

THE BIRDS OF CHAPEL HILL, NORTH CAROLINA

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PLATE 64

For the past six years we have been greatly interested in the scientific study of the ornithology of the Chapel Hill region, spending considerable time the year round in field work. Associated with us from time to time have been a number of other bird students who have not only contributed many data but have helped to make the study of birds a real pleasure. We wish to mention in this connection the following: Elmer Brown, Freemont Shepherd, Henry Rankin, Claude Rankin, Nelson Hairston, Jim Stephens, Joe Jones, and Gilbert Wagstaff.

We realize that six years is a rather short period in which to make a reasonably complete local list, but we have amassed considerable material which, together with observations of previous students, badly needs consolidation. Also, because of the increasing interest in birds which has been manifested in Chapel Hill in the last few years, we feel that such a publication as this may be helpful to the many bird lovers as well as form a working foundation for future investigations.

Review of ornithological work. George F. Atkinson (1854-1918), assistant professor in the "Department of Geology and Natural History" here at the University from 1885 to 1888, was the first to make a scientific study of birds at Chapel Hill. However, he was not primarily interested in local birds but in the distribution of North Carolina birds in general, about which there was little known at the time. In 1887 he published "A Preliminary Catalogue of the Birds of North Carolina, with Notes on Some of the Species" (Jour. E. Mitch. Sci. Soc., IV-2, pp. 44-87). In the introduction to this paper he states that he collected specimens at Chapel Hill from January, 1886, to the time of writing except for the fall and summer of 1886. He further states that 120 species were positively identified, 112 of which were preserved, but he fails to list them.

In 1899, T. Gilbert Pearson (now president emeritus of the National Association of Audubon Societies) compiled "A Preliminary Catalogue of the Birds of Chapel Hill, with Brief Notes on Some of the Species" (Jour. E. Mitch. Sci. Soc., XVI-1, pp. 33-51) embodying the results of

two years (exclusive of summers) of his own studies and the data recorded by Professor Atkinson. He obtained this latter, he states, from a newspaper clipping, "Preliminary List of Birds Collected at Chapel Hill," by Professor Atkinson presumably published about the same time as his North Carolina list. Dr. Pearson's list contains 134 species, 119 of which came under his own observation.

Mr. C. S. Brimley of Raleigh has kindly sent us some scattered notes taken by Mr. G. S. MacNider at Chapel Hill, 1889-1902, which contain authentic records of two additional species, the Wood Ibis and Canada Goose, bringing the total to 136 species.

Alexander Feild in 1912 published a list entitled "Notes on the Birds of Chapel Hill with Particular Reference to their Migration" (Jour. E. Mitch. Sci. Soc., XXVIII-1, pp. 16-33). He lists with notes and some migration data 107 species observed during his four undergraduate years (exclusive of summers). Six species are recorded for the first time, bringing the total recorded number of species to 142.

Aside from these early observers there has been little interest in and very little recorded about local avifauna up until the beginning of our work. The occurrence of only three additional species comes to light, as far as we can determine, two of these being early records apparently not known to Pearson and Feild. These are: Passenger Pigeon (now extinct), one shot in 1887 by Kemp Battle, Jr., Barn Owl taken by T. E. Hester in 1909, and Evening Grosbeak, taken by W. C. Coker in 1922. Thus, at the beginning of our work the "list" was still in an embryonic state totaling 145 species.

Just when our observations began would be hard to say; we have more or less grown up with bird study. Individually we began keeping records about 1928. In 1931 we organized a club and conducted work on a more intensive and concerted scale. Coker and Odum conducted a bird column in the Chapel Hill *Weekly* during 1931 for the purpose of popularizing and stimulating bird study. Detailed records for all seasons have been kept during the four years 1931-34. The greater part of our work has been based on the observation of the living bird in the field, emphasizing occurrence, distribution, and migration; but we have taken for purposes of identification a number of rarer and difficult species. Taylor and Breckenridge have built up small but excellent private collections of bird skins, and we have added some to the University collection. Care and accuracy have been stressed in all field observations. During our study 50 species have been recorded for the first time, making a total of 195 species now known from Chapel

Hill. Many additional data have been added for species already on record. A total of 188 species have actually come under our observation.

The field. The territory covered by this list is included within a six-mile radius of the town. It covers, then, the extreme southeast corner of Orange County, a small section of Durham County west to New Hope Creek, and a small area of Chatham County to the south. This area which we shall simply call Chapel Hill has an average elevation of about 500 feet and is located on the eastern edge of the piedmont region of the state in the Upper Austral or Carolinian life zone. Just a few miles to the east, however, at Raleigh, the Lower Austral zone begins to appear. Therefore, birds generally restricted to that region (i.e., the Chuck-will's-widow and the Prothonotary Warbler) might be expected to occur at Chapel Hill at least rarely.

The region is not extensively cultivated and is well-wooded, well-watered, and rather hilly. Much of the natural forest is made up of deciduous trees of the oak-hickory-maple-dogwood association; there are, however, many pure pine stands, and a great deal of mixed wood containing both evergreen and broad-leaved trees. One or two fairly extensive swampy or marshy lowgrounds exist on Bowlin's and New Hope creeks, but no extensive swamps or open marsh lands and no natural ponds of any size are present. Three creeks, Bowlin's, Morgan's, and New Hope, fed by numerous small streams, flow through the Chapel Hill vicinity in a general southeast direction to unite eventually and form a branch of the Cape Fear river.

Ornithologically speaking, Chapel Hill has remained thus from the beginning of bird study until the present time, except for one important change. The construction of two dams in 1932 to form the extensive University Lake just east of town and the much smaller Hogan's Pond to the north, has provided large bodies of water heretofore lacking. Consequently water birds of many species which were previously unknown or were very rarely known to visit our vicinity now are attracted. The status of many, however, is subject to change because of the instability of the lake biologically.

A mention of a few of the places which we have found richest in bird life and which we have most frequently visited should be of interest to future students. Foremost is the strip of remarkably diversified country, known locally as Strowd's lowgrounds, stretching along Bowlin's Creek east of the Durham highway. There is always something interesting to see here even when things are dull elsewhere. The lake and pond mentioned above, together with the surrounding woods and fields,

are, of course, excellent field localities. Morgan's Creek as well as the portion of Bowlin's Creek west of the Durham highway are good, especially in winter and spring. The New Hope swamp off the Raleigh road seems to be very good for spring transient warblers and for some of the wilder birds. The University-owned woods south of the campus and Battle Park are excellent for fall warblers.

Short review of the seasons; winter. Birds are by no means scarce in winter at Chapel Hill. In fact, one is likely to see more individual birds on a winter's hike than on one in summer and perhaps as many species, because of the flocking tendencies of birds in winter and because of the great abundance of wintering native sparrows of several species. The seven "Christmas censuses" taken by us and published in *Bird-Lore* magazine from 1928 through 1934 give a pretty good cross-section of the winter bird life. These censuses, which are one day lists, range as follows: 1928, 46 species; 1929, 37 species; 1930, 47 species; 1931, 54 species; 1932, 63 species; 1933, 75 species; and 1934, 68 species; the number of individuals ranging between one thousand and three thousand. The great difference in the number of species does not mean that birds were more abundant in latter years, but simply that we have come to know the country better and know where to locate the less common birds. However, the presence of the lake helped greatly in increasing the list for the past three years. Close to 100 species, exclusive of early and late migrants, have been recorded by us during the winter. Of these we can conservatively state that about 60 are of regular occurrence; that is, if one knows where to look for them he stands a very good chance of finding any or all of about that many on a given day. The occurrence of other species is not so certain; they may be present some years, absent others, or at one time during the winter and not at another; one may be able to find them, but cannot depend on it. Some other species are rare with but one or two winter records.

