram).

Sterna fuscata fuscata. Eastern Sooty Tern.—Barnegat Inlet, May 27 (Rogers).

Sterna antillarum antillarum. Least Tern.—Idlewild, 2 eggs hatched, July 15 (Mayer); 50, Moriches Inlet, Aug. 11 (Wilcox).

Hydroprogne caspia imperator. Caspian Tern.—Barnegat area, Aug. 18 (Rogers) to Sept. 16 (Hickey, J. F. and R. G. Kuerzi, Urner), usually 2 (Urner); Jones Beach outer strip, 4 on Sept. 9 (Breslau, Sedwitz), regularly until Oct. 14 (Breslau, Carleton, Johnson, Sedwitz), maximum 6, Sept. 23 (Cruickshank, J. and H. Murdock); Moriches Inlet, 3 on Sept. 9 (Walker, Wilcox) to 2, Sept. 16 (Cobb); largest daily total between Montauk and Moriches, 8, Sept. 10 (Helmuth); 2, Gardner's Bay, Sept. 2 (Latham); 2, Long Beach, Sept. 9 (Hagood);

Jerome Reservoir, Sept. 30 (Cruickshank); dead bird at Jones Beach was banded July 18, 1931, by Wm. Lyon at Hat Island, Michigan (*vide* Vogt).

Chlidonias nigra surinamensis. Black Tern.—Oakwood Beach, May 22 (J. F. and R. G. Kuerzi); Rye, July 22 (Cruickshank); Gardner's Bay, Sept. 26 (Latham).

Rynchops nigra nigra. Black Skimmer.—3, Amityville, June 18 (Harris) and Jones Beach outer strip, June 29, almost daily thereafter; Gilgo, nest found with young birds, Aug. 18 (Vogt); Hudson River above Dyckman St. ferry, Sept. 3 (Cruickshank); 110, Jones Beach outer strip, Sept. 9 (Breslau, Sedwitz); 16, Moriches Inlet, Sep. 9 (Walker, Wilcox), 24 on Sept. 12 (Wilcox), last seen Sept. 16 (Cobb); 6, Idlewild, Sept. 14, to 2, Oct. 6 (Mayer); 30, Long Beach, Sept. 9 (Hagood); 7, Orient, Sept. 12 (Latham); 18, New Inlet, Sept. 16 (Breslau, Carleton, Helmuth, Sedwitz, Wolfram).

Alca torda. Razor-billed Auk.—A few, Montauk, Feb. 22 (King, *vide* Breslau); Orient, March 4 and April 4 (collected, Latham); Montauk, Dec. 29 (Sedwitz).

Uria lomvia lomvia. Brünnich's Murre.—2, Montauk, Jan. 27 (Astle, Matuszewski); Manhattan Beach, Jan. 28 (J. M. Cunneen); Brighton Beach, Feb. 18 (Rich); several, Montauk, Feb. 22 (King).

Alle alle. Dovekie.—Jones Beach, Jan. 26 (Vogt); S. W. of Scotland Light Ship, Jan. 27 (Matuszewski); 12, Montauk, Feb. 21 (King); 1, Swan Island, Moriches Bay, 1 alive in road at Speonk Shore, Dec. 1, and 1 at Moriches Bay, Dec. 2 (Wilcox); 2, Mecox Bay, Dec. 1-2 (Ann and Boughton Cobb); 3 (2 oil-soaked), Jones Beach, Dec. 2 (Vogt); dead bird in fresh condition, Long Beach, Dec. 9 (G. G. Fry, C. K. Herbst); dead bird, Montauk (Sedwitz) and another in fresh condition, Englewood (Cruickshank), Dec. 29.

Zenaidura macroura carolinensis. Eastern Mourning Dove.—Idlewild, 2 eggs, May 14 (Mayer); Central Park, Aug. 30 and Sept. 22 (Carleton).

Coccyzus americanus americanus. Yellow-billed Cuckoo.—Miller Place, May 4 (G. P. Helme).

Coccyzus erythropthalmus. Black-billed Cuckoo.—Central Park, Aug. 13 (Carleton).

Tyto alba pratincola. Barn Owl.—New Providence, young birds, June (Rebell); Floral Park, dead bird, April 23 (Breslau, Cruickshank, Lind, Sedwitz); Troy, June 16 (Brown); Hohokus, N. J., Aug. 7 to Nov. (Helmuth).

Otus asio naevius. Eastern Screech Owl.—Jones Beach, May 12 to 27 (Vogt).

Bubo virginianus virginianus. Great Horned Owl.—Eastport, Nov. 27 (Wilcox); Idlewild, Dec. 12 (Mayer).

Nyctea nyctea. Snowy Owl.—Montauk, Jan. 1, second individual in nine days (Breslau, Sedwitz); Mecox Bay, Jan. 2 (Helmuth); Orient, Feb. 5 (Latham); Baxter Inlet, March 6 (Malley); Idlewild, April 29 (Lind) to May 3 (Sedwitz);

arrived in the fall Oct. 31, Eastport (Wilcox) and Flushing (shot, Molnar); others recorded at Flanders, Idlewild, Jones Beach, Mecox Bay, Montauk, Orient (three birds) Shinnecock Bay and Speonk; Bronx, Nov. 11 (Knoblauch); Staten Island, Dec. 23 (Rich, Wiegmann).

