

ILLUSTRATIONS
OF THE
NESTS AND EGGS
OF
BIRDS OF OHIO
WITH TEXT.

ILLUSTRATIONS BY
MRS. N. E. JONES.

TEXT BY
HOWARD JONES, A. M., M. D.

CIRCLEVILLE, OHIO, U. S. A.
1886.

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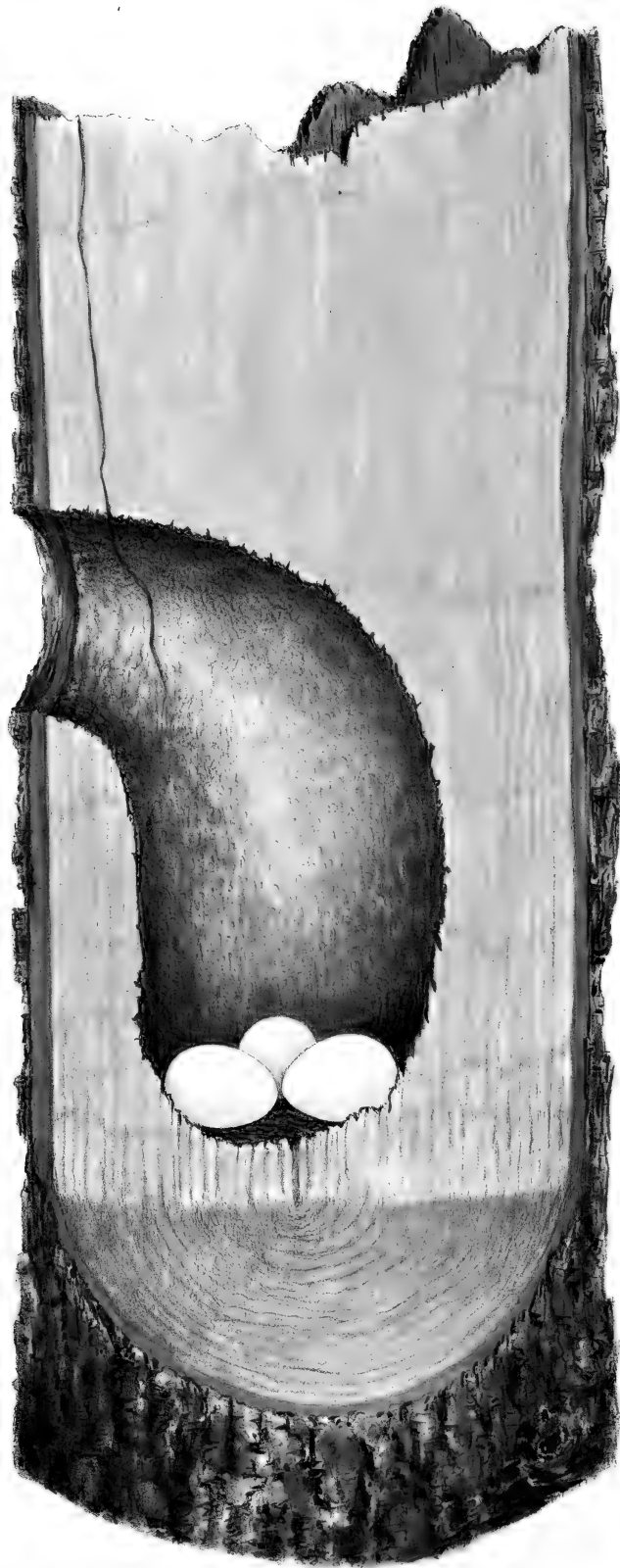
TO THE MEMORY OF

MISS GENEVIEVE ESTELLE JONES

We Dedicate this Book.

MRS. N. E. JONES.

HOWARD JONES.



Pl. XLIV.
MELANERPES ERYTHROCEPHALUS.
RED-HEADED WOODPECKER.

PLATE XLIV

MELANERPES ERYTHROCEPHALUS—Red-headed Woodpecker.

This species is a permanent resident, but not so plentiful in winter as in summer. The site for the nest is chosen in May, sometimes earlier. The pair work at intervals for several days, or even weeks, excavating the cavity, according as the wood is soft or hard, or according as they are hurried to complete it. After it is finished some days generally elapse before the eggs are deposited. The usual time for incubation is the first two weeks of June. Ordinarily but one brood is reared, but occasionally two sets of eggs are hatched, in which case a second nest may be excavated, or the first may answer for both broods.

LOCALITY:

But little preference is displayed in selecting a locality for a nest. High dry hills and damp low valleys, and all points between, are alike frequented, provided a suitable situation can be found. In the country, the majority of nests are in the dead limbs or trunks of large trees standing about the borders of woods or in fields. Frequently the nest is to be seen in a gate-post, telegraph-pole, or even in a fence-post, along the most public road. In town, the dead limb of any orchard-tree or shade-tree may furnish the site, but it is not often that the Woodpecker deserts the country for a city residence.

POSITION:

Usually the nest is in a perpendicular limb or trunk, but sometimes an horizontally inclined branch is selected. In this case the entrance is on the under surface. The distance from the ground varies from three or four to one hundred feet; ordinarily it is between eight and twenty feet.

MATERIALS:

No materials are carried for the nest. The only requisite is a suitably situated piece of wood, large enough for the cavity and soft enough for the birds to excavate. Dead wood is most frequently selected. Sometimes, however, living wood is chosen. The diameter of the wood varies from that of a man's arm to several feet. The Woodpecker begins by picking a conical hole which is projected at about right angles to the external surface until it has entered a sufficient distance, generally three or four inches, then a large curve is made, and the excavation continued at right angles to its previous course for a depth varying from two to twelve inches, usually about four inches. The entrance is circular, and rarely varies in diameter more than one-eighth of an inch from one and three-fourths inches. At the bend the cavity begins to enlarge, reaching its greatest diameter, commonly about three and one-half inches, about one inch from the bottom. Between the bend and the bottom it is not always circular, often being half an inch or more greater in one diameter than another. The eggs generally rest upon a few soft chips.

EGGS:

The complement of eggs is generally five, sometimes one more or one less. The shell is pure white,

unmarked. Some eggs are very pointed; some are nearly elliptical, while others, the most usual pattern, are about midway between these extremes.

DIFFERENTIAL POINTS:

See Table.

REMARKS:

The illustration, PLATE XLIV, represents a section of a limb containing a Red-headed Woodpecker's nest and three eggs. The size of the entrance, the curve, depth, and diameter of the cavity are about the average. The eggs show the usual shapes and sizes.

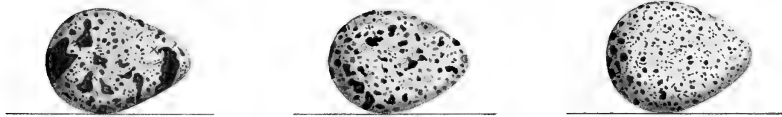
The Red-headed Woodpecker is one of our most familiar and useful birds. Being conspicuous by his national colors, and very quarrelsome and noisy, his presence is generally known wherever he is. The sexes are alike; but the young do not acquire their full coloring until nearly a year old.

The Woodpecker will make long foraging excursions to a corn-crib or a cherry-tree, taking, at each trip, a single grain of corn or single cherry. In winter Woodpeckers generally retire to the deepest forests, and glean most of their living from acorns, beech-nuts, and insects found in dead trees. Frequently they store away in the fall such provisions as acorns and grains of Indian-corn; sticking them in crevices about the bark of trees, presumably for use in winter emergencies.

With the return of spring the Red-heads leave their retirement, and, greeting the return of their southern friends, are heard about every field, as well as timber-land. Mating soon begins, and building sites are chosen. After days have been spent in constructing a home, a Bluebird or House Wren may decide to possess it, and such an unceasing war is waged against the owners that they will abandon it, rather than be in a continual fight. Sometimes a pair of Red-heads, instead of building, will select an old house of a Yellow Hammer or some other Woodpecker, or even a natural cavity. I knew one pair to raise their young in a Yellow Hammer's nest from which I had recently taken a set of eggs. The decayed wood I chopped away with a hatchet, so that my hand could enter, and in this opening I wedged a stone, leaving a hole just large enough for the Red-heads to enter. The young are homely little things, and, when full fledged, are so cowardly that they will frequently remain in the nest, calling for food, from day to day, when they are abundantly able to care for themselves. The parents are, however, exceedingly indulgent, and seem strongly attached to their offspring, feeding and protecting them even long after quitting the nest. Yet, notwithstanding this solicitude for their progeny, they frequently starve to death all of the brood but one or two. In every brood there is one bird older and stronger than the rest, and this one is sure to be on top and get his head to the hole first when the old ones come with food. Being stronger at the start than his brothers and sisters, and, each day getting more food, he gains more strength; and, gaining more strength, he gets each day more food. While this double acting system progresses, the reverse is happening to his mates, until, in extreme cases, they actually die of starvation, and are not even carried out of the nest by the parents.

A friend related to me, some years since, a curious incident, as follows: While he was riding along a country road, a medium-sized Hawk darted after a Red-headed Woodpecker that had just fled from a fence-post, and both went to the ground together. Having some curiosity to see why the Hawk, which was fluttering wildly, did not rise with the prey, and, also, a desire to free the Woodpecker, which was screaming at the top of his voice for help, he dismounted, climbed the fence, and approached the birds, when, to his surprise, he discovered that the Hawk was endeavoring to get away, but was being held by the Woodpecker. By a dexterous movement he grasped the Hawk, and, with difficulty, freed him from the grip of his antagonist, which held him firmly about the leg with one foot, while, with the other, he clung to a small root.

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PLXLV. Fig 1.
TRINGOIDES MACULARIUS.
SPOTTED SANDPIPER.