As to the relative abundance of the commonest winter species the following statistics from the seven censuses is interesting though not conclusive: The White-throated Sparrow and the Slate-colored Junco or Snowbird, polling about the same number of individuals, are easily the most abundant. The White-throat is perhaps the more widely distributed. Red-winged Blackbird (local, but large flocks), Song Sparrow, Goldfinch, Swamp Sparrow, Cardinal, Bluebird, and Field Sparrow follow in respective order. Except for the Red-winged Blackbird and the Bluebird, all these species are members of the Finch and Sparrow family, subsisting mainly on seeds in winter.

Spring. Although considerable migratory movement among wintering Robins, Rusty Blackbirds, and others begins in February and early March, we consider the spring migration "officially" opened by the arrival of the early summer Warblers and Vireos during the last two weeks in March. The spring is the richest season in bird life because of the spectacular nature of the spring migration, bringing as it does within a few weeks an onrush of full-plumaged, singing birds, some of which settle down here and start nesting and others which pass on to the north. The last two weeks in March and the first three in April at Chapel Hill find most of the summer residents arriving, every day, almost, bringing a new one. The first individuals to arrive are, as a general rule, the birds which nest here, and not those which nest further north, which pass through later. Also several transient species put in their appearance during these weeks. However, the last two weeks in April and the first half of May is the real transient period when anything, however unexpected, may turn up. During the whole spring the winter resident species are continually leaving for northern nesting grounds, but since they do not announce their departure with such certainty as the summer birds announce their arrival, it is often hard to chart accurately their departure. For complete migration data, however, it is necessary to keep records of this class as much as possible.

The height of the transient period, the last week in April and the first week in May, is the climax to the whole spring migration at Chapel Hill. At this time the largest single day lists of the year are obtainable, because transients, summer residents, winter residents, and permanent residents are present, bringing together a greater variety of species than is possible at any other time of the year. Our largest single day list stands at 101 species recorded on May 5, 1934.

After this climax the spring migration quickly tapers off and "officially" closes with the departure of the last Black-poll Warbler between May 26 and June 1.

Nesting season. At this latitude the breeding season is relatively long, including not only the summer months but the spring as well. Many species regularly raise two broods a season, and some three; others, particularly those that start late, raise only one. We have actual breeding records for 73 species at Chapel Hill so far. These are starred in the list. At least 15 additional species undoubtedly breed, with a likelihood of others. Several species are present during the breeding season which probably do not breed here.

The English Sparrow is one of the earliest birds to begin nesting, often

commencing during February or March. We have a record of a Starling nest containing young on Feb. 27, 1932. The Great Horned Owl is said to lay in February, although we have no nesting records here. The latter part of March finds a number of birds beginning nesting operations provided the season is not too late. Carolina Wren, Tufted Titmouse, Carolina Chickadee, Cardinal, Bluebird, and Robin are among those that lay in March or early April. By May the nesting season is in full swing, with almost every species engaged in some phase. June finds the early nesters beginning a second brood, later nesters just getting started with the first. In July the season diminishes, and by the middle of August most species have given up family cares and are undergoing the fall molt. The Goldfinch is an exception: it does not begin to nest until July, and we have a record of an occupied nest on September 4. In the case of summer resident species the breeding individuals and particularly the young of the year frequently leave for the south before the species as a whole departs, individuals from further north taking their places, as has been shown through bird banding.

Songs, so characteristic of our small birds and forming one of their strongest esthetic attractions, should be mentioned in connection with the nesting season. In the South where warm weather and food are more abundant and the breeding season longer many species may be heard for a longer portion of the year than in the north. The song is at its best during the breeding season; some species sing only at this time, but others have a much longer song period. We have not made a special study of song periods, but we can safely say that the Carolina Wren is the only bird which sings the year round here. Its loud cheery song may be heard on any day, regardless of weather conditions. The Titmouse, Cardinal, and the Pine Warbler approach the Wren in length of song period. The Vireos, all of them, are persistent singers through the summer months; the Blue-headed Vireo, which comes nearest to being a resident species, is likely to be heard at any time. Luckily, two of the village's best songsters, the Mockingbird and the Wood Thrush, have long song periods, the latter extending to late summer and the former nearly all the year round. The Brown Thrasher, which ranks with the best, on the other hand rarely sings before the middle of March or after May.

Many winter resident species, although not nesting here, give us some samples of their songs, especially on the approach of spring. The White-throated Sparrow may be heard any warm day during its long stay here (October to May).

Fall. The fall migration offers a direct contrast to the spring migration in almost every respect. The spring migration is rapid and overwhelming. It comes quickly to a climax and rapidly to an end. The birds are in full plumage and full song; they are in a hurry to get north and start nesting. The fall migration, on the other hand, is long-drawn-out; there is no climax to speak of. The birds are in their dullest plumages and rarely sing; they are in no hurry to get south, at least during the greater part of the migration period. The southward movement at Chapel Hill begins as early as the middle of July with the return of the first Sandpipers, and continues right up until the cold weather of November.

By reason of its contrasting nature, however, the fall migration is of great significance to one who is becoming acquainted with local birds, a fact which is quite often overlooked by amateur students. Many transients are rare in the spring simply because they pass through a given locality within the space of a few days, while in the fall they tarry longer and are consequently commoner. The reverse is also true, but to a less general extent. Then, also, some few species seem to take different routes for their northward and southward journeys. Therefore, a study of both migrations is necessary in determining the status of a migratory species. The Blackburnian Warbler, for instance, is a rare bird in the spring and would be pronounced a rare species if only the spring migration were taken into consideration; in the fall, however, it is not uncommon for six weeks.

Of course the dull plumages, particularly among warblers and water birds, make identification of many species more difficult in the fall, but with the excellent books now available picturing both spring and fall, adult and immature plumages, the distinguishing characters of fall plumages, with some few exceptions, can be mastered without great difficulty.

Flocking, as in winter, is very characteristic of the fall. Not only birds of the same species but birds of different species, often of widely different habits, gather together in loose companies. The woods about Chapel Hill seem very quiet and absolutely devoid of bird life in September and October. But if one wanders about for a while, he is likely to run into a lot of birds at one time, a fall troop, as we call them; the woods for a short space are alive with birds. Not only migrant species are present, but also permanent resident species, especially Titmice and Chickadees, which seem to have caught some of the migratory spirit, so to speak. It should be pointed out that the birds are not actually

migrating at such a time, because almost all birds migrate at night in extended flights (their calls can often be heard in the darkness as they pass overhead); they are merely feeding and move slowly through the woods, so that one may easily follow a troop indefinitely. Sometimes the troop travels in circles or a series of circles, sometimes just aimlessly.

Flocking is also evident in the fields and on large bodies of water in fall.

The list. The following list of the birds of Chapel Hill is constructed along the lines of the usual briefly annotated local list. The nomenclature and sequence is that of the 4th (1931) edition of the American Ornithologists' Union *Check-list*. The common or book names are placed first because they are in more general use among ornithologists and in reality are more stable than the scientific names. In a few instances "local" names, which are in general use in this section of the country, are also included (For example "rain crow" or "red-bird"). Family names are included because the families form convenient groups. Other taxonomic data are unnecessary.

Where a species is divided into two or more recognized sub-species we have listed the appropriate form as given by the *Check-list*. In case two sub-species are listed as occurring through this region (for example, Northern and Southern Flicker), both forms are named but in the absence of specimens are treated as one, since sub-species cannot be distinguished in the field. Unless stated, the naming of sub-species is not based on specimens.