Strix varia varia. Northern Barred Owl.—East Patchogue, left nest about Aug. 1 (Overton); Bronx Park, Nov. 6 (Gibson).

Asio wilsonianus. Long-eared Owl.—Easthampton, crushed by car, Sept. 7 (Helmuth); Central Park, Nov. 14 (Watson).

Asio flammeus flammeus. Short-eared Owl.—Central Park, Oct. 5 (Carleton).

Antrostomus vociferus vociferus. Eastern Whip-poor-will.—Central Park, Aug. 29 (Carleton).

Archilochus colubris. Ruby-throated Hummingbird.—Jamaica South, Sept. 25 (Mayer); 2, Bronx Park, Oct. 8 (Gibson, Malley, Petersen).

Megaceryle alcyon alcyon. Eastern Belted Kingfisher.—Central Park, July 19 (Carleton).

Ceophloeus pileatus abieticola. Northern Pileated Woodpecker.—Dutchess County, April 14 (Baker); North of Kensico Reservoir, Dec. 23 (Brand, Zimmer).

Melanerpes erythrocephalus. Red-headed Woodpecker.—Rapidly decreasing; now only a migrant in the Passaic River Valley (Eaton); bred in Pelham Bay Park, three pairs (Malley) and in Scarsdale (Farley); 3, Hatfield Swamp, N. J., Jan. 1 and 2, Troy, April 2 (Brown); Central Park, May 18 (Rich, Sedwitz); Baldwin, July 29 (Sedwitz).

Tyrannus tyrannus. Eastern Kingbird.—Central Park, Sept. 10 and Wantagh, Sept. 23 (Carleton); Jamaica South, Sept. 28 (Mayer); Bronx Park, Oct. 11 (Gibson, Malley).

Tyrannus verticalis. Arkansas Kingbird.—Jones Beach, Aug. 28 (J. F. and R. G. Kuerzi, Vogt) to Sept. 3 (Vogt); another, Sept. 9 (Vogt and others); Wantagh, Sept. 12 (Mangels); Montauk, Nov. 11 (Breslau, Cruickshank, Sedwitz and others) to 2, Nov. 18 (Freidle, Watson).

Myiarchus crinitus boreus. Northern Crested Flycatcher.—Jamaica South, Sept. 14 (Mayer); Central Park, Sept. 19 (Carleton).

Empidonax flaviventris. Yellow-bellied Flycatcher.—Elmhurst, Aug. 17, 29, 30 and 31 (all trapped and identified in the hand—M. V. Beals).

Empidonax trailli trailli. Alder Flycatcher.—Central Park, singing male, May 21 (Cruickshank, E. Rich); Bayside, singing male, Aug. 21 (Bohn); Elmhurst, Aug. 17 (trapped bird carefully identified in the hand—M. V. Beals).

Empidonax minimus. Least Flycatcher.—Elmhurst, trapped, Sept. 11 (M. V. Beals); Jamaica South, Sept. 20 (Mayer), reported without details.

Otocoris alpestris praticola. Prairie Horned Lark.—Newark Airport, June 23 (Urner); 2, Van Cortlandt Park, Oct. 25 (J. F. and R. G. Kuerzi).

Iridoprocne bicolor. Tree Swallow.—Idlewild, May 31 (Mayer).

Stelgidopteryx ruficollis serripennis. Rough-winged Swallow.—Central Park, April 20 (Rich and others); 3, Mattituck, June 29 (Latham); Westwood, June 30 (Carleton).

Hirundo erythrogaster. Barn Swallow.—Hempstead Lake, April 3 (J. L. Chapin); Springfield, N. J., albino bird, ... (Rebell); Idlewild, 3 eggs, May 28 (Mayer); 3, Jones Beach, Nov. 8 (Vogt); 4, Montauk and 4, New Inlet, Nov. 11 (Breslau, Carleton, Johnson, Sedwitz).

Petrochelidon albifrons albifrons. Northern Cliff Swallow.—Brewster, N. Y., colony of 20-30 pairs, May 27 (Farley, Hickey); Idlewild, July 31 (Mayer).

Progne subis subis. Purple Martin.—Still nests at Baldwin (Matuszewski).

Cyanocitta cristata cristata. Northern Blue Jay.—Large migration, May 6, many localities; Jones Beach, May 7 (Vogt).

Corvus corax principalis. Northern Raven.—Wawayanda Mt., Sussex Co., seen and heard May 2 (Helmuth).

Corvus brachyrhynchos brachyrhynchos. Eastern Crow.—Stillwater, Sussex Co., N. J., albino male with small testes taken Aug. 6; albino female with undeveloped ovaries taken Aug. 21 (Ammann).

Corvus ossifragus. Fish Crow.—Montauk, 2 pair breeding, June 1 (Wilcox).

Baeolophus bicolor. Tufted Titmouse.—Pelham Bay Park, Nov. 12 (Carleton, Hickey, A. M., P. A. and R. R. Thomas).