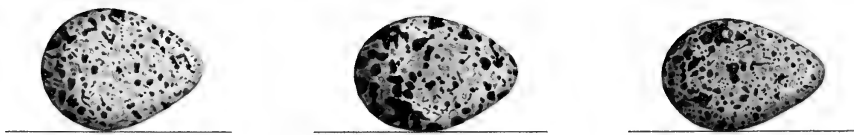


Fig 2.
OXYECHUS VOCIFERUS.
KILLDEER.



Fig 3.
ASIO ACCIPITRINUS.
SHORT-EARED OWL.

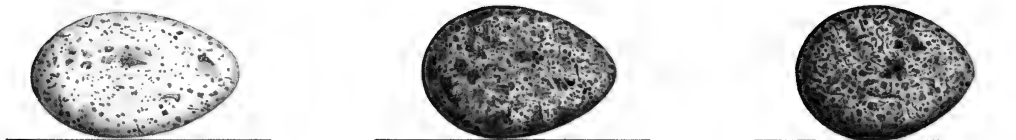


Fig 4.
CORVUS FRUGIVORUS.
COMMON CROW.

PLATE XLV.

Fig. 1. TRINGOIDES MACULARIUS—Spotted Sandpiper.

The Spotted Sandpiper arrives about the 15th of April. Two weeks later many of them have selected sites for their nests, and perhaps with a few exceptions oviposition has commenced. Two broods are frequently, if not usually, reared by each pair during the season. Early in September they depart for their winter home.

LOCALITY:

The locality chosen is always near water; either a lake, river, creek, canal, or pond. Often a pair will build their nest in an upland field beside a small artificial pool made for watering stock. It is immaterial what the character of the surrounding country is. As a rule, the nest is placed in a ploughed field, or upon the sand or gravel along a river or creek, unprotected by any vegetation. Sometimes it is among young willows and weeds, or even occasionally in grass. Once I found a nest in a piece of woods, near a little pond only a few yards square.

POSITION:

The nest is always upon the ground; either in a natural depression or in a slight concavity scratched for the purpose. Sometimes quite a neat little excavation is made.

MATERIALS:

Small sticks, bits of weed-stems, blades of grass, slender strips of corn-husks, and like materials are sometimes used as a lining to the concavity. But frequently no materials are carried by the builders, the eggs being deposited upon the bare ground, or upon whatever natural covering there is to the chosen spot. When the selected site is upon a gravel-covered shore, the eggs often rest upon pebbles, and, being surrounded by stones nearly their size, are very difficult to discern. No measurements can be given because the outlines are uncertain.

EGGS:

Four eggs are nearly always deposited in the first set. They are arranged with their points together, so as to occupy the least possible space. In the second set, sometimes only three are laid. The ground-color is smoky-buff of an indescribable shade. There is but slight variation in color in specimens of different sets. The markings consist of blotches, spots, and speckles of brown, varying in different eggs from a light tint of Vandyke-brown to the darkest of sepia. Some eggs are uniformly and thickly spotted and speckled. Some have several large blotches of color with spots and specks between, while others, and this is the commonest pattern, have bold spots and speckles of various shades, increasing in size and number from the point to the base. The deep shell-marks are bluish, and vary greatly in number

in different eggs. In long-diameter they measure from 1.15 to 1.30, and in short-diameter from .80 to .90. The longest egg in five sets is 1.30 x .93; the smallest, 1.20 x .81. The usual size is about 1.25 x .87.

DIFFERENTIAL POINTS:

The size of the eggs will always enable one to differentiate them with certainty from those of other species which otherwise they resemble.

REMARKS:

The eggs illustrated, PLATE XLV, Fig. 1, represent the extremes and average in size, shape, and markings taken from eighteen eggs. They are colored from blown specimens about a year old. The colors do not fade much, but they lose with time the brilliancy which they possessed when the eggs were fresh.

The Spotted Sandpipers select a locality for their home as soon as mated, and during the Summer they remain near the spot. Wherever a pair is observed in the Spring, it can be predicted with considerable certainty that their nest is or will be close by.

I have found the nest most frequently in newly ploughed fields that reached nearly to the edge of some water-course or pond, and usually by accident; although sometimes I have located it by the actions of the birds. They are very watchful and anxious for its safety, and will often attract the attention of a passer-by by their cries and uneasy flight. When sitting, the female is easily driven from her eggs, but she will soon return, often in the face of the same danger that frightened her away. The eggs seem out of all proportion to the size of the bird. It is really wonderful how such a little body can safely lay them. The young run about as soon as hatched, and follow their parents wherever they lead. They soon learn to glean their living, and in June are the most plentiful and attractive of all our waders. They are neat and dainty, and when walking tilt themselves in a characteristic manner, which has given them the vulgar name of teeter-tails.

PLATE XLV.

FIG. 2. *OXYECHUS VOCIFERUS*—Killdeer.

The Killdeer, or, as it is more commonly called, Killdee, is the first of all our shore-birds to arrive from the South. Often as early as the last of February a few stragglers may be seen or heard flying over head. Like Ducks and Snipe they journey principally at night. They remain in the fall until cold weather comes. Usually they have all left by the last of November. Nesting generally begins in April for the first brood, and in June for the second. May 14th, 1879, I saw young Killdeers nearly grown; and May 8th, 1832, I saw young ones almost as large.

LOCALITY:

The nest is always made in the neighborhood of water, either a lake, river, creek, canal, or pond. Sometimes it is placed in grass or beside an old log in a pasture or sparsely timbered woods. Sometimes it is on the muddy, sandy, or pebbly bank of a stream, unprotected by even the slightest vegetation, but, ordinarily, it is in a newly ploughed field adjoining some small pond or stream.

POSITION:

The nest is always upon the ground, either in a natural depression or in a slight concavity made by the birds. Considerable skill is shown in selecting a low spot, and, at the same time, avoiding places where water from rains would either overflow or collect.

MATERIALS:

Usually the female Killdeer collects a few short weed-stems or bits of slender twigs of uniform size, and lines the bottom of the selected cavity. Sometimes, when the nest is in grass, blades of dead grass are similarly used. Sometimes, when the nest is on a gravelly shore or any other unprotected spot, no materials are carried, the eggs being deposited on the bare ground or upon whatever happens to cover the site.

EGGS:

Four eggs are the usual complement, but in the second set sometimes but three are laid. The ground-color is uniformly a smoky-buff. The marks consist of blotches, spots, and speckles of dark brown, at times almost black. They are distributed over the entire shell, but are larger and more numerous on the basal half. Usually each egg contains several blotches, but occasionally specimens are marked entirely with speckles. In long-diameter they vary from 1.40 to 1.48, and in short-diameter, from .98 to 1.07. A common size is 1.42 x 1.00.

DIFFERENTIAL POINTS:

See Table.

REMARKS:

The eggs illustrated, PLATE XLV, Fig. 2, were selected from seven sets as representatives of the average and extremes in size, shape, color, and markings. The middle one is the commonest pattern.

The Killdeer is a very common summer resident, and familiar to nearly everybody. They are tame and unsuspecting birds except during the breeding season. At this time they are extremely solicitous. The male generally stands guard over his mate, and, on the approach of supposed danger, gives his alarm notes. It is easy to tell when a pair have a nest or young, by their circling flight and pleading cries, but it is very difficult to locate the nest by their actions, as they are purposely misleading.

When driven from her eggs, the female will often feign lameness in hope of persuading the intruder to pursue her, and in the chase lose the location of her home. The same stratagem she will resort to when surprised with her young. I have seen a female save her chicks from a dog by throwing herself in front of him and inviting pursuit. At times it seemed as if the dog would surely catch her, but she safely led him a sufficient distance, when she flew away, and, by a circuitous course, returned to her brood.

PLATE XLV.

Fig. 3. ASIO ACCIPITRINUS—Short-eared Owl.

In the fall, while Quail-shooting, and in the spring, while Snipe-shooting, I have frequently found the Short-eared Owl in low, damp, grassy lands, and sometimes, also, in upland stubble-fields, occasionally flushing several dozens from a few acres. By the middle of April or the first of May they are no longer found in flocks, but only here and there in pairs, the crowd having passed on to the North, leaving but few of their number to breed. The eggs are laid about the first of April. I think but one brood is reared during the season.

LOCALITY:

The nest is generally built in damp prairie-land that grows during the summer rank grass, which, when killed by the winter, becomes matted down, forming a close covering to the soil. In such a spot, and there are many such in every county, occasionally a pair or several pairs of these Owls, at the proper season, may be found nesting.

POSITION:

A natural depression in the ground is chosen in which to place the nest, or it is situated at the root of a bush, beside a log, or in a burrow made by a rabbit or muskrat; usually it is in the first position mentioned, unprotected even by any surrounding weeds.

MATERIALS:

The soft grasses which happen to cover the site selected ordinarily suffice for the nest, but sometimes the bird will scrape together quite a handful of well dried grasses and weed-stems, and perhaps a few of her own feathers, and, upon these, deposit her eggs, or sometimes she will lay upon the bare ground.

EGGS:

The complement of eggs varies from four to seven; four is the most I have ever found in a set. The shell is dull white, unmarked except by grass stains, mud, or the bird's excrement. The shell, never very glossy, is usually quite unpolished. They measure in long-diameter from 1.50 to 1.70, and in short-diameter from 1.15 to 1.25. A common size is 1.22 x 1.58. Sometimes they are elliptical, and sometimes considerably more pointed at one end than at the other.

DIFFERENTIAL POINTS:

See Table.

REMARKS:

The eggs illustrated, PLATE XLV, Fig. 3, were selected from four sets as representatives of the

various sizes and shapes that commonly occur. The center one is perhaps the most frequently observed pattern. One specimen shows several little irregularities in the formation of the shell.