Following the name of the bird comes a brief statement of its status and relative abundance, and if it is a migratory species, our extreme (earliest and latest) dates of its occurrence. If our data do not supplant that of earlier lists or if the status of a species seems to have changed radically, separate mention is made of earlier observations.

Our nesting data are meager, since the study of such, except in a few special cases, has been incidental. Wherever we have them, however, nesting dates are included just to give a rough idea of when the species may be expected to nest.

In addition to the above, we have frequently included single words, phrases, or short sentences on the local habitat, the type of country where one could best look for the particular species.

Terms used. In describing the status of a bird the usual terms are used as follows: Permanent resident or resident—found the year around; summer resident (visitor)—here for breeding season but wintering farther south; winter resident (visitor)—wintering here but nesting

farther north; transient—passing through in spring or fall or both; casual visitant—of very irregular or accidental occurrence. Because a species is a “permanent resident” does not necessarily mean that it is not migratory. There may be a considerable shifting of individuals north and south, often involving a change in sub-species, although the species as a whole is always present.

In attempting to give some idea of relative abundance, we have adopted the following terms: Common, fairly common, uncommon, scarce, and rare. These terms should not be taken too literally; birds are such motile creatures, varying in abundance from time to time, so that one may gain different impressions at different times. “Common” and “scarce,” particularly, cover a lot of ground. Also, it should be borne in mind that the terms are relative. “Irregular” and “local” are convenient terms which are also applied. In the case of water birds, for reasons already mentioned, we have refrained from attempting to indicate relative abundance, and have recorded only facts of observation.

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The following list contains 195 named species. The symbol * indicates breeding record.

Family GAVIIDAE. Loons

COMMON LOON. *Gavia immer immer*. Transient visitor. Two specimens recorded by Pearson in 1898 remain the only positive records, but Warden Sykes at University Lake has on several occasions described large birds fitting the description of Loons which he saw in late fall, 1933 and 1934; chiefly coastwise.

Family COLYMBIDAE. Grebes

HOLBOELL'S GREBE. *Colymbus grisegena holboelli*. Like the Loon this species is chiefly a coastwise bird in winter, but it appears to occur inland more rarely. The only record here is a specimen taken by Prof. Atkinson in 1887.

HORNED GREBE. *Colymbus auritus*. Status much as with the preceding two species, but seems to be of more regular occurrence. We have records for November 12, 1931; October 23, 1932; March 26, 1933; and December 23, 1933.

PIED-BILLED GREBE. *Podilymbus podiceps podiceps*. Common transient and winter resident; it is almost a permanent resident, being recorded in every month but May and June (i.e., July 21–April 18), but there are no indications that this species breeds here, chiefly because there are no suitable places at present, though it is possible that it does breed somewhere not far from this locality.

Family PHALACROCORACIDAE. Cormorants

DOUBLE-CRESTED CORMORANT. *Phalacrocorax auritus auritus*. Rare transient. Single individuals were seen on May 21 and November 5, 1933, at University Lake (Odum).

Family ARDEIDAE. Herons and Bitterns

GREAT BLUE HERON. *Ardea herodias herodias*. Occurs sparingly throughout the year; commonest in late March and April; rare in winter. Not known to breed.

AMERICAN EGRET. *Casmerodius albus egretta*. Post-breeding-season visitor (i.e., after the nesting season is over on the coast, the birds wander inland and northward until driven south again at the approach of fall), July 2–September 25. During Pearson's time this bird was very rare, on the verge of extinction by plume hunters, but now with protection the bird has recovered some of its former numbers. Since the construction of University Lake it has been more or less frequent at Chapel Hill.

SNOWY EGRET. *Egretta thula thula*. Post-breeding-season visitor. Like the preceding, this species was once near extermination; today it is still much less common than the American Egret. Single birds were observed off and on by all of us between July 15 and September 12, 1933. This species is sometimes confused with the white immature birds of the next species.

LITTLE BLUE HERON. *Florida caerulea caerulea*. Common post-breeding-season visitor, June 18–September 30. Most of the individuals which visit us at this season are immature birds in white plumage commonly known as "little white cranes." They form a conspicuous feature of the lake in summer. The species has also been recorded twice in the spring, April 29, 1933, and May 5, 1934.

*EASTERN GREEN HERON. *Butorides virescens virescens*. Summer resident, April 2–October 4. Eggs June 7.

BLACK-CROWNED NIGHT HERON. *Nycticorax nycticorax hoactli*. Scarce spring transient, March 29–May 5. Also an immature bird either of this species or of a Yellow-crowned Night Heron was seen by Taylor July 6 and 7, 1933.

AMERICAN BITTERN. *Botaurus lentiginosus*. Has been observed throughout the year in every month except June and February, but is mostly a transient. Commonest in spring from March to May, less common in fall, rare in summer (July and August) and winter (December and January). No breeding records.

EASTERN LEAST BITTERN. *Ixobrychus exilis exilis*. Only one record, a bird seen by Odum May 24, 1931.

Family CICONIIDAE. Storks and Wood Ibises

WOOD IBIS. *Mycteria americana*. Immature male killed by G. S. MacNider, June 12, 1901, six miles south of town.

Family ANATIDAE. Swans, Geese, Ducks, and Allies

CANADA GOOSE. *Branta canadensis canadensis*. Transient. Warden Sykes reported geese from University Lake, fall of 1933. MacNider in his notes records wild geese flying over November 11, 1900. Old residents say they were not infrequent years ago. No recent bird student has seen any here.

COMMON MALLARD. *Anas platyrhynchos platyrhynchos*. Winter resident, November 5–May 7.

COMMON BLACK DUCK. *Anas rubripes tristis*. Winter resident. Usually outnumbers the preceding on the lake in winter.

AMERICAN PINTAIL. *Dafila acuta tzitzihoo*. Transient and less common winter resident, November 13–April 2.

BLUE-WINGED TEAL. *Querquedula discors*. Transient. Recorded September 17, 1932, April 17, September 12, 1933, September 19, 1934.

*WOOD DUCK. *Aix sponsa*. "Summer Duck." Resident in small numbers in suitable places. Breeds; adults with young only a little while out of the nest seen April 16, 1932, and May 7, 1933. In late summer small flocks often frequent the wooded portions of University Lake, but at other seasons they are not usually found on large bodies of open water.

REDHEAD. *Nyroca americana*. One record, March 12, 1933, a single bird observed by Jim Stephens.

RING-NECKED DUCK. *Nyroca collaris*. Winter resident. Closely resembles the Scaup, but with good binoculars at fair range one can easily make out the field marks (Male: white crescentic side mark in front of wing, white ring on bill, and dark back without any white. Female: ring bill and white eye ring).

CANVAS-BACK. *Nyroca valisineria*. Winter resident. In the winter of 1932-33 a small flock was observed continually, but it was rare in 1933-34.

LESSER SCAUP DUCK. *Nyroca affinis*. Winter resident, November 6-April 22. Also a single bird seen June 28, 1932, probably a non-breeding bird. This species seems to be more abundant in migration than the Ring-neck, but the majority of wintering birds seems to be individuals of the latter. The Greater Scaup (*Nyroca marila*), a more coastwise bird, may also occur in the Scaup flocks, but except under unusual conditions the two are not readily distinguishable in the field. Two specimens of scaup taken by Taylor proved to be Lesser Scaup.

AMERICAN GOLDEN-EYE. *Glaucionetta clangula americana*. Transient and winter visitor, March 26, April 2, November 17, and January 6.