Sitta carolinensis carolinensis. White-breasted Nuthatch.—Battery Park, May 21 (Paul).

Certhia familiaris americana. Brown Creeper.—Garden City, Aug. 31 (J. T. Nichols).

Troglodytes aedon aedon. Eastern House Wren.—Central Park, Sept. 19 (Carleton); Millbrook, Dutchess County, Nov. 18 (Peterson).

Thryothorus ludovicianus ludovicianus. Carolina Wren.—Orient, killed by cat late in February after having remained in a garden four months (Latham); Jones Beach, April 20 (Vogt); Milltown, N. J., "more common than I can ever remember," May (Collins); Palisades, only one pair bred (Herbert); New Jersey, pine barrens, entirely absent after the severe winter (Urner); Inwood Park, July 23 (Norse); Orient, 2 irregularly recorded during the fall, still present Dec. 24 (Latham).

Telmatodytes palustris palustris. Long-billed Marsh Wren.—Central Park, May 7 (Rich and others), May 18 (Cruickshank); Bayside, Oct. 27 (Sabin); Montauk, Nov. 18 (Astle, Drescher, Hickey); 6, Piermont Marsh, Dec. 23 (Peterson and others).

Cistothorus stellaris. Short-billed Marsh Wren.—George Washington Bridge, found dead Oct. 2 (Hadley) (identified by Rogers); Bayside, Oct. 5 (Bohn); Hohokus, Oct. 24 (Helmuth); Jones Beach, Nov. 18 (Rose).

Mimus polyglottos polyglottos. Eastern Mockingbird.—Orient, wintered on Main Street (Latham); Whitestone, Feb. 5-7 (M. V. Beals); Saugatuck, Conn., Feb. 3 and 11 (M. Brooks); Jones Beach, April 29 (Vogt); Springfield, N. J., May 5 (Rebell); Elmhurst, Sept. 5 (M. V. Beals); Bronx, Sept. 9 (Malley); Moriches Inlet, Sept. 9 (Walker, Wilcox); Rye, Oct. 5-11 (Oboiko); Montauk, Dec. 23-29 (Breslau, Carleton, Lind, Sedwitz); Jamaica Estates, Dec. 23-28 (Knorr).

Dumetella carolinensis. Catbird.—Georgica Woods, Jan. 1 (Breslau, Sedwitz); Biltmore Shores, Jan. 1 (Astle, Matuszewski); Central Park, possibly summered, May 31, Aug. 7, 13, 22 (Carleton); Jamaica South, 4 eggs, June 8 (Mayer); Bronx Park, present all December (Gibson); Mastic, Dec. 9 (W. F. Nichols).

Taxostoma rufum. Brown Thrasher.—Rye, April 7 (Cruickshank); cripple, Jamaica Estates, Dec. 29 (M. V. Beals, Knorr).

Turdus migratorius migratorius. Eastern Robin.—Sullivan Co., 4 clutches all hatching the same day, May 28 (Mayr).

Hylocichla mustelina. Wood Thrush.—Central Park, Aug. 29 (Carleton).

Hylocichla guttata faxoni. Eastern Hermit Thrush.—2 in the oak scrub and pine woods between Sag Harbor and Easthampton, July 29 (Helmuth).

Hylocichla ustulata swainsoni. Olive-backed Thrush.—Bronx Park, June 9 (Malley); Central Park, Oct. 20 (Mayer).

Hylocichla fuscescens fuscescens. Veery.—Ocean Co., colony apparently breeding birds near Collier's Mills, June (Urner); Mill Neck, bred (Matuszewski); Elmhurst, Aug. 25 (M. V. Beals).

Hylocichla fuscescens salicicola. Willow Thrush.—Princeton, killed striking a building, Sept. 10 (C. H. Rogers).

Sialia sialis sialis. Eastern Bluebird.—Darien, Conn., full clutch 5 eggs, nest with 3 eggs, nest 1 egg, 4 other nests in boxes apparently nearing completion, April 21 (E. E. Dickerson); 4, Montauk, Dec. 29 (Sedwitz).

Polioptila caerulea caerulea. Blue-gray Gnatcatcher.—Bronx Park, April 25 (Malley and others); Newark Marshes, Aug. 21 (Rebell); Elmhurst, Aug. 29 (M. V. Beals); Central Park, Sept. 7 (Carleton); Jones Beach, Sept. 9 (Cruickshank).

Corthylio calendula calendula. Eastern Ruby-crowned Kinglet.—Queens, Dec. 22-23 (Knorr).

Anthus spinoletta rubescens. American Pipit.—Approximately 100, Orient, Nov. 27 to Dec. 24 (Latham); 125, Idlewild, Dec. 25 (Sedwitz).

Bombycilla cedrorum. Cedar Waxwing.—Small flock, Kent, March 28-31 (J. F. and R. G. Kuerzi), 26, Milltown, April 26 (Collins); Central Park, May 6 (E. and M. Rich and others); 5, Hewlett, Nov. 20 (Hunt); 7, Riverdale, Dec. 23 (Cruickshank).