The first nest of the Short-eared Owl that I ever found was on March 23d, 1878. It was in a piece of marshy land two miles from Circleville. I had just killed a Snipe, and was looking for the dead bird, when, right at my feet, a Short-eared Owl flew up and soared in the air high above me. Having recovered from my surprise, I looked down, and there were four eggs lying in a little depression where the grass had been eaten away by some cattle that were grazing in the field. A few feet away the ground was some inches lower and very wet. Having done the eggs up in my handkerchief, I remained some minutes to watch the Owl, which continued circling around the spot, some hundred feet overhead. Finally, she alighted in a distant part of the prairie, and I proceeded on my way. Several more Owls were flushed during the next half-hour, each of which made long-continued circular flights before alighting. The following day I hunted for Owl-nests over the same ground, and found a second one in a burrow, about a foot within the entrance, containing three eggs.

The food of these Owls consists principally of mice, and consequently they frequent the grassy marshlands in which the field-mice delight. Judging from the remains seen, vast numbers of mice must be destroyed by them. Last spring, 1882, I found a few pairs of Owls in a small piece of wet grass-land, and upon nearly every square foot of the ground were balls of indigestible mouse-hair and bones, which had been ejected, after the fashion of the Owl.

The Short-eared Owl, like others of the family, bolt their food. Having captured their prey, it is at once swallowed whole, if not too large. This leaves to the stomach the office of masticating, as well as digesting and appropriating every thing but hairs, feathers, and larger bones. The refuse is rolled together into a ball, by the natural motions of the stomach, and then disgorged. The stomach of a well-fed Short-eared Owl is a curious sight. It is sometimes so filled with indigestible things that it is quite prominent, and, upon dissection, a handful of wads of hair and bones may be taken out.

PLATE XLV.

Fig. 4. CORVUS FRUGIVORUS—Common Crow.

The Crow is found throughout Ohio at all seasons of the year. In the spring and fall very large flocks are sometimes seen on their way to summer or winter homes beyond the limits of the state. Those that spend the winter with us are commonly found in small flocks, roaming about in search of food. The nest for the first brood is generally completed by the second week in April, unless the season is unusually cold, and, in July, a second structure is often built, and a second brood hatched.

LOCALITY:

In the spring, some individuals separate from the flock in which they have passed the winter, and search out a suitable spot for their nest. Others form themselves into a colony, and, taking possession of a piece of woodland, build their houses in neighboring trees. Timberland, bordering upon a lake, or upon the bluff bank of a river, is a favorite place for the summer habitation of a colony. Isolated nests may be placed in almost any large forest tree, in any kind of woods, from an oak forest containing hundreds of acres to the small grove adjoining a barnyard, as the fancy and judgment of the birds may permit.

POSITION:

The nest usually rests in a perpendicular crotch formed by the branching of the main trunk of the tree. Sometimes it is in a perpendicular fork formed by several branches of a large limb; and, occasionally, it is built upon a horizontal limb, where it joins the main trunk, or at the point of bifurcation into smaller limbs. Its distance from the ground varies from thirty to eighty feet.

MATERIALS:

A nest before me, taken from an oak tree, near the Ohio canal, in Pickaway county, is composed as follows: The foundation is loosely but firmly constructed of pieces of dead branches and brush, varying in length from four inches to two feet, and in diameter from one-eighth to three-eighths of an inch. The majority of sticks are about one foot long by one-fourth of an inch in diameter, and quite irregular and crooked. Within this coarse foundation is a very compact superstructure, made of pliable weed-stems, corn-silk, corn-husk, and soft fibres and roots of various kinds of weeds, the whole felted together in a superior manner. The cavity thus formed is nicely rounded and lined with weed-fibres and strips of grape-vine bark. The superstructure and lining together is from one and a half to two inches in thickness. The cavity measures seven inches in diameter by three in depth. The foundation projects beyond the rim of the cavity upon one side about one foot; at other places, but a few inches. This irregularity corresponds to the shape of the crotch in which it is placed, the least material being adjacent to the

limbs. The above represents a typical nest. The materials of construction, of course, vary somewhat in different localities.

EGGS:

The usual complement of eggs is six, but four or five frequently constitute a set. They measure in long-diameter from 1.50 to 1.90, and in short-diameter from 1.10 to 1.25 of an inch. The average size in several sets is 1.18 x 1.70.

The usual ground-color of the shell is a light greenish-blue; exceptionally it inclines to a yellow-brown. The marks consist of small blotches, spots, and speckles of bistre; upon some eggs these are moderately dark, upon others very faint. They may be so numerous as to almost conceal the ground-color, or scattered sparingly. Occasionally, an unmarked egg is found. Marks beneath the surface are somewhat purplish. An egg before me, of the usual pattern, has a ground of light greenish-blue, visible between large, irregular patches of various shades of bistre. The large masses of color are formed by confluent blotches, spots, and speckles. There is great diversity in coloring among the eggs of this species, and it is impossible to give a description that will accurately cover each specimen.

DIFFERENTIAL POINTS:

See table.

REMARKS:

The eggs illustrated on Plate XLV, Fig. 4, represent the variations in size, shape, color, and markings that usually occur. The middle egg is the commonest pattern.

The Common Crow, except in cases of partial or complete albinism, is so intensely and uniformly black that the name has become a synonym for the color. Their coats are glossy and beautiful, and give to their owners an air of gentility of the kind commonly associated with broadcloth. In intelligence, the Crow is surpassed by none of our native birds, and equaled by few. It is possessed of a mind rapid in action, deep in penetration, and logical in method. All of these qualities, together with the fact that the moral code of the Crow does not exist, make it a bird feared by the feathery tribe and despised by man.

In Southern Ohio, the Crow is not as plentiful, either in summer or during migrations, as it was twenty years ago. Formerly, it was not uncommon to see the air blackened with them upon their journey South; but now flocks of more than a hundred are rarely seen. In December, 1882, I saw several hundreds feeding along the Mill Creek bottoms, just out of Cincinnati, and I am informed by my friend, Dr. W. W. Dawson, that there is within the city limits a roost which has been occupied nightly, winter and summer, as far back as the memory of the oldest inhabitant can recall.

The Crow is quiet about home, and takes great precautions not to be seen near the nest. Sometimes they will fight for their young, to which they always show great attachment. If the nest contains only eggs, the owners will often suffer it to be robbed, without making any demonstration. The young are fed upon grubs, eggs, young poultry, mice, and whatever else in the way of meat can be procured. By nature, the Crow is a thief, and hungry young at home increase their prowess and bravery. They will catch young chickens, ducks, or turkeys, like a Hawk, and are more dreaded, because more cunning. They will enter the barnyard and carry off eggs in a manner so sly that it is difficult to catch them. I saw a female Crow take nine Guinea's eggs, in rapid succession, and fly with them to her nest, about a quarter of a mile away, and, if I had not interfered, the remaining twenty would soon have gone the same road.

When taken young, they are easily tamed, and are full of cussedness and tricks of all kinds. Some people like to have them about, and endure their mischievousness for their company.



Pl. XLVI.
TELMATODYTES PALUSTRIS.
LONG-BILLED MARSH WREN.

PLATE XLVI.

TELMATODYTES PALUSTRIS—Long-billed Marsh Wren.

The Long-billed Marsh Wren is common throughout Ohio during its migrations in April and September, but, during the summer months, it is only to be found about large marshes. The nest for the first brood is constructed in May, and in July a second nest is often built, for many pairs rear two broods each during the season.

LOCALITY:

The nest of this species is said to have been found at St. Mary's and also at Licking reservoirs. In the northern marshes, hundreds may be taken in a single day, so numerous are they. In the neighborhood of Circleville, I have never been able to discover the nest, although I have repeatedly searched for it in the little marshes where these Wrens are plentiful during their migrations, and which, in every particular except size, seem suitable for their summer home. As only large marshes are used for breeding grounds, the summer distribution of the species is very uneven. The nest, therefore, is very common in some localities, while in others it is entirely unknown.

POSITION:

The nest is usually between one and three feet above the ground or water, as the case may be. It is firmly attached to a bush, to reeds, to cat-tails, or to a number of blades of tall marsh-grass, by the long grasses of which it is composed. If a cluster of grasses is chosen for the site, it is bound, generally posteriorly, to several perpendicular stalks, and, for additional security perhaps, is fastened rather more loosely to a few stalks or blades outside of the bundle which gives its main support.

MATERIALS:

The nest is a globular structure, about the size and shape of a cocoon. It is composed principally of long blades of dead grass, nicely interwoven. The cavity within is small compared to the exterior, and is usually lined with fine grasses. The entrance is generally in the upper half, and completely concealed by elastic grasses, which the birds force apart going in or coming out. Sometimes weed-fibres, long strips of leaves, and similar vegetable substances, or mud may be mixed with the grasses. The lining is occasionally composed of feathers instead of grass. The diameter of the nest from side to side is about four and one-half inches. The diameter from top to bottom is about five and one-half inches.

EGGS:

The complement of eggs varies from four to six, six being the common number. Nine eggs, it is said, have been taken from one nest. The ground-color of the shell is chocolate, often of a pinkish cast, varying in intensity in different specimens from a slight wash to a shade nearly as dark as a grain of

browned coffee. The ordinary ground-color is about like that of the common clay marble called "commie." The markings consist of spots and speckles, often confluent, of a deeper shade of the ground color.

Some eggs are unmarked. Others are thickly and evenly marked over the entire surface. Some have a well-defined, some a faint wreath of confluent marks about the crown, while others have the wreath about the smaller end. Some have the marks very fine and indistinct, others moderately large and bold. The various shades of ground-color and the different markings combine to make an endless variety of patterns in these eggs. But, notwithstanding this great diversity, there is an indescribable something about them which suggests, upon sight, to the experienced oölogist, their parentage. Eggs from the same set generally show considerable uniformity in coloring and also in size. The shell is sometimes highly polished, sometimes dull.

Ten sets of eggs, collected by Mr. J. B. Porter, of Glendale, Ohio, near Port Clinton, Ottawa county, give an average size of .50 x .65. The largest measures .50 x .70; the smallest, .49 x .60 of an inch. The greatest long-diameter is .79; the least long-diameter is .60. The greatest short-diameter is .51; the least short-diameter is .48.