BUFFLE-HEAD. *Charitonetta albeola*. One record, a male and two females seen November 17, 1933 (Odum).

RUDDY DUCK. *Erismatura jamaicensis rubida*. Winter resident. Regularly observed 1932-33, rare 1933-34.

HOODED MERGANSER. *Lophodytes cucullatus*. Winter resident, November 5-March 12.

RED-BREASTED MERGANSER. *Mergus serrator*. Winter, December 23, 1933; December 23, 1934; January 2, 1935.

Family CATHARTIDAE. American Vultures

*TURKEY VULTURE. *Cathartes aura septentrionalis*. "Turkey Buzzard." Common permanent resident. Breeds; nest with young in May, 1931.

*BLACK VULTURE. *Coragyps atratus atratus*. "Carrion Crow." Resident, occurs less regularly than the preceding and usually in small flocks. One breeding record, May 5, 1933 (young in nest).

Family ACCIPITRIDAE. Kites, Hawks, and Allies

SHARP-SHINNED HAWK. *Accipiter velox velox*. Winter resident, September 5-May 15. Uncommon. Perhaps also a rare summer resident and breeder as the May 15 record (specimen taken) and summer records from nearby localities would indicate.

***COOPER'S HAWK.** *Accipiter cooperii*. Resident. Commonest in winter and during the migrations. This and the preceding species, sometimes known as "blue darters," are slim, long-tailed, short-winged, slate-colored, bird-eating hawks, generally our only harmful Hawks. They stand in direct contrast with the three following species of genus *Buteo* which are heavy, long-winged, soaring, rodent-eating, conspicuous Hawks, generally beneficial. Eggs April 29, 1898 (Pearson).

EASTERN RED-TAILED HAWK. *Buteo borealis borealis*. Resident. Most conspicuous in winter. Lowgrounds.

***NORTHERN RED-SHOULDERED HAWK.** *Buteo lineatus lineatus*. Resident. More widely distributed than the Red-tail. Especially noisy in early spring. Young birds in nest April 28.

***BROAD-WINGED HAWK.** *Buteo platypterus platypterus*. Fairly common summer resident, April 7–September 6. Two nesting records: two eggs May 2, 1932; young half grown June 13, 1933. Wooded hill-sides alternating with small meadows or fields.

SOUTHERN BALD EAGLE. *Haliaeetus leucocephalus leucocephalus*. Rare visitant during migrations. Single birds observed by Pearson, March 27, 1898; Valentine, October 15 (about), 1934; and Breckenridge, November 24, 1934.

MARSH HAWK. *Circus hudsonius*. Irregular winter resident, August 19–March 26. The grassy flats and treeless marshes which the Marsh Hawk likes are generally lacking here.

OSPREY. *Pandion haliaetus carolinensis*. "Fish Hawk." Mostly transient. Common from the middle of March to May and from late August to October, but it has been observed at other times of the year: July 7, July 22, and December 23, December 24. Not known to breed.

Family FALCONIDAE. Caracaras and Falcons

EASTERN PIGEON HAWK. *Falco columbarius columbarius*. Rare transient. One observed at rest and in flight by Jim Stephens, May 3, 1934.

***EASTERN SPARROW HAWK.** *Falco sparverius sparverius*. Resident. Not common. Pearson recorded it as "moderately common" in 1899 and mentioned that a pair roosted under the eaves of New East building on the campus. Eggs May 1899 (Pearson).

Family PERDICIDAE. Partridges and Quails

***EASTERN BOB-WHITE.** *Colinus virginianus virginianus*. Common resident, but fluctuating in numbers from year to year.

Family PHASIANIDAE. Pheasants

RING-NECKED PHEASANT. *Phasianus colchicus torquatus*. Although not a native species, it is being introduced, but as yet with little success in this region. Dr. R. B. Lloyd, of Carrboro, has released several hundred. We have seen a few in the wild state.

Family MELEAGRIDIDAE. Turkeys

*EASTERN TURKEY. *Meleagris gallopavo silvestris*. Resident. Still fairly common.

Family RALLIDAE. Rails, Gallinules, and Coots

KING RAIL. *Rallus elegans elegans*. Winter resident. Very secretive, but often noisy. Marshy, reedy places.

VIRGINIA RAIL. *Rallus limicola limicola*. Winter resident. Similar to the King Rail in habits. Taken February 28 (Taylor).

SORA. *Porzana carolina*. Transient, September 8–December 23; no positive spring records.

FLORIDA GALLINULE. *Gallinula chloropus cachinnans*. One record, a specimen picked up alive on a road by Bill Hogan and procured by Odum October 16, 1934.

AMERICAN COOT. *Fulica americana americana*. Mostly fall transient, occasional in winter and spring, October 23–April 8. May 2, 1901 (G. S. MacNider).

Family CHARADRIIDAE. Plovers, Turnstones, and Surf-birds

*KILLDEER. *Oxyechus vociferus vociferus*. Resident. Commonest in winter.

Family SCOLOPACIDAE. Woodcock, Snipe, and Sandpipers

AMERICAN WOODCOCK. *Philohela minor*. Resident. Commonest in fall migration, late November and early December. Wet thickets.

WILSON'S SNIPE. *Capella delicata*. Winter resident, September 9–May 12. Occurs in large flocks in spring. Also, one seen June 18, 1934 (Breckenridge). Wet or marshy meadows.

SPOTTED SANDPIPER. *Actitis macularia*. Common transient, April 12–May 21 and July 15–September 21. Mud flats, exposed creek banks and lake shores.

EASTERN SOLITARY SANDPIPER. *Tringa solitaria solitaria*. Common transient, April 18–May 20 and July 16–October 15. Often associated with the preceding.

GREATER YELLOW-LEGS. *Totanus melanoleucus*. Scarce transient, May 3; October 15–November 18.

LESSER YELLOW-LEGS. *Totanus flavipes*. Scarce transient. So far recorded only in spring, April 27–May 3.

PECTORAL SANDPIPER. *Pisobia melanotos*. Scarce transient. Specimens taken March 29, 1931; November 18, 1933; and September 19, 1934.

LEAST SANDPIPER. *Pisobia minutilla*. Scarce transient. So far recorded only in spring, May 5–May 21.

Family LARIDAE. Gulls and Terns

HERRING GULL. *Larus argentatus smithsonianus*. Casual visitant, spring and fall. Normally residing on the coast, this "sea gull" sometimes wanders or is driven far inland. A large flock appeared on the lake April 16, 1933, and some remained until April 22. In the fall of 1934 they again appeared, and exhausted birds were secured December 1 and December 4. In both cases their appearance followed widespread heavy rains.

BONAPARTE'S GULL. *Larus philadelphia*. Rare visitant; one record, an individual in winter plumage observed carefully by Odum November 13, 1932, at the lake.

COMMON TERN. *Sterna hirundo hirundo*. Rare visitant; one bird observed October 15, 1933, at the lake (Taylor, Breckenridge, and Odum).

BLACK TERN. *Chlidonias nigra surinamensis*. Scarce fall transient, August 24–September 17. Also two immature birds June 28, 1932. Unlike most Gulls and Terns of the Atlantic coast the Black Tern occurs regularly inland. During migration subsists mainly on insects taken on the wing.

Family COLUMBIDAE. Pigeons and Doves

*EASTERN MOURNING DOVE. *Zenaidura macroura carolinensis*. Permanent resident. Long breeding season.

PASSENGER PIGEON. *Ectopistes migratorius*. This once abundant now extinct species obtains a place on the list by virtue of one taken by K. P. Battle, Jr., 1887.