Lanius borealis borealis. Northern Shrike.—Few in the winter; generally distributed in the fall; Millneck, Jan. 21 (Breslau, Sedwitz); Kissena Park, Jan. 21 (McBride); arrived Garden City, Nov. 25 (J. T. Nichols) and 2, Montauk Point, Nov. 25 (Breslau, Carleton, Johnson, Sedwitz); 2, Westbury, Nov. 29 (Matuszewski); 3, Hempstead Lake, Nov. 29 (J. L. Chapin); recorded also at Babylon, Orient, White Plains, Jamaica Estates, and south of Piermont.

Lanius ludovicianus migrans. Migrant Shrike.—Hicksville, Jan. 21 (Breslau, Sedwitz; see "The Season," *Bird-Lore,* v. 36, no. 2, March-April, 1934, p. 112); Kent, April 14 (J. F. and R. G. Kuerzi); Jones Beach, Aug. 26 (J. F. and R. G. Kuerzi, Sedwitz and others); Pine Plains, Dutchess Co., Aug. 30 (Frost).

Sturnus vulgaris vulgaris. Starling.—Newark Marshes, over 90,000 blackbirds, mostly this species and the Redwing, Nov. 6 (Urner).

Vireo griseus griseus. White-eyed Vireo.—Bronx Park, Oct. 4 (Gibson).

Vireo flavifrons. Yellow-throated Vireo.—Bayside, Oct. 12 (Bohn).

Vireo solitarius solitarius. Blue-headed Vireo.—Central Park, Sept. 19 (Carleton); Elmhurst, Oct. 23 (M. V. Beals).

Vireo philadelphicus. Philadelphia Vireo.—Bernardsville, May 10 (C. K. Herbst); Orient, May 11 (Latham); Hohokus, May 21 and Easthampton, Aug. 27, "very carefully identified" (Helmuth); Central Park, Sept. 7 (Carleton).

Vireo gilvus gilvus. Eastern Warbling Vireo.—Kent, May 4 (J. F. and R. G. Kuerzi); 2 nested, Easthampton, June (Helmuth).

Protonotaria citrea. Prothonotary Warbler.—Bronx Park, April 29 (Hickey, Malley) and May 27 (Malley); Jones Beach, May 8 (J. A. Vogt).

Helmitheros vermivorus. Worm-eating Warbler.—Jones Beach, April 20 (Vogt).

Vermivora chrysoptera. Golden-winged Warbler.—Bayside, Aug. 6 (Bohn).

Vermivora leucobronchialis. Brewster's Warbler.—Miller Place, May 8 (G. P. Helme); Idlewild, May 20 (Mayer).

Vermivora lawrencei. Lawrence's Warbler.—Bronx Park, May 7 (Schmidt).

Vermivora peregrina. Tennessee Warbler.—Bayside, Oct. 7 (Bohn).

Vermivora celata celata. Orange-crowned Warbler.—2, Bayside, May 5 (Bohn); 3, Kissena Park, May 13 (Sedwitz); Bernardsville, May 24 (C. K. Herbst).

Vermivora ruficapilla ruficapilla. Nashville Warbler.—Jamaica South, May 23 (Mayer).

Compsothlypis americana pusilla. Northern Parula Warbler.—Central Park, June 26 (Carleton).

Dendroica aestiva aestiva. Eastern Yellow Warbler.—Complete nest, no eggs, Jamaica, May 27, lingered to Sept. 21 (Mayer); Jones Beach, Sept. 27 (Astle).

Dendroica magnolia. Magnolia Warbler.—Barnegat region, Dec. 23 (Rebell).

Dendroica caerulescens caerulescens. Black-throated Blue Warbler—Elmhurst, Aug. 31 (M. V. Beals).

Dendroica townsendi. Townsend's Warbler (?).—"On August 18 at Easthampton I saw a bird in a flock of Warblers, which I at length felt sure was a Townsend's Warbler, although it was not in the bright plumage of the Townsend's Warblers I have seen in the spring in the west. At first glance I took it for a Blackburnian Warbler, but in a moment I knew this could not be—especially after finding a real Blackburnian in the flock. My next supposition was that it must be a very queer Black-throated Green Warbler, for it had a rather indefinite blackish throat-patch, and a larger, more solid patch of dark color on the cheeks than in any Black-throated Green I ever saw. In other respects, there was much similarity between the two, but also the following differences:—The blackish-green face patch extended forward to the base of the bill, was definitely wedge-shaped, large, and distinctly outlined. The black of the throat ended far up on the breast, and did not extend along the sides as in *virens* although it tapered off in broken lines along each side. These lines were narrower than the rather spotty markings on sides of *virens* also. Below the black, the bird's breast was decidedly yellow, though not of a very bright tone, a richer color than in the Black-throated Green. The upper parts were olive-green, thinly streaked with black, there were white wing bars, and white in the outer tail feathers, and a pale yellowish spot under the eye was conspicuous, and unlike any marketing of *virens* that I ever remember. Townsend's Warbler was so far from my mind that I did not think of it for several minutes, but it came upon me with complete conviction—after it was too late to collect the bird. I personally cannot feel any satisfaction, however, in this sort of record, without a specimen to back it up." —W. T. Helmuth III.