DIFFERENTIAL POINTS:

See differential points under "House Wren."

REMARKS:

Plate XLVI represents a nest and three eggs of the Long-billed Marsh Wren, taken in Ottawa county, by Mr. J. B. Porter, in 1880. The specimen had been in his cabinet about two years before it was drawn. The entrance is figured opened, as it can thus more readily be seen. The eggs show the usual sizes, shapes, and markings, the center one being the commonest pattern.

Mr. Porter, to whom I am much indebted for information regarding the breeding habits of the species, found these birds plenty in the marshes about Sandusky Bay, in 1880, and, in company with Dr. Langdon, examined a good many nests. Every ornithologist has noted the fact that but few nests of the whole number found contain eggs, and many guesses have been made to account for the construction of so many useless houses. Mr. Porter found eggs in about every third nest, and noted that those which contained eggs were somewhat more compactly built than the others.

The Wrens seem to have sentinels all about their breeding grounds, whose duty it is to give the alarm (a squeaky little note), on the approach of danger. When once the alarm is sounded, it is carried from one to another, until every bird is aroused. This habit makes it very difficult to catch the birds in or even near their nests. Dr. Coues, in "Northwestern Ornithology," says: "On entering a patch of rushes where the Wrens are breeding, we almost instantly hear the harsh, scraping notes with which those nearest scold us, in vehement and angry resentment against the intrusion. From further away in the maze of reeds we hear a merry little song from those still undisturbed, and presently we see numbers flitting on feeble wing from one clump of sedge to another, or poised in any imaginable attitude on the swaying stems. . . . Others may be seen scrambling like little mice up and down the reed-stems or all over their globular nests. They appear among themselves to be excitable to the verge of irascibility, and not seldom quite beyond such moderate limit; but on the whole they form a harmonious little colony which minds its own business, and doubtless makes pleasant company for the Black-birds and other larger species which build among them."



Pl XLVII. Fig. 1
HYDROCHELIDON LARIFORMIS SURINAMENSIS
BLACK TERN.

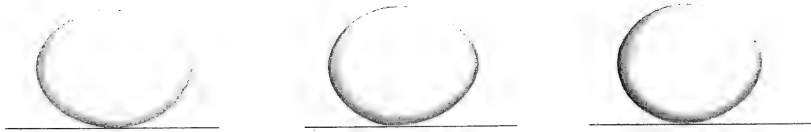


FIG. 2.
CERYLE ALCYON.
BELTED KINGFISHER.

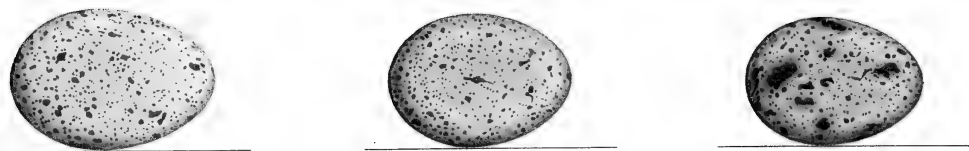


FIG. 3.
GALLINULA GALEATA.
FLORIDA GALLINULE.

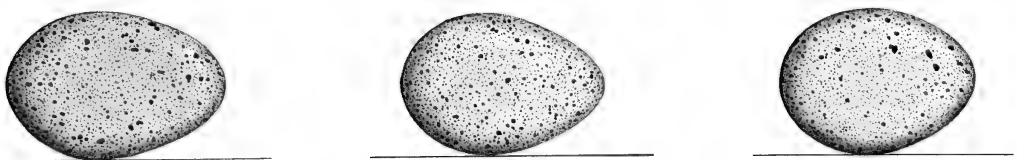


FIG. 4
FULICA AMERICANA.
AMERICAN COOT.

PLATE XLVII.

Fig. 1. HYDROCHELIDON LARIFORMIS SURINAMENSIS—Black Tern.

In Northern Ohio the Black Tern is a common summer resident. In other parts of the State it is an irregular spring and fall migrant, and possibly rare summer resident, frequenting the rivers, creeks, canals, and ponds. It may possibly breed about the large reservoirs and rivers in the central and southern portions of the State, but I know of no instance where its nest has been taken south of the Lake Erie marshes. Two broods are commonly hatched by each pair during the season. The first set of eggs is laid in May, the second in July.

LOCALITY:

Like the Long-billed Marsh Wren, the Black Tern resorts to large marshes for the purpose of nesting. The site chosen for the home is often a long distance from shore, upon a muskrat house, a little island of matted reeds and grass, or any floating vegetable debris of the marsh. At other times it is upon the ground along shore, or even, perhaps, some distance from the marsh, on the bank of a stream. Usually the site is surrounded by water several feet deep.

POSITION:

The only point about which this bird seems particular in selecting a position for the nest is that the little patch of muddy ground or decaying vegetable debris chosen for the eggs to rest upon shall be well exposed to the sun's rays, the heat of which probably plays an important part in incubation.

MATERIALS:

No materials are carried by the Black Tern for its nest, nor does it very often make an effort to arrange the materials about the chosen location. Sometimes it will elevate a little mud or decayed bits of reeds slightly above the surrounding surface, and, upon this elevation, which is a little concave on top, deposit its eggs. The numerous suitable positions for the eggs to rest upon in the localities selected for breeding-grounds, make unnecessary any effort upon the part of the bird to construct a nest.

EGGS:

The complement of eggs in the first set is three, in the second set it is often one less. The ground-color varies in different specimens from a light wash of a yellow-brown to a rich olive-green, less frequently it is coffee-brown of various shades. The most frequent color is perhaps an olive-tinted yellow-brown. The markings consist of bold blotches, spots, and speckles of sepia so heavy as to appear black. Some eggs are marked principally with large distinct blotches and spots, some have only small spots and speckles confluent about the base; others present various combinations of these extremes. The deep shell-marks show a bluish tint upon light ground-colors. When the eggs are taken from the nest all markings

are frequently entirely obscured by a coating of mud. The eggs look as if they had been purposely rolled about on the muddy ground so as to cover up their light colors and make them appear like chunks of earth or stones, a procedure which must be very effectually protective.

In long-diameter the eggs measure from 1.25 to 1.35, and in short-diameter from .85 to .98; a common size is about .92 x 1.30 inches.

DIFFERENTIAL POINTS:

The size, shape, and colors of the eggs will easily distinguish them, excepting in extreme cases, from any other species. See "Upland Plover."

REMARKS:

The three eggs illustrated, PLATE XLVII, Fig. 1, were selected from a number of sets in the possession of Mr. J. B. Porter, of Glendale, O. They represent the different sizes, shapes, ground-colors, and markings commonly observed. Mr. Porter, to whom I am under obligations for the examination and use of his specimens, has several years found the Black Tern building in large numbers in the marshes in Ottawa county, and has collected a good many eggs and noted their breeding habits. Dr. F. W. Langdon, who has also observed the Black Tern in its summer home, wrote of it, in Volume III, No. 3, of "The Journal of the Cincinnati Society of Natural History," as follows: "A very common summer resident in the marsh; nesting, or rather laying its eggs on the little islands of decaying vegetation and mud formed by sunken muskrat houses. . . . The sun appears to be their chief incubator, although the decaying vegetation of which the abandoned muskrat houses consist, doubtless plays some part in the process. In no instance did we succeed in flushing a bird from the eggs, although they would appear in pairs to the number of twenty or thirty and hover about within a few feet of our heads making a great outcry when we approached their property, which was soon to be ours by right of discovery. At other times the birds were not at all gregarious, being usually observed foraging singly or in pairs. Several young of the year were taken, thus confirming the statement of the resident who informed us that he had taken numbers of the eggs of the first brood in May. Of the dozen or more sets of eggs taken by us early in July, more than half were fresh or nearly so."

In the spring and fall I have frequently seen Black Tern singly or in small flocks fishing along the Scioto river. It seemed at these times to be fearless, often coming within a few feet of me, and then gracefully sailing off as if its curiosity had been satisfied. It often remains several days or even weeks in the same locality. Having selected a stretch of river, it flies up and down, back and forth, constantly watching for some small fry in the water beneath or catching small insects in the air. When a minnow is espied a rapid dive is made for it, the bird often going entirely below the surface and out of sight. Suddenly it reappears and, stretching its long wings with a laborious and uncertain movement, rises in the air again, to repeat, at the first opportunity, its difficult work for food. Its flight is graceful and even careless. It sails through the air with the ease consequent upon a large expanse of wing and a small light body. Now circling up, now dropping like a feather upon some log lodged in the current. Here it sits for a few moments, apparently contemplating suicide, then suddenly, as though some circumstance over which it has no control had decided the matter, it starts off to repeat its search for food.

PLATE XLVII.

Fig. 2. *CERYLE ALCYON*—Belted Kingfisher.

The Kingfisher is a bird of striking outline, of beautiful plumage, and of very interesting habits. It is a summer resident throughout the State, quite uniformly distributed, but nowhere very numerous. In the neighborhood of Circleville a few may be seen during even the severest winters, and I believe these to be the same birds that breed here in the summer, from the fact that I have observed them in the same localities throughout the entire year. But one brood is usually reared by a single pair during a season. This is hatched about the second week in June.

LOCALITY:

The site usually chosen for the home is a perpendicular sandy or clayey bank along a creek, canal, river, pond, or lake where shallow water and small fish abound. Sometimes the site is half a mile or more from water in the bank of a gravel-pit or some similar place, but such a situation is exceptional. A bluff sandy bank on the convex side of a rapid but shallow stream is of all others the favorite locality.

POSITION:

The excavation of the hole, which is preliminary to the nest proper, is generally begun several feet below the top of the bank, but high enough above the surface of the water to escape being flooded during freshets. If a low bank is selected, this, however, may not be possible. Often the hole is in a bank fifty or a hundred feet high; in this case it is usually much nearer the top than the water. As a rule, the nest is situated above the high-water mark of the stream along which it is built. I have several times seen nests overflowed which contained either eggs or young.