Family CUCULIDAE. Cuckoos, Roadrunners, and Anis

*YELLOW-BILLED CUCKOO. *Coccyzus americanus americanus*. "Rain crow." Fairly common summer resident. April 25–October 17.

BLACK-BILLED CUCKOO. *Coccyzus erythrophthalmus*. Apparently occurring only as a rare transient; October 3, 1932, and September 10, 1934.

Family TYTONIDAE. Barn Owls

BARN OWL. *Tyto alba pratincola*. Few records. Specimen taken January 26, 1909, by T. E. Hester. Two have been brought to the Zoology Department, one of them to Dr. H. V. Wilson eighteen years ago, the other killed by C. L. Rich near Mt. Carmel (2 miles south of town) on May 15, 1931. Mr. Roy Brown tells us that an owl which he is positive was a Barn Owl spent the winter of 1930-31 in his barn. Nocturnal and very secretive, the presence of this owl is often not suspected.

Family STRIGIDAE. Typical Owls

*EASTERN SCREECH OWL. *Otus asio naevius*. Resident, fairly common; locally present in town.

GREAT HORNED OWL. *Bubo virginianus virginianus*. Resident, scarce. Occasionally specimens dead or alive have been brought in from the surrounding countryside, but in the immediate vicinity of town, at least, it seems to be very rare. Several times we have thought that we heard it at a distance, but could not be positive; we have never seen one in the wild here. Pearson in 1898 gives it status then as follows: "For a large bird the horned owl is a fairly common resident in this region."

NORTHERN BARRED OWL. *Strix varia varia*. "Hoot owl." Common resident; in timber tracts and lowgrounds. Very noisy at times and frequently attracts the attention of residents in the wooded outskirts of town.

Family CAPRIMULGIDAE. Goatsuckers

CHUCK-WILL'S-WIDOW. *Antrostomus carolinensis*. Scarce spring transient and perhaps rare summer resident, April 16, 1930; April 23, 1931; April 24, 1934. Pearson heard one May 20, 1899. "During the summers of 1902 and 1903 I quite frequently heard the chuck-will's-widow calling in the woods bordering the campus" (G. S. MacNider).

EASTERN WHIP-POOR-WILL. *Antrostomus vociferus vociferus*. Common summer resident. Earliest arrival, March 31.

EASTERN NIGHTHAWK. *Chordeiles minor minor*. Summer resident, April 25-September 20. Commonest during migrations, especially in fall from the middle of August to the middle of September. April 11-October 7 (Feild).

Family MICROPODIDAE. Swifts

*CHIMNEY SWIFT. *Chaetura pelagica*. Common summer resident, April 4–October 10. March 31 (Feild).

Family TROCHILIDAE. Hummingbird

*RUBY-THROATED HUMMINGBIRD. *Archilochus colubris*. Common summer resident, April 4–October 10.

Family ALCEDINIDAE. Kingfishers

*EASTERN BELTED KINGFISHER. *Megaceryle alcyon alcyon*. Resident. Uncommon in winter, common in summer. Occupied nests, April 12 and May 1. Creeks, University Lake, and ponds.

Family PICIDAE. Woodpeckers

NORTHERN FLICKER. *Colaptes auratus luteus*.

*SOUTHERN FLICKER. *Colaptes auratus auratus*. Common resident. Eggs May 20. Frequents woods and more open country alike.

*SOUTHERN PILEATED WOODPECKER. *Ceophloeus pileatus pileatus*. Resident. A few can always be found. A pair nested almost within the town limits in 1931, and again in 1934 in another unexpected location.

*RED-BELLIED WOODPECKER. *Centurus carolinus*. Common resident, especially along water courses.

*RED-HEADED WOODPECKER. *Melanerpes erythrocephalus*. Common resident, but local in distribution. Less common in winter. Often conspicuous on the University campus. Eggs May 7.

YELLOW-BELLIED SAPSUCKER. *Sphyrapicus varius varius*. Common winter resident, October 3–April 17. The only injurious woodpecker. April 26 (Feild).

*SOUTHERN HAIRY WOODPECKER. *Dryobates villosus auduboni*. Common resident. A bit more shy than the downy.

*SOUTHERN DOWNY WOODPECKER. *Dryobates pubescens pubescens*. Common resident. Everywhere.

RED-COCKADED WOODPECKER. *Dryobates borealis*. Recorded only by Alexander Feild: "I found it a not uncommon bird in Battle's Park and other neighboring woods—seen by me five times in the months of March and April, 1909, the latest being on April 17."

Family TYRANNIDAE. Flycatchers

EASTERN KINGBIRD. *Tyrannus tyrannus*. Common summer resident. Earliest date April 17. Open country. September 3 (Feild).

*NORTHERN CRESTED FLYCATCHER. *Myiarchus crinitus boreus*. Common summer resident, April 16–September 25. Woods.

*EASTERN PHOEBE. *Sayornis phoebe*. Common resident. More common in winter. Under bridges and porch roofs are its favorite nesting places.

*ACADIAN FLYCATCHER. *Empidonax virescens*. Common summer resident, April 25–September 23. Eggs June 1. Characteristic of the many heavily-wooded streams around Chapel Hill.

*EASTERN WOOD PEWEE. *Myiochanes virens*. Common summer resident, April 24–October 14. Eggs May 10. Everywhere in woods.

Family ALAUDIDAE. Larks

NORTHERN HORNED LARK. *Otocoris alpestris alpestris*.

PRAIRIE HORNED LARK. *Otocoris alpestris praticola*. Irregular in winter. Observed in only two winters out of six: 1932–33 and 1933–34 at irregular dates from November 10 to January 6. November 23, 1898 (Pearson).

Family HIRUNDINIDAE. Swallows

TREE SWALLOW. *Iridoprocne bicolor*. Common transient, April 8–April 28 and September 10–September 19.

BANK SWALLOW. *Riparia riparia riparia*. Scarce transient, April 16–May 12. No fall records.

*ROUGH-WINGED SWALLOW. *Stelgidopteryx ruficollis serripennis*. "Bank Swallow." Common summer resident. Earliest date March 28. Eggs May 21; young in nest June 25. Water.

BARN SWALLOW. *Hirundo erythrogaster*. Common transient, April 8–May 21 and August 10–September 19.

NORTHERN CLIFF SWALLOW. *Petrochelidon albifrons albifrons*. Scarce transient, May 3, September 10, and September 12.

*PURPLE MARTIN. *Progne subis subis*. Common transient, particularly in late summer, but only, at present, a rare summer resident. March 22–September 10. We know of no stable colony in our vicinity at the present time, but there have been nesting birds in the town in the past few years, and birds are now occasionally seen during the breeding season.

Family CORVIDAE. Jays and Crows

*NORTHERN BLUE JAY. *Cyanocitta cristata cristata*. Common resident. Eggs May 7.

EASTERN CROW. *Corvus brachyrhynchos brachyrhynchos*.

*SOUTHERN CROW. *Corvus brachyrhynchos paulus*. Common resident.

Family PARIDAE. Titmice

*CAROLINA CHICKADEE. *Penthestes carolinensis carolinensis*. Common resident. Eggs March 30. Woods and wooded places.

*TUFTED TITMOUSE. *Baeolophus bicolor*. Common resident. Eggs March 29. Woods.

Family SITTIDAE. Nuthatches

*WHITE-BREASTED NUTHATCH. *Sitta carolinensis carolinensis*. Common resident. Large oaks.