Dendroica virens virens. Black-throated Green Warbler.—Idlewild, April 21, and Richmond Hill, Aug. 31 (Mayer); Hempstead Lake, Oct. 14 (J. L. Chapin); Fort Totten Reservoir, Oct. 31; Inwood Park, Nov. 2 (Norse).

Dendroica fusca. Blackburnian Warbler.—Bronx Park, Oct. 12 (Cruickshank).

Dendroica castanea. Bay-breasted Warbler.—Central Park, May 6 (E. and M. Rich).

Dendroica discolor discolor. Northern Prairie Warbler.—Bronx Park, April 25 (Gibson, Malley, Schmidt); a considerable number nesting at 600 feet elevation, near Newburgh, May 20 (Murphy, Urner); 9 pair nesting, Bergen Co., June (C. K. Nichols); Bronx Park, Oct. 12 (Cruickshank).

Dendroica palmarum palmarum. Western Palm Warbler.—Central Park, April 19 (E. and M. Rich); 2, Montauk, Nov. 11 (Breslau, Carleton, Johnson, Sedwitz); 2, Hempstead Lake, Nov. 29 (J. L. Chapin), and 1, Dec. 28 (Chapin, Mahukin).

Dendroica palmarum hypochrysea. Yellow Palm Warbler.—Oakland Lake, April 5 (Scott); Baxter Inlet, Nov. 20 (Malley).

Seiurus aurocapillus. Oven-bird.—Bronx Park, April 26 (Schmidt, Seyffroth); Central Park, Aug. 13 (Carleton).

Seiurus noveboracensis noveboracensis. Northern Water Thrush.—Bronx Park, Oct. 11 (Malley).

Oporornis formosus. Kentucky Warbler.—2 singing males, Route 301, one mile east of Post Road, Putnam Co., May 15 (L. N. Nichols); Bronx Park, May 21 (Malley); singing male, Orient, July 1 (Latham); singing male foot of Storm King Mt., July 2 (Helmuth).

Oporornis agilis. Connecticut Warbler.—Elmhurst, Oct. 3 (M. V. Beals); Bayside, Oct. 10 (Bohn).

Oporornis philadelphia. Mourning Warbler.—Bronx Park, May 25 (Fuld); 2, Milltown, May 23, and 1, May 27 (Collins).

Geothlypis trichas brachidactyla. Northern Yellow Throat.—Inwood Park, Oct. 29 (Norse).

Icteria virens virens. Yellow-breasted Chat.—Central Park, May 6 (Rich, Walker); Elmhurst, Oct. 16 (M. V. Beals).

Wilsonia citrina. Hooded Warbler.—Nest with one egg, northern New Jersey, May 18 (Bowdish); Staatsburgh, Dutchess Co., probably bred (Frost); Bayside, Aug. 6 (Bohn).

Wilsonia pusilla pusilla. Wilson's Warbler.—Bayside, July 31 (Bohn); Elmhurst, Aug. 17 (M. V. Beals).

Wilsonia canadensis. Canada Warbler.—Jamaica South, Sept. 29 (Mayer).

Dolichonyx oryzivorus. Bobolink.—Central Park, May 18 (Cruickshank); 200 males, Milltown, May 16, and 175 males, May 19 (Collins); pair feeding young, Newark Marshes, Aug. 11 (Urner); 2, Jamaica South, Oct. 10, where it began arriving as a migrant July 6 (Mayer).

Xanthocephalus xanthocephalus. Yellow-headed Blackbird.—New Hyde Park, adult male accompanying grackles to a roost, Aug. 5 (Cruickshank, Sedwitz).

Agelaius phoeniceus phoeniceus. Eastern Red-wing.—Beaverkill, Sullivan Co., nesting in low pine trees, nidification in all stages from one egg in nest to two day old young, May 26 (Mayr); Montauk, Nov. 25 (Breslau, Carleton, Johnson, Sedwitz) and Dec. 16 (Helmuth, Sedwitz and others).

Icterus spurius. Orchard Oriole.—Singing male, Speonk, June 8 and later (Wilcox); young male, Easthampton, July 20 (Helmuth); male and two immatures, Bronx Park, Aug. 7 (L. N. Nichols).

Icterus galbula. Baltimore Oriole.—Jamaica South, Oct. 1 (Mayer).

Quiscalus quiscula quiscula. Purple Grackle.—Prospect Park, mixed flock of 100 in which both races were identified with certainty, Nov. 19 (Cruickshank); Central Park, Nov. 14, 15, 23 (Watson).

Piranga ludoviciana. Western Tanager.—"An adult male seen at close range in a small patch of oak woods at Wainscott, L. I., on May 20. This bird is so

vivid, conspicuous and unmistakable that no detailed description is needed but even so . . . the bird should have been collected" (Helmuth).

Piranga erythromelas. Scarlet Tanager.—Miller Place, April 27 (G. P. Helme).

Richmondena cardinalis cardinalis. Eastern Cardinal.—Eatons Neck, July 10 (Matuszewski); Bayside, Oct. 12 and Fort Totten, Oct. 31 (Bohn); Hastings-on-Hudson, irregularly throughout December (M. Voyse).