The excavation is projected horizontally into the bank from three to six feet; exceptionally even to the distance of eight or nine feet, usually in a tolerably straight line, but sometimes it makes quite an angular course or even an abrupt angle, either to avoid a stone or root or perhaps simply to please the builder's fancy. The diameter of the hole is often large enough for a man's fist to enter, and at the opening the bird's feet and feathers round the edges, especially the lower part, which frequently shows the marks of the bird's toe-nails. I took a set of eggs from a nest a few years since about twenty-five feet above the water, and as many feet below the top of the bank. It was situated in a vein of fine yellow sand. The hole, after entering the sand about three feet, turned to the right at nearly right angles, and at the end of about three feet more enlarged into a cavity a foot in diameter. The hole is usually enlarged somewhat at its extremity where the eggs are placed, but this one exceeded in this respect any before seen.

MATERIALS:

A few blades of grass, straws, or like materials usually cover the floor of the enlarged cavity at the end of the excavation, and upon these the eggs are laid. Fish-bones and scales and craw-fish remains

left from meals are added to these materials as oviposition and incubation progress, and by the time the little ones are out a handful of bones and scales has often accumulated. Sometimes large quantities of rubbish, such as sticks, straws, leaves, bark, and moss arranged promiscuously, constitute the nest proper. I have taken a large hatful of materials from a single nest, and, again, I have found the eggs resting upon the bare ground, no materials at all having been carried into the cavity by the birds.

EGGS:

Six or seven eggs generally constitute a set. They are beautiful clear white, with moderately thick hard shells, highly polished. They measure in long-diameter from 1.26 to 1.37, and in short-diameter from 1.00 to 1.06: a common size is about 1.32 x 1.04 inches.

DIFFERENTIAL POINTS:

See "Wild Pigeon."

REMARKS:

The eggs figured represent the extremes and average in size and shape occurring in six sets.

The Kingfisher is a hardy, bold bird and an ornament to our fauna. It frequents retired places, and except during the nesting season is quiet and unobtrusive. During the last of April and the first of May, its rattling notes are frequently to be heard. In the vicinity of its nest it is quiet and rarely seen. So far as I have observed, it excavates its nest and feeds its young at night. In 1880 a pair selected for their home a bank along a much frequented road, about two hundred yards from the Scioto river. There was rarely half an hour during the day from sunrise till dusk that teams did not pass the spot. I drove by it dozens of times after first noticing the hole, but never saw the birds. One day I concluded to stop and see if the cavity was inhabited. A long buggy-whip was pushed into the nest. The old bird was there, but I could not drive her out. Procuring a spade, I dug down and easily caught her with my hand. She was sitting upon six eggs, and within ten feet of a public road.

The female sits closely, and will savagely strike at sticks or any object poked at her. She becomes greatly attached to the locality of her first nest, and will build year after year in the same bank, either deepening and cleaning out the old excavation or making a new one near by. The nest is usually completed by the first week in May. The young are helpless things, and require a deal of patient care and hard work to rear and teach the skill of proficient fishermen. To dive into the water and catch a minnow is no easy task, and much practice is necessary before they are able to support themselves. The Kingfisher catches its prey in its bill, and hastening from the water, it alights upon a limb, either the one from which it made the dive or a neighboring one, and holding the fish about midway between its head and tail, repeatedly and quickly raps it against the limb until dead; it is then swallowed head foremost.

PLATE XLVII.

Fig. 3. GALLINULA GALEATA—Florida Gallinule.

The Florida Gallinule arrives in Southern Ohio on its northward migrations during the last week in April, frequenting reedy ponds and sloughs along our rivers and canals. It is not a very common bird in this section of the State, where it usually tarries but a few days before resuming its journey to its more northern breeding grounds. Along the southern shore of Lake Erie, in suitable localities, it is a common summer resident. In other parts of the State, excepting the large reservoirs, it breeds only occasionally. Dr. F. W. Langdon has kindly written for me the results of his observations concerning the breeding habits of this species in the lake marshes, and I append his text almost entire. He says: "Nest-building is completed early in June, and by the first week in July the sooty-black, down-covered young, with their coral-red bills tipped with orange, may be seen following the parent bird about the marsh. Having reared their progeny they remain until the October frosts chill these northern waters and warn them to take their departure for their winter home in the everglades of Florida. They leave about the middle of October.

LOCALITY:

"The more open portions of the marsh are usually preferred for nesting places by this species. The site chosen for the nest may be on the low grassy border of the marsh, but is usually on some of the numerous submerged islets, overgrown with flags and saw-grass, which abound in such localities. An isolated clump of bulrushes and saw-grass standing in the water is also a favorite nesting place.

POSITION:

"The nest is usually supported by the foot-stalks of the clump of flags or saw-grass in which it is placed, its height varying from a few inches to a foot or more from the water. Floating nests are also of occasional occurrence, always being anchored, however, by a few blades of saw-grass.

MATERIALS:

"The foundation of the nest is begun by bending the surrounding blades of saw-grass toward a common center, and upon the support so formed is placed a mass of crossed and interlaced fragments of dried saw-grass and other vegetable debris. The nest proper is a shallow affair, composed of smaller and finer fragments of the same materials. In size and shape its cavity might be likened to that of an ordinary soup-plate. There is frequently on one side of the nest, and leading from its rim to the water's edge, an inclined plane or causeway, about eight inches in width, composed of the same materials as the remainder of the nest. This seems to be built with an especial reference to the access and departure of the birds, but may of course be merely the result of the trampling incidental to these occurrences.

"An average nest, foundation included, measures about twelve inches in diameter at base, tapering to six or seven inches at the rim; height from foundation to rim, five or six inches; depth of cavity, one and one-half inches.

EGGS:

"The complement of eggs varies from six to ten. In shape they are an elongated oval. They measure from 1.55 to 1.84 in long-diameter by 1.12 to 1.26 in short-diameter. The average of a set of ten is 1.77 x 1.24. The ground-color of the shell is pale brownish-buff. They are studded every-where with small blotches, specks, and dashes of rich chocolate-brown; the markings being larger and more numerous toward the greater end.

DIFFERENTIAL POINTS:

"The nest and eggs can only be compared, as regards Ohio, with those of the Coot; the differences being as follows: The nest of the Gallinule is, on the average, considerably smaller than that of the Coot, measuring two or three inches less in diameter, and other dimensions less in proportion. The eggs also are smaller and less pointed than those of the Coot, and their ground-color inclines to brown, which is not the case with the Coot's eggs. The markings of the Gallinule's eggs are larger and less numerous, and are red-brown, while those upon the eggs of the Coot are sepia, so dark as to appear in some specimens almost black."

REMARKS:

The eggs figured, PLATE XLVII, Fig. 3, were selected from several sets in the possession of Mr. J. B. Porter. They represent the patterns and variations in size commonly observed, the middle egg being perhaps the commonest form.

The Florida Gallinule is in many respects a curious bird. It occasionally is found during its periods of migration in open fields away from water, or even in the barn-yard. Some years ago a gentleman in Circleville found one walking about among his chickens. To him it was a new and strange bird, and he concluded to capture it and see where it was hurt. He at once gave chase and soon caught it, but a careful examination failed to reveal a wound. I saw the bird later in the day walking about his yard. It seemed as tame as the chickens and perfectly contented. On the flat, hard ground it moved about awkwardly, often stepping with one foot upon the toes of the other, an accident which seriously affected the grace of its movements. The gentleman could not be persuaded that the bird was not hurt, and having no idea it could fly, it was left in the yard with the poultry. The following morning it was gone, having disappeared as mysteriously as it came.

The Florida Gallinule is often mistaken for the rarer and handsomer Purple Gallinule. The Purple Gallinule has only within the last few years been taken this far North, being emphatically a Southern bird. In 1877, May 10th, I killed a beautiful specimen, and have since seen one bird. It is probable that it breeds in the State when it happens to visit us and is unmolested, and in time it may become a common summer resident.

PLATE XLVII.

Fig. 4. *FULICA AMERICANA*—American Coot.

The American Coot, Mud Hen, or Water Hen, as this species is variously called, is a summer resident in suitable localities throughout the State. In the northern marshes it is plentiful; in the large reservoirs it is not uncommon; other places it is scarcer and irregular. It arrives from the South about the last week in March; stragglers are often seen much earlier. On the 22nd of February, 1883, I saw a single specimen, and during the past week, March 18th to 24th, the ponds in the neighborhood of Circleville have contained hundreds. In November it traces its course to the South. The nest is completed the last of May or first of June. Nests containing fresh eggs have been found by Mr. J. B. Porter the second week in July. In these cases the first sets had probably been destroyed.

The following, upon the breeding habits of this species, as observed in the Lake Erie marshes, is from the pen of Dr. F. W. Langdon:

LOCALITY:

"The nest is usually situated amongst the tall reeds standing in the water; occasionally, however, the more open patches of saw-grass and wild-rice are selected for nesting.

POSITION:

"The height of the nest from the water varies. Amongst the tall reeds it is supported by their stems, often a foot or more above the water, whilst, in other cases, the base rests directly upon the mud or the surface of the water.

MATERIALS:

"The following description of a Dakota nest of this species, by Dr. Coues, answers equally well for Ohio specimens: 'Among many Coots' nests I have found, one was built in a clump of reeds where the water was about knee-deep; it was a bulky affair, resting securely on a mass of reedy debris. The nest itself was built of the same materials, heaped up and a little hollowed; it was about fifteen inches in diameter, and half as high. The reed-stems appeared to have been bitten by the bird into short pieces; there was no special lining. This nest was a floating one, in the sense that the platform of broken-down reeds upon which it was built rested on the water; but it was perfectly secure, raised out of the wet, and though loosely constructed, could be lifted up intact.' Birds of the Northwest, page 542.