RED-BREASTED NUTHATCH. *Sitta canadensis*. Irregular winter visitor, October 10–May 21. Observed in winters 1929–30, 1931–32, 1933–34. Entirely absent in other winters. Pines, usually high up among small limbs.

*BROWN-HEADED NUTHATCH. *Sitta pusilla pusilla*. Local resident. Bird digging cavity March 18; eggs March 29. Open pine woods. Except at breeding season almost always observed in companies, probably family groups.

Family CERCITHIDAE. Creepers

BROWN CREEPER. *Certhia familiaris americana*. Fairly common winter resident, October 10–April 20.

Family TROGLODYTIDAE. Wrens

*EASTERN HOUSE WREN. *Troglodytes aedon aedon*. Summer resident. Several years ago we considered it scarce and as occurring only as a transient, but in the past two or three years it has become a fairly common, though local, breeder.

EASTERN WINTER WREN. *Nannus hiemalis hiemalis*. Common winter resident, September 23–April 28. Tangles near water.

*CAROLINA WREN. *Thryothorus ludovicianus ludovicianus*. Common resident. Often nests in unexpected places about dwellings. Eggs March 26.

BEWICK'S WREN. *Thryomanes bewicki bewicki*. Winter visitor. Our only record is a bird which Dr. Valentine observed off and on at his home February and March 1935. Sang frequently.

LONG-BILLED MARSH WREN. *Telmatodytes palustris palustris*. Scarce transient, April 28–May 9 and September 20–October 7.

SHORT-BILLED MARSH WREN. *Cistothorus stellaris*. Scarce transient, April 28–May 12 and August 19–October 7.

Family MIMIDAE. Mockingbirds and Thrashers

*EASTERN MOCKINGBIRD. *Mimus polyglottos polyglottos*. Common resident. Open locations, especially near habitations.

*CATBIRD. *Dumetella carolinensis*. Common summer resident, April 18–October. Also recorded in early winter: November 24, 1934; December 23, 1931, 1933, and 1934. And March 21, 1935. Shrubbery and thickets.

*BROWN THRASHER. *Toxostoma rufum*. Common resident, less common in winter. Eggs April 30. Shrubbery and thickets.

Family TURDIDAE. Thrushes, Bluebirds, Stonechants, Solitaires

EASTERN ROBIN. *Turdus migratorius migratorius*.

*SOUTHERN ROBIN. *Turdus migratorius achrusterus*. Common resident. Abundant during migrations. In winter, flocks in woods and creek bottoms.

*WOOD THRUSH. *Hylocichla mustelina*. Common summer resident, April 7–October 13. Eggs May 10. Very characteristic of all woodlands.

EASTERN HERMIT THRUSH. *Hylocichla guttata faxoni*. Common winter resident, October 21–April 23. We have heard this famed songster sing not infrequently while with us, but although it sometimes reaches the volume, it never approaches the quality of tone which it achieves in its northern nesting grounds.

OLIVE-BACKED THRUSH. *Hylocichla ustulata swainsoni*. Common transient, April 22–May 18 and September 18–October 15. Several specimens have been taken.

VEERY. *Hylocichla fuscescens fuscescens*. Uncommon transient, May 8–May 23; no fall records.

*EASTERN BLUEBIRD. *Sialia sialis sialis*. Common resident. Eggs April 5. Gathers in small flocks in winter.

Family SYLVIIDAE. Gnatcatchers and Kinglets

*BLUE-GRAY GNATCATCHER. *Polioptila caerulea caerulea*. Common summer resident, March 24–October 4. Begins nesting almost immediately on its arrival in spring. Along water courses.

EASTERN GOLDEN-CROWNED KINGLET. *Regulus satrapa satrapa*. Common winter resident, October 10–April 17. Pine woods.

EASTERN RUBY-CROWNED KINGLET. *Corthylio calendula calendula*. Common winter resident, September 29–May 6. Less common than the preceding in winter, but becomes abundant in spring migration.

Family MOTACILLIDAE. Wagtails and Pipits

AMERICAN PIPIT. *Anthus spinoletta rubescens*. Winter resident, November 7–April 4. Seems to be commonest in early winter. Flocks in open fields. October 17 (Feild).

Family BOMBYCILLIDAE. Waxwings

CEDAR WAXWING. *Bombycilla cedrorum*. Resident. Irregular in occurrence at all times and scarce in summer; only a few scattered records between May and October. No breeding records.

Family LANIIDAE. Shrikes

LOGGERHEAD SHRIKE. *Lanius ludovicianus ludovicianus*.

MIGRANT SHRIKE. *Lanius ludovicianus migrans*. Scarce; irregular, scattered dates, mostly in winter, as follows: December 10, 1930; November 15, 1931; January 4, September 9, 1932; January 1 and 3, July 10, 1933; February 24, April 29, September 10 and 15, 1934.

Family STURNIDAE. Starlings

*STARLING. *Sturnus vulgaris vulgaris*. Common resident. Introduced into this country in 1891. As nearly as we can tell was first observed in Chapel Hill in the winter of 1925. Now breeds commonly. Nest containing young birds noted February 27 (Breckenridge).

Family VIREONIDAE. Vireos

*WHITE-EYED VIREO. *Vireo griseus griseus*. Common summer resident, earliest arrival March 25. Thickets and tangles, especially along water.

*YELLOW-THROATED VIREO. *Vireo flavifrons*. Common summer resident, April 3–October 7. Inhabits woods and shade trees as the Red-eye, but not so numerous.

BLUE-HEADED VIREO. *Vireo solitarius solitarius*.

*MOUNTAIN SOLITARY VIREO. *Vireo solitarius alticola*. The Solitary Vireo is most common as a transient from about March 16 to May and from the middle of September to November, but is also a local summer resident in certain pine woods and occurs sparingly in winter (January 2 and 3, 1934). *Alticola* is the breeding form and *solitarius* the transient form as given by the *A. O. U. Check-List*.

*RED-EYED VIREO. *Vireo olivaceus*. Common summer resident, April 16–October 11. Everywhere in woods.

Family COMPSOTHTLYPIDAE. Wood Warblers

*BLACK AND WHITE WARBLER. *Mniotilta varia*. Summer resident, commonest during the migrations, March 18–October 12. Eggs May 10

PROTHONOTARY WARBLER. *Protonotaria citrea*. One record so far, May 5, 1934 (Taylor, Breckenridge; New Hope swamp). A swamp-loving lower austral species; reported as regular summer resident at Raleigh.

WORM-EATING WARBLER. *Helmitheros vermivorus*. Scarce transient, April 27–May 5 and August 31–September 5; one summer record, June 27, 1931. A low-ranging bird frequenting thickets.

GOLDEN-WINGED WARBLER. *Vermivora chrysoptera*. Scarce but regular transient, more frequent in fall; April 28–May 4 and August 30–September 12.

BLUE-WINGED WARBLER. *Vermivora pinus*. Scarce transient: May 2, 3, and September 3, 7, 20.

BREWSTER'S WARBLER. *Vermivora leucobronchialis*. This hybrid between the two preceding species was observed under excellent conditions August 25, 1932 (Odum).¹ A specimen taken at Raleigh September 6, 1888, is the only other record for the state.

TENNESSEE WARBLER. *Vermivora peregrina*. Scarce fall transient, September 12–October 14. Rare in spring, specimen taken by Taylor May 3, 1932, and another seen by Dr. Valentine May 2, 1932, are our only records which, however, are the first spring records for the state.² It has been previously thought that the Tennessee Warbler migrates north wholly by way of the Mississippi Valley, but regular spring records from Washington, D. C., as well as our records would indicate that this is not entirely true.