Guiraca caerulea caerulea. Eastern Blue Grosbeak.—Young male collected, New Inlet, Sept. 21 (Wilcox).

Passerina cyanea. Indigo Bunting.—Complete albino with pink eyes, road between Cornwall and Lime Rock, Conn., all summer to Aug. 13 (Whitman).

Hesperiphona vespertina vespertina. Eastern Evening Grosbeak.—50 or more, Cannondale, Conn., Jan. 5 to at least Feb. 15 (M. Brooks); 50, Warwick, N. Y., Jan. 13 (Brown); 18, west of Carmel, Putnam Co., Jan. 28 (Brandreth, Farley, Herbert, J. F. and R. G. Kuerzi).

Carpodacus purpureus purpureus. Eastern Purple Finch.—Singing male, Easthampton, July 4 and on numerous occasions thereafter but no evidence of nesting discovered (Helmuth).

Pinicola enucleator leucura. Canadian Pine Grosbeak.—Small flock, Bernardsville, mid-January and sporadically to February; 10, March 5-9 (C. K. Herbst).

Carduelis carduelis britannica. British Goldfinch.—Garden City, April 24 and 2, April 26 (J. T. Nichols); same place, Sept. 12 and Westbury, Oct. 20 (Matuszewski); 4, Jamaica Estates, Dec. 25 (Knorr).

Acanthis linaria linaria. Common Redpoll.—2, Northern White Plains, Dec. 23 (Brand, Zimmer).

Spinus tristis tristis. Eastern Goldfinch.—500 or 600 in a single flock, Warwick, Jan. 13 (Brown).

Loxia curvirostra pusilla. Red Crossbill.—Large flock, Westbury, Jan. 31 (Emory) and one, stunned striking a building, Nov. 2 (Matuszewski).

Loxia leucoptera. White-winged Crossbill.—Bronx, Jan. 3-6 (Malley); 6, Dock Watch Hollow, Warren Township, N. J., Jan. 21 (Brown, Eaton).

Pipilo erythrophthalmus erythrophthalmus. Red-eyed Towhee.—Milburn, N. J., Nov. 17 (Hix); Mastic, Dec. 9 (W. F. Nichols); Barnegat area, Dec. 23 (Bowdish).

Ammondramus savannarum australis. Eastern Grasshopper Sparrow.—Milltown, April 19 (Collins); Central Park, May 10 (Cruickshank).

Passerherbulus henslowi susurrans. Eastern Henslow's Sparrow.—Male singing, Freeport, July 12 (Thurston).

Ammospiza caudacuta subvirgata. Acadian Sparrow.—Beach Haven, Dec. 23 (C. K. and C. M. Nichols).

Ammospiza caudacuta caudacuta. Sharp-tailed Sparrow.—Baxter Inlet, 2, Dec. 7 and 1, Dec. 23 (Malley).

Ammospiza maritima maritima. Northern Seaside Sparrow.—Idlewild, April 22 (Breslau, Cruickshank, Lind, Sedwitz); Long Beach, 4 eggs on June 10, young being fed June 17 (Janvrin); Biltmore Shores, Dec. 2 (Astle, Matuszewski).

Pooecetes gramineus gramineus. Eastern Vesper Sparrow.—Central Park, April 13 (M. Rich); Hempstead Lake, Nov. 25 (J. L. Chapin).

Chondestes grammacus grammacus. Eastern Lark Sparrow.—Jones Beach, Aug. 5 (Cruickshank, Sedwitz and others); Oyster Bay, Aug. 14 and Sept. 2 (Swope); Easthampton, Aug. 17 and Montauk, Aug. 18 (Helmuth); Orient, Sept. 11 (Latham).

Junco hyemalis hyemalis. Slate-colored Junco.—Bronx Park, individual with both wings entirely albinistic, Oct. 22 (Gibson).

Spizella arborea arborea. Eastern Tree Sparrow.—Oakland Lake, April 22 (Scott).

Spizella passerina passerina. Eastern Chipping Sparrow.—3, Westbury, Dec. 25 (Matuszewski); Queens, present throughout December (Knorr).

Spizella pallida. Clay-colored Sparrow.—Jones Beach, Sept. 30, carefully observed at close range and confirmed by examination of museum skins (Breslau, Sedwitz).

Zonotrichia leucophrys leucophrys. White-crowned Sparrow.—Baxter Inlet, Dec. 23 (R. G. Kuerzi).

Passerella iliaca iliaca. Eastern Fox Sparrow.—Elmhurst, Oct. 9 (M. V. Beals); Westbury, Oct. 10 (Matuszewski).

Melospiza lincolni lincolni. Lincoln's Sparrow.—Elmhurst, Oct. 17 (M. V. Beals); Rye, Oct. 21 (Cruickshank).

Melospiza melodia melodia. Eastern Song Sparrow.—Jamaica South, 5 eggs, May 9 (Mayer).