EGGS:

"The complement of eggs varies from eight to ten in number. They are rather sharply pointed. The ground-color is clear grayish-white. The markings consist of dots and speckles of sepia distributed uniformly and thickly over the entire shell, but rarely ever confluent. Few of the marks are larger than

a pin head, and most of them mere specks. The eggs measure from 1.70 to 1.95 inches in length, by 1.22 to 1.32 in breadth; average of nine specimens, 1.83 x 1.28.

DIFFERENTIAL POINTS:

"These have been already noted in the account of the nesting habits of the Florida Gallinule." See page 164.

REMARKS:

To the above account of the nesting of the American Coot, kindly furnished me by Dr. Langdon, I have no original observations to add, having never found a nest of this species. The Coot is a familiar bird in the spring and fall throughout the entire State, being met with along all water courses as well as in the lakes and ponds. In March and April, and also in the fall, large flocks are often seen swimming about with wild ducks or feeding restlessly among reeds and grass. They are shy, but rarely take wing, preferring to swim than to fly to a safe retreat. Sometimes they may be forced to fly; in this event, they rise awkwardly from the water, skim over its surface, and alight a few hundred yards away.

In the small ponds about Circleville several pairs of Coots breed every year. I have repeatedly seen the old birds during the summer months, and once a brood of young but a few days old.

The Coot is not often killed for the table, although, as I am informed, its flesh is not much inferior to the Scaup or Ring-necked Ducks.

The three eggs illustrated on PLATE XLVII, Fig. 4, represent the common sizes, shapes, and markings. The specimens from which the drawings were made were collected by Mr. J. B. Porter, in Ottawa county, in 1880.



PL XLVIII. FIG. 1.
VIREO NOVEBORACENSIS.
WHITE-EYED VIREO.

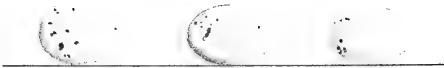


FIG. 2.
POECETES GRAMINEUS
GRASS FINCH.

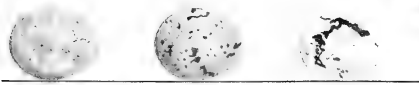


PLATE XLVIII.

Fig. 1. VIREO NOVEBORACENSIS—White-eyed Vireo.

The White-eyed Vireo arrives in the spring and departs in the fall about the same time as the other species of the family. During the nesting season it is very unequally distributed throughout the State. In some localities it is not found; in some it is an occasional resident only; in others it is common. Dr. J. M. Wheaton has not been able to find it breeding in the neighborhood of Columbus, nor have I been able to discover it about Circleville. Dr. F. W. Langdon refers to it in his catalogue of 1879 as "a common summer resident" near Madisonville.

Nest-building begins the last of May or the first of June. Two broods are probably reared by each pair during the season.

LOCALITY:

The nest is uniformly placed on a low limb of a tree or in a bush situated in shrubbery. A low, moist thicket of bushes and small trees is a favorite locality. Occasionally, the nest is built in an ornamental bush or tree in a town or country lawn.

POSITION:

The nest is pensile, and is situated in a horizontal fork in a similar manner to the nest of the Red-eyed Vireo. Its distance from the ground is usually between three and six feet.

MATERIALS:

The material of construction is very similar to that of the nest of the Red-eyed Vireo, but it is arranged exteriorly in a much looser manner. A specimen before me, which may be considered an average nest in size and material, is constructed and measures as follows: Externally are visible pieces of corn-husk, bits of leaves, bark, fibres, grasses, wool, and a few lichens. The whole is rather roughly arranged, and is held together by fine vegetable fibres, spider's web, and other silky threads. Within this somewhat flimsy exterior, or foundation, is a thin layer of grasses and fibres which corresponds to the superstructure in a nest supported from below. The lining comes next, and is also very thin, being composed of roller-grass and split grasses. About the rim the grasses of the lining are arranged circularly, and are bound to the exterior and to the branches of support by thread-like vegetable fibres and web. The whole is quite strong and durable, notwithstanding its thin walls and frail appearance. The external diameter of this nest is two and three-fourths, and its external depth nearly three inches. The diameter of its cavity is two and one-eighth inches in its widest part. At the rim it is but one and seven-eighths inches. The depth of its cavity is two and three-eighths inches.

In place of the corn-husk in the nest just described, newspaper, paper from the nest of the wasp or hornet, and similar material, is frequently substituted; and mosses, insects, catkins, pine-needles, and

other substances, which seem to the builder to be useful or ornamental, are added to or take the place of materials mentioned above. There is not much variation in the dimensions of different nests of the species under consideration from the measurements given. The external dimensions are of course subject to the usual variations for nests of this size. Of the internal measurements, the diameter of the cavity is the more constant.

EGGS:

The complement of eggs is usually five. They are pure white, marked, about the base especially, with a few spots and minute specks of dark chocolate-brown or sepia laid on so thickly as to appear black. The deep shell-marks are neutral tint. A set of eggs before me measures, respectively, .75 x .52, .76 x .53, .78 x .52, and .80 x .53. One of these contains nine marks, another eleven, another twelve, and the fourth thirteen, varying in size from a faint speck to a bold dot as large as a pin's head. Eggs of this species vary in size from .50 to .60 in short-diameter, and from .73 to .83 in long-diameter. A frequent size is about .53 x .76.

DIFFERENTIAL POINTS:

See *Laniivireo flavifrons*, Yellow-throated Vireo.

REMARKS:

PLATE XLVIII, Fig. 1, illustrates a nest and three eggs of the White-eyed Vireo. The nest was collected August 2nd, 1879, near Locust Corner, Clermont county, by Mr. Leonard Freeman, of Cincinnati. The nest was discovered on July 21st, in a thicket of small trees. It was situated about three feet from the ground, in a fork, at the extremity of a long slender branch of a plum tree, and contained one egg. On the 25th it contained three eggs. The bird was observed upon the nest, and was finally shot when the nest was taken. The season at which the nest was built, and the small complement of eggs, suggest that this was probably her second-nest for the year.

The eggs figured were selected from three sets. They represent the ordinary variations in size, shape, and markings.

The White-eyed Vireo differs from others of the family breeding in the State, in the fact that it frequents shrubbery instead of timberland or open fields with here and there a solitary tree. Its character is very similar to that of the Warbling Vireo. Dr. Coues has so well described this species during the nesting season, that I can not do better than to copy his words. Page 524 of "Birds of the Colorado Valley." He says: "The White-eyed Vireo has always been notable, even in groups of birds whose spirit is high, for its irritable temperament; and, during the breeding season, nothing can surpass the petulance and irascibility which it displays when its home is too nearly approached, and the fuss it makes when its temper is ruffled in this way. It skips about in a panicky state, as regardless of exposure as a virago haranguing the crowd on a street corner, seemingly at such loss for adequate expletives that we may fancy it quite ready to say 'Thank you,' if somebody would only swear a little. . . . Their uneasiness is chiefly exhibited during the breeding season, and all their vehemence is but the excess of their concern for their little families, which, as they seem to be aware, are peculiarly exposed to danger in their lowly homes; their ardor exhausts itself when the occasion is past, and, what had been excessive solicitude gives way to simple sprightliness and vivacity, which then appears as an agreeable trait."

PLATE XLVIII.

Fig 2. *POŒCETES GRAMINEUS*—Grass Finch.

The Bay-winged Bunting, or Grass-finch, is one of the commonest birds of the State. It arrives about the 1st of April, and remains until November, or later. During the summer it frequents pastures and poorly cultivated fields, especially fields of grass and clover. It is often seen feeding along the public road or wallowing in the dust. It may always be easily recognized by the one or more wholly or partly white feathers upon either side of its tail. These feathers are very conspicuous when the bird flies, and afford a ready means of distinguishing it at a distance from other species which it closely resembles in size and general color. The nest is built in May for the first brood and in July for the second.

LOCALITY:

The locality chosen for the nest is generally a barren field, with here and there little clumps of grass or weeds. Both high lands and low lands are frequented. Occasionally, the nest is placed in the border of a wood or even along a road side.

POSITION:

The nest is always situated upon the ground in a slight concavity, usually unprotected by any vegetation; but sometimes it is built at the root of a thistle or other weed, and, rarely, is in a little bunch of grass or among straggling stems of clover. The concavity is generally a natural one. The bird may scratch it out some and smooth it, but she rarely if ever makes the entire excavation. The rim of the nest is usually but little above the surrounding ground.

MATERIALS:

The nest is a very simple affair. The foundation and superstructure consist chiefly of a few weed-stems, grasses, straws, and rootlets, entwined and matted together, and the lining is made of a few grasses, rootlets, and horse-hairs. The average diameter of the cavity is about two and seven-eighths inches, its depth about three quarters of an inch: the external diameter is generally about four and one-half or five inches.

A nest before me is composed as follows: The foundation consists of rather coarse weed-stems and weed-rootlets, loosely arranged in the concavity and most abundant about the periphery. Next is a compact layer about three-eighths of an inch thick of dead and blackened blades of blue-grass mixed with a few weed-stems. This makes up the bulk of the nest. The lining is composed of a few white horse-hairs and a few very fine whitish rootlets, arranged circularly. The entire nest just as lifted from its position weighs only one half an ounce. The nests which I have observed have not varied much from the one described. The materials of course vary somewhat with locality and individual fancy, but there is much uniformity in structure as a whole.

EGGS:

The complement of eggs is usually four, sometimes five, rarely six. The ground-color of a number of blown eggs before me varies from a grayish-white to a pinkish-white. The majority have a faint blue-gray tinge. The markings are very variable. One egg before me has but one decided mark upon it, this is at the base, and is an irregular blotch of sepia about one-fourth of an inch long by one-sixteenth wide. The entire shell is pretty thickly marked with faint pinkish blotches, spots, and speckles. One is thickly and evenly blotched, spotted, and speckled with similar faded pinkish-brown marks, but contains no well-defined spots. One has numerous faint lavender spots and speckles and four or five irregular blotches of sepia very similar to the marks on the Orchard Oriole's egg. One is thickly blotched with reddish-brown, the blotches being fainter at the edges than in the center, and the marks are crowded at the base so that they form a confluent wreath. One has spots of faint lavender, and small blotches and speckles of reddish-brown, and, besides, numerous dots, lines, and scrawls of intense sepia. Others present various combinations of the markings described. Of twenty specimens, the average long-diameter is .78, the average short-diameter is .60. The greatest long-diameter is .84, the greatest short-diameter is .68. The least long-diameter is .76, the least short-diameter is .57. A common size is about .79 x .60.