¹ See "The Auk," Jan., 1933 (Vol. L, No. 1).

² *Ibid.*

NORTHERN PARULA WARBLER. *Compsothlypis americana pusilla*.

SOUTHERN PARULA WARBLER. *Compsothlypis americana americana*. Summer resident, April 7 to October 11, but apparently does not breed in this vicinity. It is most common in late summer and fall and least common at breeding time (May, June); however, singing individuals have been observed throughout the latter period. The species has been reported breeding in many other parts of the state, especially in the eastern section where *Usnea* "moss" (lichen), in which it so often builds, is plentiful. A bird of the tree tops. April 3 (Feild).

*EASTERN YELLOW WARBLER. *Dendroica aestiva aestiva*. Summer resident, not common; earliest arrival April 7. Fledglings observed July 7. September 20 (Feild).

MAGNOLIA WARBLER. *Dendroica magnolia*. Transient, common in fall, less common in spring: May 11–May 17 and August 29–October 19.

CAPE MAY WARBLER. *Dendroica tigrina*. Transient, April 21–May 7 and October 2–October 29. Usually a rather rare bird but sometimes occurs in numbers as between October 15 and 25, 1933.

BLACK-THROATED BLUE WARBLER. *Dendroica caerulescens caerulescens*. Common transient, commonest in spring; April 17–May 20 and September 8–October 10.

MYRTLE WARBLER. *Dendroica coronata*. Common winter resident, October 10–May 16. In April and early May it becomes very abundant, the wintering numbers being increased many fold by migrating birds from further south.

BLACK-THROATED GREEN WARBLER. *Dendroica virens virens*. Transient, fairly common in fall, less common in spring; April 19–May 24 and September 15–October 10.

BLACKBURNIAN WARBLER. *Dendroica fusca*. Transient, rare in spring, common in fall; April 30–May 19 and August 31–October 11.

*YELLOW-THROATED WARBLER. *Dendroica dominica dominica*. Common summer resident, March 18–October 6. Commonest along the creeks but also nests in upland woods.

CHESTNUT-SIDED WARBLER. *Dendroica pennsylvanica*. Transient, commonest in fall; April 25–May 15 and August 25–September 29.

BAY-BREASTED WARBLER. *Dendroica castanea*. Transient, rare in spring, May 11 and 12, 1933, only records; apparently much more common in fall. Although the Bay-breast and the next species, the Black-poll, are very different in the spring plumages they are so much alike in the fall that identification without specimens is hazardous; if there is a large distinct chestnut side patch the bird can be named a Bay-breast,

but if there is little or no chestnut, as in the majority of birds, positive identification of the living bird, we think, is impossible. Therefore, we will say that a specimen taken by Odum October 7, 1934 (and two taken by Pearson October 2 and 8, 1897) are the only positive fall records, but that we have enough fairly positive records (chestnut-sided individuals) to indicate that the species is not uncommon in the fall.

BLACK-POLL WARBLER. *Dendroica striata*. Transient, very common in spring, April 20–June 1, apparently much rarer in fall. We have a number of sight records but are inclined to think some of them at least should fall under the Bay-breast, therefore, all are discarded. The only positive fall records are: Single specimens taken by Breckenridge September 1933, Odum October 14, 1934, and Pearson October 9, 1897. More specimens will have to be taken to clarify the fall status of the Bay-breast and the Black-poll here.³

***NORTHERN PINE WARBLER.** *Dendroica pinus pinus*. Common resident. Eggs April 15. Almost a part of the pines themselves.

***NORTHERN PRAIRIE WARBLER.** *Dendroica discolor discolor*. Common, somewhat local summer resident; April 10–October 1. Bush covered fields.

PALM WARBLER. *Dendroica palmarum palmarum*.

YELLOW PALM WARBLER. *Dendroica palmarum hypochrysea*. Irregular transient, March 23–April 29 and September 11–October 25.

***OVENBIRD.** *Seiurus aurocapillus*. Common summer resident, commonest during the migrations, April 5–October 8. Eggs May 12. Woods with not too much undergrowth.

NORTHERN WATER-THRUSH. *Seiurus noveboracensis noveboracensis*, Common transient, April 22–May 16 and August 28–October 3. Very similar to the next in plumage but notes quite different.

***LOUISIANA WATER THRUSH.** *Seiurus motacilla*. Common summer resident. Earliest arrival, March 18. Streams.

***KENTUCKY WARBLER.** *Oporornis formosus*. Common summer resident, earliest arrival, April 28. Damp ravines.

NORTHERN YELLOW-THROAT. *Geothlypis trichas brachidactyla*.

***MARYLAND YELLOW-THROAT.** *Geothlypis trichas trichas*. Common

³ In a recent article (Wilson Bulletin, Sept. 1934) on the distribution of these two warblers in the Southeast, Thomas Burleigh concluded after field work in western North Carolina, South Carolina, and Georgia that the Black-poll in fall, south of Washington, D. C., at least, migrates chiefly on the coast and is therefore rare in the interior at that season. This agrees with the facts set down above, except that the Black-poll does occur at Chapel Hill in fall; how common it is we can not say as yet.

summer resident, March 24–October 18. Also December 23, 1934. Everywhere in weeds, tangles, and thickets in open country.

*YELLOW-BREASTED CHAT. *Icteria virens virens*. Common summer resident, April 22–September 20. Thickets in open country.

*HOODED WARBLER. *Wilsonia citrina*. Common summer resident, April 9–September 28. Eggs May 11. Lush growth along woodland streams.

WILSON'S WARBLER. *Wilsonia pusilla pusilla*. Rare transient, September 23, 1933, only record (Odum, Breckenridge).

CANADA WARBLER. *Wilsonia canadensis*. Uncommon transient, May 5–May 17 and August 29–September 16.

*AMERICAN REDSTART. *Septophaga ruticilla*. Common summer resident, April 8–October 11. Eggs May 19. Abundant everywhere in woods during migrations, restricted to water courses during breeding season.

Family PLOCEIDAE. Weaver Finches

*ENGLISH SPARROW. *Passer domesticus domesticus*. Common resident; fortunately not over abundant at Chapel Hill.

Family ICTERIDAE. Meadowlarks, Blackbirds, Orioles

BOBOLINK. *Dolichohyx oryzivorus*. Irregular transient, April 13–May 5 and September 10–September 20. May 20 (Pearson), April 3, 1908 (Feild).

EASTERN MEADOWLARK. *Sturnella magna magna*.

*SOUTHERN MEADOWLARK. *Sturnella magna argutula*. "Field Lark." Common transient, fairly common winter resident, local summer resident. Eggs May 15. Grassy fields.

*EASTERN RED-WINGED BLACKBIRD. *Agelaius phoeniceus phoeniceus*. Common resident. Large flocks during migrations and in winter; breeds in colonies in suitable marshy places.

*ORCHARD ORIOLE. *Icterus spurius*. Fairly common summer resident, April 23–August 1. Groves in vicinity of open country.

BALTIMORE ORIOLE. *Icterus galbula*. Scarcely transient; May 4 (1930) and August 23–September 10.

RUSTY BLACKBIRD. *Euphagus carolinus*. Winter resident, commonest during the migrations, November 5–April 22. October 17, 1900 (G. S. MacNider).

PURPLE GRACKLE. *Quiscalus quiscula quiscula*.

BRONZED GRACKLE. *Quiscalus quiscula aeneus*. Transient and less

common winter resident, October 7–March 28. Of six specimens of grackle taken five have been Bronzed and one Purple.