Calcarius lapponicus lapponicus. Lapland Longspur.—10 plus, Westbury, Feb. 4 (Matuszewski); Orient, lingered until April 4 (Latham); extraordinarily heavy flight in the fall; 3, Oak Island Beach, Oct. 21 (Breslau, Matuszewski, McKeever, Sedwitz); Van Cortlandt Park, Oct. 25 (J. F. and R. G. Kuerzi); 60, Oakwood Beach, Nov. 18 (Rose, Sedwitz and others); 12, Idlewild, Nov. 22 (Mayer); 30 or 40, Tuckerton Marshes, Nov. 25 (R. P. Allen, Evans, Peterson, Walsh).

Plectrophenax nivalis nivalis. Eastern Snow Bunting.—Orient, "much rarer than last winter," fall maximum only 30 (Latham); 400 (est.), Gilgo, Nov. 11 (Breslau, Carleton, Johnson, Sedwitz); 800 (est.) in 3 flocks, causeway Lido to Jones Beach, Nov. 17 (G. G. Fry).

Report of the Secretary of the Linnaean Society of New York For the Year 1934-1935

The Linnaean Society of New York has held during the past year 15 regular, 4 informal summer meetings, and 6 ornithological seminars. The average attendance at the regular meetings has been: members, 33.8; guests, 43.5.

The Annual Dinner of the Society was held in the Flying Bird Hall of the Museum, and the Annual Meeting, as usual, immediately following, in the Duplex Hall. The speaker of the evening was Dr. James P. Chapin, of the American Museum of Natural History in New York, on: The Bird Life of the Galapagos Islands and its significance for the study of evolution.

The following officers were elected: President, Mr. John H. Baker; Vice-President, Mr. Charles A. Urner; Secretary, Dr. Ernst Mayr; Recording Secretary, Mr. Joseph J. Hickey; Treasurer, Dr. E. R. P. Janvrin; and Editor, Dr. Ernst Mayr.

During the year the Society has been so unfortunate as to lose by death Mr. Iinness Whitaker, a long time member.

Four members have resigned, or been dropped for non-payment of dues, and 17 new members were elected. The membership now stands: Honorary Member, 1; Fellows, 9; Non-Resident Members, 13; Resident Members, 143; total, 166, a decided increase over last year.

Most of the papers read before the Society related to ornithology. The speakers and their subjects were as follows:

March 27, 1934—Dr. James P. Chapin: The Bird Life of the Galapagos Islands and its Significance for the Study of Evolution.

April 10, 1934—Mr. Charles A. Urner: The Influence of Human Settlement on the Bird Life of the Pine Barrens.

April 24, 1934—Mr. Alden H. Hadley: Wanderings of a Bird Lover in the South.

May 8, 1934—Dr. William K. Gregory: Remarks on the Origins of the Ratites and the Penguins.

May 22, 1934—General Discussion: The Current Spring Migration.

Dr. John B. May: Notes on the Birds of Gaspé.

October 9, 1934—Mr. Robert P. Allen: Problems in Wild Life Conservation.

October 23, 1934—Mr. Warren F. Eaton: The Birds of Hudson and Essex Counties.

November 13, 1934—Mr. Charles H. Rogers: The Woodpeckers, their Relationships and Adaptations.

November 27, 1934—Mr. William Vogt: An Experimental Study in Sex Recognition in Birds.

December 11, 1934—Dr. Austin L. Rand: Collecting in Papuan Mountains.

December 26, 1934—General discussion: Christmas Census Reports.

January 8, 1935—Dr. E. W. Gudger: Abnormalities in Flatfish and their Evolutionary Significance.

January 22, 1935—Dr. Arthur A. Allen: Breeding Birds of Churchill, Canada.

February 12, 1935—Mr. Seth Low: Observations on Tree Swallows.

February 26, 1935—Mr. Irving Kassoy: The Nesting Habits of the Barn Owl.

The most notable event in the history of the society during the past year was a change of the constitution which resulted in a more even distribution of the work among the officers. The Recording Secretary was free to devote all his time to the gathering of important field notes and thus succeeded in a greater completeness than in almost any previous year.

The creation of the office of Editor put the issuing of the publications of the society on a more stable basis. One double-number of the Abstracts was published during the year, another number is in press, and a third in active preparation.

Conservation matters have as usual taken the particular attention of the Society. Through its Conservation Committee it has urged upon the Biological Survey the preservation of Troy Meadows as a wild life sanctuary, supplied data and maps covering the area, and supported the Audubon Association in opposing the destruction of this, the finest fresh-water swamp in New Jersey. In the summer of 1934 it opposed the "rest day" provision of the Federal hunting regu-

lations, and in 1935 gave its support to the Audubon Association's policy of a one year closed season on waterfowl. One hundred dollars were donated to the Emergency Conservation Committee for current expenses of the Hawk Mountain sanctuary.

The Society's most important conservation activity is unquestionable concerned with mosquito control. It was not until Conservation Commissioner Osborne was requested, at a meeting of the Society, to aid in correcting evils growing out of mosquito control, that local and national forces rallied in a joint attempt to ameliorate a situation that was rapidly becoming one of the worst hazards faced by our wild life. Observations made by the Society's members have included some of the most important data available on the subject. One may probably say, without exaggeration, that the cooperation now planned by federal departments, and by state game departments and mosquito elimination bodies, might not have been undertaken without efforts of this Society to initiate such cooperation; it is certain that this cooperation would have been postponed, in spite of the fact that destruction of wild life habitats by mosquito controllers was being constantly extended.