DIFFERENTIAL POINTS:

See Table.

REMARKS:

The nest and eggs illustrated, PLATE XLVIII, Fig. 2, was found May 12th, 1880. The nest was carefully lifted from its position and placed upon level ground, so that the drawing would show to better advantage the depth of the structure and the material of which it is composed. The eggs figured illustrate the sizes, shapes, and patterns commonly met with. The middle egg of the three lower ones is perhaps nearest the average in all respects.

The Bay-winged Bunting is in the neighborhood of Circleville and Chillicothe nearly as plentiful as the Song-Sparrow, but it is not as well known to the people, from the fact that it avoids towns and residences. The song of this species is pleasing and is most frequently heard in the evening, often after other birds are silent; accordingly, it has been named the Vesper Sparrow.

Mr. Audubon did not meet with the Bay-winged Bunting in Ohio, when he journeyed through the State. It is probable that at that time it was not a resident. Like the Black-throated Bunting and some other birds, it has but recently become common. Like many other birds that build on the ground, the Bay-winged Bunting feigns lameness when she believes her nest or young are in danger. I have upon several occasions witnessed this ruse and once was fooled by it, so perfectly did the mother play the role of cripple. The female sits closely upon her nest, and will permit one to approach within a foot or two before she will leave it. Generally, she runs a short distance before taking wing.

PL. XLIX. FIG. 1.
TINNUNCULUS SPARVERIUS
SPARROW HAWK.

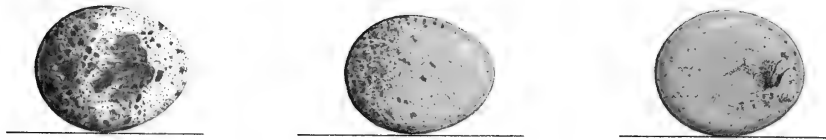


FIG. 2.
ACCIPITER COOPERI
COOPER'S HAWK.

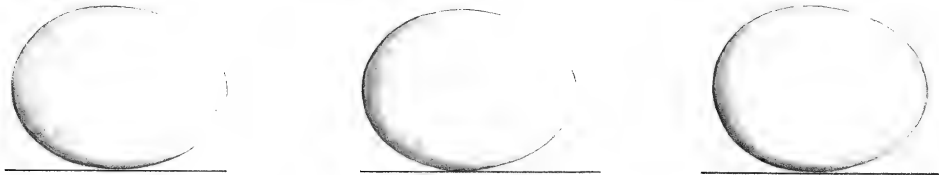


FIG. 3.
BUTEO LINEATUS.
RED-SHOULDERED HAWK.

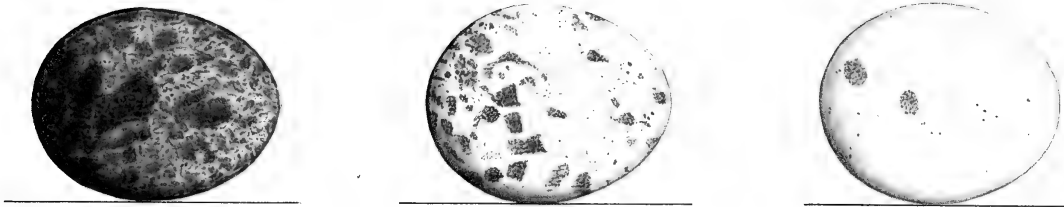


FIG. 4.
BUTEO BOREALIS.
RED-TAILED HAWK.

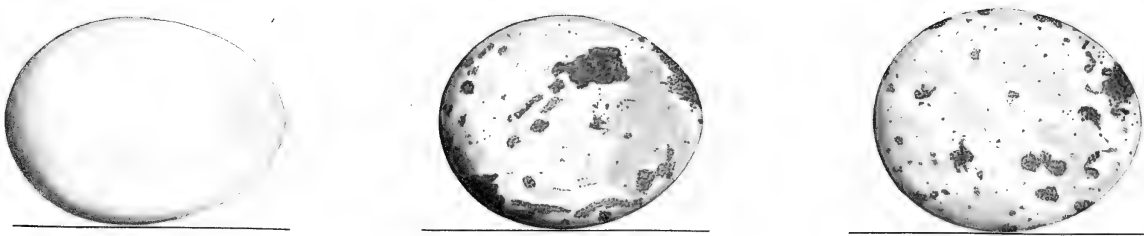


PLATE XLIX.

Fig. 1. TINNUNCULUS SPARVERIUS—Sparrow Hawk.

The Sparrow Hawk is to a certain extent a permanent resident of the State, especially in the southern section; many of them, however, are only summer residents, going south as winter comes on, and returning again at the first approach of spring. The site for the nest is usually chosen in April, and sometimes even in March, but cold weather may delay oviposition until several weeks later. Ordinarily, only one brood is reared by a single pair during the season.

LOCALITY:

The eggs are placed in a hollow in a dead stump, limb, or trunk of a tree; usually along the border of a stream or pond, or in a low field. The large sycamores in river bottoms are much frequented nesting places. In upland districts, a tree along a ditch or pond is generally selected in preference to others. Occasionally, the nest is in a tree at the edge of a woods; but rarely, if ever, is it any considerable distance within woods. A natural cavity, such as is frequently seen at the extremity of a broken limb, or the deserted home of any of the large Woodpeckers, answers equally well for the location. The majority of nests are undoubtedly in abandoned Woodpecker-holes, as these are much more numerous than artificial cavities of suitable size.

POSITION:

The nest is usually between twenty and fifty feet from the ground; but, sometimes, it is near the top of a giant sycamore, and at others in a low stump.

MATERIALS:

The Sparrow Hawk rarely, if ever, carries material for its nest—being satisfied to place its eggs upon the decayed wood which usually covers the bottom of the chosen site. Several years ago I found a nest containing five eggs, which had considerable material, mostly grasses, arranged in an irregular mat upon the floor of the cavity. This material may have been carried by a Bronzed Grackle or a Bluebird, and the site afterward abandoned, or the birds may have been driven off by the Hawks before their nest was completed.

EGGS:

The complement of eggs varies from four to seven, four or five is the number usually deposited. Mr. Audubon found a set containing seven. They vary in long-diameter from 1.30 to 1.45, and in short-diameter from 1.05 to 1.23. A common size is about 1.10 x 1.37. The ground-color of the shell varies, in different specimens, from chalky white to burnt sienna of various shades of intensity; and the markings vary in color from a yellowish-brown to a reddish-brown, and in size, from a minute speck to a

blotch covering a quarter of the egg. Some eggs are almost unmarked, others have blotches, spots, and speckles confluent, and placed, one upon the other, about the base so thickly as to form a solid mass of color—the rest of the shell being but sparingly marked: and others are streaked with thin washes of color from point to base. As a rule, the ground-color is burnt sienna; and the markings reddish-brown, and but few in number.

DIFFERENTIAL POINTS:

See *Circus hudsonius*, Marsh Hawk.

REMARKS:

The eggs illustrated, Fig. 1, PLATE XLIX, were selected from four sets, and represent the sizes, shapes, colors, and markings commonly met with. The middle egg is the usual pattern.

The Sparrow Hawk is one of our commonest species, and is looked upon with more favor than other Hawks. It subsists principally upon mice; and, consequently, is frequently seen about corn-fields, corn-cribs, and hay-stacks. Its food is, however, by no means limited to mice, as it will catch small birds and insects at every opportunity. It often follows the farmer to the field in the winter, and pounces down upon the mice which he disturbs. It is not uncommon for a pair of these birds to follow the fodder sled, every day throughout the winter, in its trips to the corn-field. During the first bright days of spring the Sparrow Hawks choose their nesting-place; and, although cold may delay egg-laying some weeks, the pair remain in the neighborhood of their home, going in and out at frequent intervals, as if the contemplation of the future responsibilities was a source of the greatest pleasure. When the nest is approached by man the birds leave with an air of indifference, and will not return so long as they believe they are watched. Their young are helpless in the extreme; even after they are large enough to fly, and have left the nest, they require a good deal of care for some weeks. Like the young of all birds of prey, they learn to provide for themselves slowly, and require much instruction and experience before they become expert enough to procure their daily food.

When taken young the Sparrow Hawk makes an intelligent and companionable pet, and might, if properly trained, be of much use about the barn as a mouser.

PLATE XLIX.

Fig 2. ACCIPITER COOPERI—Cooper's Hawk.

The Cooper's Hawk is a common resident of the State. According to Dr. J. M. Wheaton, it is less numerous in the Northern than in the Southern Counties. About Circleville it is plentiful in winter and summer. The nest is constructed the latter part of April. But one brood is reared by each pair during the season.

LOCALITY:

The nest is placed in a tree in a small grove, or in a woods, frequently, near a pond or stream.

POSITION:

It is built either in a perpendicular or horizontal fork, generally in the latter position near the extremity of a limb fifty feet or more from the ground. Nests are sometimes found much lower, but as a rule they are high up in the trees.

MATERIALS:

The materials of construction consist principally of coarse sticks, to which grasses, feathers, corn-silk, and similar materials may be added for the lining. The nest is a rough affair, measuring from a foot and a half to two feet in diameter and but a few inches in thickness. It has been compared to the nest of the Crow; but it is by no means so elaborately constructed. Its concavity is very slight, and frequently but sparingly lined.