COWBIRD. *Molothrus ater ater*. Apparently rare. Two records, December 18 and 23, 1934.

Family THRAUPIDAE. Tanagers

SCARLET Tanager. *Piranga erythromelas*. Common transient, April 26–May 18 and September 16–October 15.

*SUMMER Tanager. *Piranga rubra rubra*. "Summer redbird." Common summer resident, April 7–October 1. Woods.

Family FRINGILLIDAE. Grosbeaks, Finches, Buntings, Sparrows

*EASTERN CARDINAL. *Richmondia cardinalis cardinalis*. "Redbird." Common resident. Eggs April 5.

ROSE-BREADED GROSBEAK. *Hedymeles ludovicianus*. Uncommon transient, April 24–May 9 and September 18–October 12.

*EASTERN BLUE GROSBEAK. *Guiraca caerulea caerulea*. Uncommon summer resident, April 28–September 12.

*INDIGO BUNTING. *Passerina cyanea*. Common summer resident, earliest arrival April 25. Open country.

EASTERN EVENING GROSBEAK. *Hesperiphona vespertina*. Two individuals taken by Dr. W. C. Coker March 8, 1922.

EASTERN PURPLE FINCH. *Carpodacus purpureus purpureus*. Common winter resident, September 12–April 24. Often very common in spring feeding on buds of elms and other trees.

NORTHERN PINE SISKIN. *Spinus pinus pinus*. Erratic winter visitor, December 12–January 10; observed winters of 1931–32 and 1933–34. April 23–May 6, 1911 (Feild).

*EASTERN GOLDFINCH. *Spinus tristis tristis*. Common resident. Young in nest September 4. Like the Purple Finch very conspicuous in budding trees in early spring. Flocks for a large part of the year.

RED-EYED TOWHEE. *Pipilo erythrophthalmus erythrophthalmus*. Common winter resident, October to May, rare summer resident. Pair observed continually summer of 1931 and at another place in 1932, but no nest found; immature bird with streaked breast July 21, 1930.

EASTERN SAVANNAH SPARROW. *Passerculus sandwichensis savanna.*, Common winter resident, September 9–May 12. One taken June 22 1933, (Taylor) was badly infected with parasitic worms. Grassy fields, damp or dry.

EASTERN GRASSHOPPER SPARROW. *Ammodramus savaanarum aus-*

tralis. Uncommon summer resident, earliest arrival April 23. Pearson (1898) states "seen in winter and spring," but gives no specific dates.

EASTERN HENSLOW SPARROW. *Passerherbulus henslowi susurrans*. Not uncommon summer resident, April 28–October 7. As far as we are aware this species has not been reported summering south of northern Virginia.⁴ Female ready to lay taken (Taylor) and several pairs have show unmistakable evidences of breeding. Damp, lush meadows.

EASTERN VESPER SPARROW. *Pooectes gramineus gramineus*. Irregular winter visitor, October 28–April 24.

***BACHMAN'S SPARROW.** *Aimophila aestivalis bachmani*. Rare summer resident. Birds have been observed and heard at at least two separate localities (Odum). Nest recorded and nesting bird taken by Atkinson.

SLATE-COLORED JUNCO. *Junco hyemalis hyemalis*. "Snowbird." Common winter resident, October 22–May 4. Everywhere.

EASTERN TREE SPARROW. *Spizella arborea arborea*. One seen with White-throats January 4, 1935, by Dr. Valentine. Attempts to collect failed. "Listed by Prof. Atkinson probably as a winter occurrence" (Pearson); the latter statement alone in the absence of details or specimens would not be enough to keep the species on the list, in our opinion.

***EASTERN CHIPPING SPARROW.** *Spizella passerina passerina*. Common summer resident, March to November, local and irregular winter resident; observed winters of 1931–32 and 1933–34. Lawns and gardens in summer.

***EASTERN FIELD SPARROW.** *Spizella pusilla pusilla*. Common resident. Bush and brier covered fields.

WHITE-THROATED SPARROW. *Zonotrichia albicollis*. Common winter resident, September 29–May 17. Everywhere.

EASTERN FOX SPARROW. *Passerella iliaca iliaca*. Fairly common winter resident, November 5–April 7. Thickets.

SWAMP SPARROW. *Melospiza georgiana*. Common winter resident, October 6–May 21. Damp, boggy, marshy or swampy places.

EASTERN SONG SPARROW. *Melospiza melodia melodia*. Common winter resident, September 20–May 3. Thickets and hedgerows, especially along water.

THE HYPOTHETICAL LIST

(Records of the following species are not considered positive)

GREEN-WINGED TEAL. *Nettion carolinense*. March 5, 1934, not positive of identification (Breckenridge and Hairston). Should occur.

⁴ See "The Auk," April 1933.

AMERICAN MERGANSER. *Mergus merganser americanus*. March 22, 1934, seven large mergansers, identification not positive. Should occur.

PHILADELPHIA VIREO. *Vireo philadelphicus*. May 2, one bird, not absolutely sure (Dr. Valentine). A rare transient species.

LINCOLN SPARROW. *Melospiza lincolni lincolni*. April 28, not positive (Dr. Valentine). A more western species; would be casual here in migrations.

APPENDIX

A LIST OF THE SPECIES FIRST RECORDED DURING OUR WORK, 1928-1935:

50 SPECIES

Horned Grebe	Greater Yellowlegs
Double-crested Cormorant	Lesser Yellowlegs
Snowy Egret	Pectoral Sandpiper
Little-blue Heron	Least Sandpiper
Black-crowned Night Heron	Herring Gull
Least Bittern	Bonaparte's Gull
Mallard	Common Tern
Black Duck	Black Tern
American Pintail	Black-billed Cuckoo
Blue-winged Teal	Bank Swallow
Redhead	Cliff Swallow
Ring-neck Duck	Red-breasted Nuthatch
Canvas-back	Bewick's Wren
Lesser Scaup	Long-billed Marsh Wren
American Golden-eye	Short-billed Marsh Wren
Buffle-head	Starling (introduced)
Ruddy Duck	Prothonotary Warbler
Hooded Merganser	Golden-winged Warbler
Red-breasted Merganser	Blue-winged Warbler
Osprey	Brewster's Warbler (a hybrid)
Pigeon Hawk	Tennessee Warbler
Ring-necked Pheasant (introduced)	Wilson's Warbler
King Rail	Canada Warbler
Virginia Rail	Cowbird
Florida Gallinule	Henslow Sparrow

UNIVERSITY OF NORTH CAROLINA,
CHAPEL HILL, N. C.

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EXPLANATION OF PLATE 64

- Fig. 1. In the heart of Strowd's lowgrounds in winter. Haunt of the Wood Duck, Red-bellied Woodpecker, Red-winged Blackbird, Song and Swamp Sparrow, and many others. Photograph by Odum.
 Fig. 2. Wood Thrush, nest and young in a Dogwood. Photograph by Odum.
 Fig. 3. Woods in spring on Brierbridge Lane; dogwoods blooming, pines and oaks. The haunt of many woodland species and a favorite stop-over for transients. Photograph by Odum.
 Fig. 4. View across University Lake, a 210-acre artificial lake with a 8½ mile shore line. Photograph by Coker.
 Fig. 5. Carolina Chickadee and White-breasted Nuthatch at feeding station in winter. A good type of window feeding station supplying suet (in cage) and cracked nuts (on shelf). Photograph by Odum.
 Fig. 6. The Mother Tanager eats in style. Eugene Odum's tame wild female Summer Tanager which had the remarkable record of returning for five summers (1928-1933). Photograph by Odum.

PLATE 64