Field Work was as active as ever, and the results assembled to a higher degree than in the past, thanks to the zeal of the Recording Secretary. Careful preparations made the Christmas Census of 1934 an outstanding success. All time records were broken in New Jersey, the Bronx Region, and on Long Island. Work on the breeding activities of birds was pursued to a gratifying degree. In this connection, the investigations of John and Richard Kuerzi in Litchfield County, those of the Queens County Bird Club on Long Island, the work of Messrs. Vogt and Noble on sex-discrimination among birds, and the continuation of Mr. Kassoy's studies on the Barn Owl deserve special mention.

The Ornithological Seminar for the review of important ornithological literature remained a center of stimulating discussions. There were 6 meetings with an average attendance of 27.5.

The Secretary wishes to express to many members of the Society his thanks for their cooperation during the past year, and, in particular, his gratitude to the Recording Secretary, Mr. Joseph Hickey, for much assistance during his illness and absence in Europe.

Ernst Mayr, Secretary.

Officers, Council and Committees of the Linnaean Society of New York

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Joseph J. Hickey — C. B. P. Cobb
Charles K. Nichols — Ernst Mayr

Expire 1937

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T. Donald Carter

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CONSERVATION COMMITTEE 1935-1936

Charles A. Urner, *Chairman*

Warren F. Eaton — Marc C. Rich

LOCAL AVIFAUNA COMMITTEE 1935-1936

Joseph J. Hickey, *Chairman*

Walter Sedwitz — Lester L. Walsh

PUBLICATION COMMITTEE 1935-1936

Ernst Mayr, *Chairman*

Charles K. Nichols — John F. Kuerzi

Change in the Membership of the Linnaean Society of New York

(Between March 1, 1935 and Feb. 1, 1936.)

A. New Resident Members:

Ajello, Libero, 183 Weequahic Ave., Newark, N. J.
Allyn, Richard, 50 Haven Ave., New York City.
Birckhead, Hugh, 435 Monterey Ave., Pelham Manor, N. Y.
Bohn, Herman, 33-29 171st St., Flushing, L. I.
Rand, Austin, American Museum of Natural History, New York City.
Rosenblum, Lloyd, 603 Clinton Ave., Newark, N. J.
Wolfarth, Floyd, 503 Summer Ave., Newark, N. J.

B. New Non-Resident Members:

Amman, Andrew, Museum of Zoology, Ann Arbor, Mich.

C. Deceased Members:

Lunt, Miss Helene,
Osborn, Prof. Henry Fairfield
Webster, Mrs. J. E. B.

D. Names of Members Transferred:

Yates, Leicester B., 1716 Victoria Ave., Los Angeles, Cal. (Resident to N. R., note new address).

E. New Addresses:

Allen, Fred, 227 Bay Ave., Highlands, N. J.
Bliemeyer, Miss Rose, 8770 115th St., Richmond Hill, N. Y. C.
Boulton, Mrs. W. R., Cherry Lane, Westport, Conn.
Cruickshank, Allan D., National Association of Audubon Societies, 1775 Broadway, New York City.
Desmond, Thomas C., 94 Broadway, New York City.
Frost, Allen, 143 Academy St., Poughkeepsie, N. Y.
Howland, R. H., P. O. Box 51, Hudson Terminal, New York City.
Johnson, Julius M., 2935 Pleasant Ave., Ridgewood, N. J.
Smith, Mrs., H. W., 86 South Bay Ave., Islip, N. Y.
Stryker, Carol, Staten Island Zoological Society, Clarence T. Barrett Park West, New Brighton, Staten Island, N. Y.

Please notify Secretary of any change of address.

(For last published list of members see Proceedings, Nos. 45, 46.)

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Linnaean Prize for Ornithological Research

In an effort to promote a more constructive pursuit of bird-study among its members, the Linnaean Society of New York announces a prize of Twenty-five Dollars to be known as the Linnaean Prize for Ornithological Research. Papers submitted must embody the results of original research not previously published and not undertaken in the course of professional duties. The prize will be awarded each year at the Annual Meeting of the Society.

Conditions:

(1) Eligibility. Membership in good standing of the Linnaean Society of New York for at least one year prior to submission of the manuscript.

(2) Date. Papers are to be submitted on or prior to February 1 of the respective year to the Secretary of the Society.

(3) Papers. Manuscripts shall be typewritten, in English, ready for publication, and shall be accompanied by all necessary tables, drawings, diagrams, graphs and photographs.

(4) Award. A committee of judges shall be appointed by the President of the Society to make preliminary recommendations to the Council whose ratification and decision shall in all cases be considered final. The Council shall reserve the right to amend conditions of the award whenever it deems necessary, and it may withhold the prize in any year where the papers submitted do not prove sufficiently noteworthy.

(5) Publication. The Society reserves the right to prior publication of the successful paper but such publication shall not be considered binding upon the Society.

(6) Whenever and wherever published, the paper awarded the prize shall be accompanied by the statement, "Awarded the 19.. Linnaean Prize for Ornithological Research by the Linnaean Society of New York."