EGGS:

The eggs of a set vary in number from three to six, four being the usual complement. The shell is somewhat granular, and varies in color from chalky white to a faint greenish-blue. Ordinarily it is tinted with greenish-blue. Sometimes the tint is of different intensity in different parts of the same egg. The markings consist of blotches, spots, and, occasionally, streaks of brown. Usually the marks are very indistinct, and may easily be overlooked. Sometimes the brown is decided. The markings are most abundant about the base. Some eggs are entirely unmarked. In size the eggs average about 1.48 x 1.90. According to Dr. Brewer, eggs of this species vary from 1.50 to 1.60 in short-diameter, and from 1.85 to 2.00 inches in long-diameter. Dr. Coues, in "Birds of the North-West," gives the variations from 1.80 to 2.10 in long-diameter, and from 1.55 to 1.60 in short-diameter. A set of eggs collected by Mr. Chas. Dury of Cincinnati, measures respectively 1.45 x 1.90, 1.46 x 1.87, and 1.46 x 1.88. Incubation is said to last twenty-seven days.

DIFFERENTIAL POINTS:

See *Circus hudsonius*, Marsh Hawk.

REMARKS:

Fig. 2, PLATE XLIX, represents the usual sizes, shapes, and colors of the eggs of the Cooper's Hawk. Two of the eggs figured were collected by Mr. Chas. Dury, April 29th, 1879, near Cincinnati; the other egg figured, came from a set collected in Ross County, in May, 1880.

My experience in collecting the eggs of this species has been very limited. I have found numbers of nests, but never an accessible one that contained fresh eggs. I raised from a nestling a male Cooper's Hawk, and kept him until he was nearly a year old. He was an interesting pet, full of cunning and boldness. He became so tame that he had the liberty of the town. He would wander about from tree to house-top, and would sometimes be gone a whole day. He was very fond of buggy-riding, and would sit on the dash-board for hours manifesting the greatest interest in the objects passed. I intended to teach him to hunt, and was making rapid progress with his lessons, when I was obliged to leave for college. Some months later a letter brought me news of his death. A boy had killed him with a stone. The Cooper's Hawk, or the Hen Hawk, as the species is called by the country people, is the most destructive to poultry of any of the family. It is active on the wing, and of courageous spirit, and does not hesitate to attack birds much larger than itself. It catches many small birds upon the wing, and it sometimes even attacks ducks. I have twice seen a Cooper's Hawk dart into a flock of Red-winged Blackbirds, and in each instance it secured a Blackbird in its talons.

Instead of *Buteo cooperi*, PLATE XLIX, read *Accipiter cooperi*.

PLATE XLIX.

Fig. 3. *BUTEO LINEATUS*—Red-Shouldered Hawk.

The Red-shouldered Hawk, although throughout the year a common resident of the State, is more plentiful in winter than in summer. Its distribution during the nesting season is irregular. About Circleville, the Red-tailed Hawk seems to take its place, and in some sections where it is plentiful during the nesting season, I am informed, the Red-tailed Hawk is uncommon. Dr. J. M. Wheaton, in his report upon the ornithology of Ohio, states that the two species mentioned seem complementary to each other.

The nest is constructed in March or the first part of April. But one brood is reared by a single pair during the season.

LOCALITY:

The nest is placed in a tall tree; usually in a retired wood, near low, swampy ground.

POSITION:

A perpendicular or horizontal fork is chosen for the site, at a distance of fifty feet or more from the ground. Occasionally, a nest is found much lower; but, as a rule, they are high up in the largest trees.

MATERIALS:

The nest is composed principally of coarse sticks, arranged into a strong, round platform, slightly concave on top. In the concavity are usually placed moss, feathers, strips of bark, corn-husks, or other soft materials, which serve as a lining. The depth of a nest used for the first time is about four inches; the diameter, about two feet. The diameter of the cavity can not be measured, as it has no well-defined outline.

EGGS:

Three or four eggs generally constitute a set. The shell is granular; and varies in ground-color from white, generally soiled, to quite a dark shade of yellowish-brown. Some eggs are entirely or almost unmarked; others are thickly blotched, spotted, and speckled with various shades of brown. One egg before me is blotched so thickly, about the basal half, that a mass of almost solid color is formed, which covers a third of the shell; the remaining two-thirds is also heavily marked, but patches of ground-color are here and there plainly visible between the blotches and spots. Another egg is spotted pretty regularly over the entire shell, with marks about the size of a pin's head. Another egg has fifteen good sized circular blotches, and about as many more which are two or three times as long as wide, and much less distinct—the latter have their greatest length parallel with the long-diameter of the egg, and between these are innumerable dots and speckles. Another has fifteen to twenty marks, composed of

blotches, spots, and speckles, principally about the base; and another is similarly marked about the point, the basal half being immaculate.

Deep shell-marks are infrequent; but, when they occur, they appear grayish. It is impossible to more than indicate the various patterns. Even between eggs of the same set there is great diversity of markings. Sometimes a plain egg is found in a set, all the others of which are plentifully marked, and *vice versa*. The color of the markings is subject to considerable variation. Sometimes it is greenish-brown, sometimes yellowish-brown, and sometimes reddish-brown; and these colors run through all shades, from the faintest to the deepest.

The eggs vary in long-diameter from 2.00 to 2.25 inches, and in short-diameter from 1.60 to 1.80. The majority of eggs measure between 2.10 and 2.20 in long-diameter, and between 1.70 and 1.78 in short-diameter. Incubation lasts, according to Mr. F. W. Carpenter, twenty-seven days.

DIFFERENTIAL POINTS:

See *Buteo borealis*.

REMARKS:

Fig. 3, PLATE XLIX, represents three eggs of the Red-shouldered Hawk, selected from two sets. One of these was collected by Mr. Charles Dury, near Cincinnati, in April, 1870. The other was collected north-east of Columbus, in April, 1883.

The Red-shouldered Hawk is said to feed largely upon frogs, rats, and mice. Only occasionally does it commit depredations on the poultry yard. The pairs remain mated throughout the year, and do not engage in family quarrels as soon as the brood is reared, as do the Red-tailed Hawks. A pair will occupy the same nest for a number of years, if undisturbed, adding each spring the necessary repairs.

The Red-tailed Hawk has the same habit of remodeling its old nest year after year, instead of building an entirely new structure. I have known a nest to be occupied the year after I had killed one of a pair which, at the time, had young in the nest; and from this I inferred the remaining bird had found another mate, and had returned to the old home, or else a pair of birds too lazy to build a new nest had taken possession of the old one which had been abandoned.

Nesting of the Red-shouldered Hawk is often delayed by cold and stormy weather several weeks beyond the usual time. Generally, egg-laying begins about two weeks later than with the Red-tailed Hawk; but, if the spring is wintry, the time between the laying of the two species is considerably lengthened, from the fact that *B. borealis* cares little for cold and wind when the season of house-keeping arrives. I have discovered its eggs when the temperature was below freezing and the ground covered with snow, and have no doubt that many of the sterile eggs found are rendered so by too great a loss of heat.

A wet season affects materially the appearance of the eggs of both species, as the coloring matter of the markings is quite soluble in water. In a given set of eggs, the brightness and intensity of the markings, as well as the clearness of the ground-color, depend largely upon whether the days during oviposition have been wet or dry. Thus, if showers occur, the eggs exposed will be more dingy, cloudy, and nest-stained than if dry weather prevails.

PLATE XLIX.

Fig 4. *BUTEO BOREALIS*—Red-tailed Hawk.

The Red-tailed Hawk, or Hen Hawk, is a very common and well-known bird. It builds its nest in March, or earlier. The young are generally hatched about the 20th of April. But one brood is reared by each pair during the season.

LOCALITY:

The nest is always placed in a tree, generally at the edge of thick woods, but sometimes in the interior. Occasionally an isolated tree, or one in very open timber-land is selected for the site. The large sycamores in river bottoms furnish secure and favorite situations.

POSITION:

The nest is generally situated near the top of the tree, in a perpendicular crotch formed by two or more branches; but, sometimes, it is built at the bifurcation of a horizontal limb, and is held in position by small perpendicular twigs. It is not often within fifty feet of the ground; and, ordinarily, is as much higher as the selected tree will permit.

MATERIALS:

Rough sticks compose the bulk of the nest. These are crossed and tangled into a large and firm platform, concave on top, between two and three feet in diameter, and from a few inches to a foot or more in depth. The lining consists of corn-husks, corn-silk, strips of grape-vine bark, feathers, leaves, weed-stems, and like material. The concavity of some nests is well lined, and measures several inches in depth; in others it is poorly lined, and but slightly concave.

EGGS:

The complement of eggs is commonly three; occasionally one more or less. They measure in long-diameter from 2.15 to 2.60, and in short-diameter from 1.80 to 2.00 inches. The majority of eggs are between 2.30 and 2.50 in long-diameter, and between 1.85 and 1.95 in short-diameter. The ground-color is either chalky white, a light tint of yellowish-brown, or, as is generally the case, dirty, or soiled white. Some eggs are unmarked. Some are marked with indistinct blotches and spots of ochre; and others are variously blotched, spotted, and speckled with reddish-brown or yellowish-brown. One egg in my cabinet is unmarked, except by indistinct clouds of yellowish-brown. One is marked principally about the point, by a number of large, bold blotches of ochre. One has seven large blotches, and about twice as many spots of reddish-brown, besides a blotch of ochre about an inch in diameter, and a number of rather distinct, purplish deep shell-marks. And one is sparingly marked by small round blotches of yellowish-brown. The shell of the egg is granular, often even quite rough. The blotches, except the

more indistinct ones of yellowish-brown and ochre, are often made up of numerous confluent marks, and have generally ragged edges. The majority of the markings are usually about the point, instead of about the base as is the case with most eggs.

DIFFERENTIAL POINTS:

The eggs of the Red-tailed Hawk average some larger than those of the Red-shouldered Hawk, and, as a rule, are not so heavily marked. There is also less yellow on the latter. Extreme specimens of each it is impossible to identify.

REMARKS:

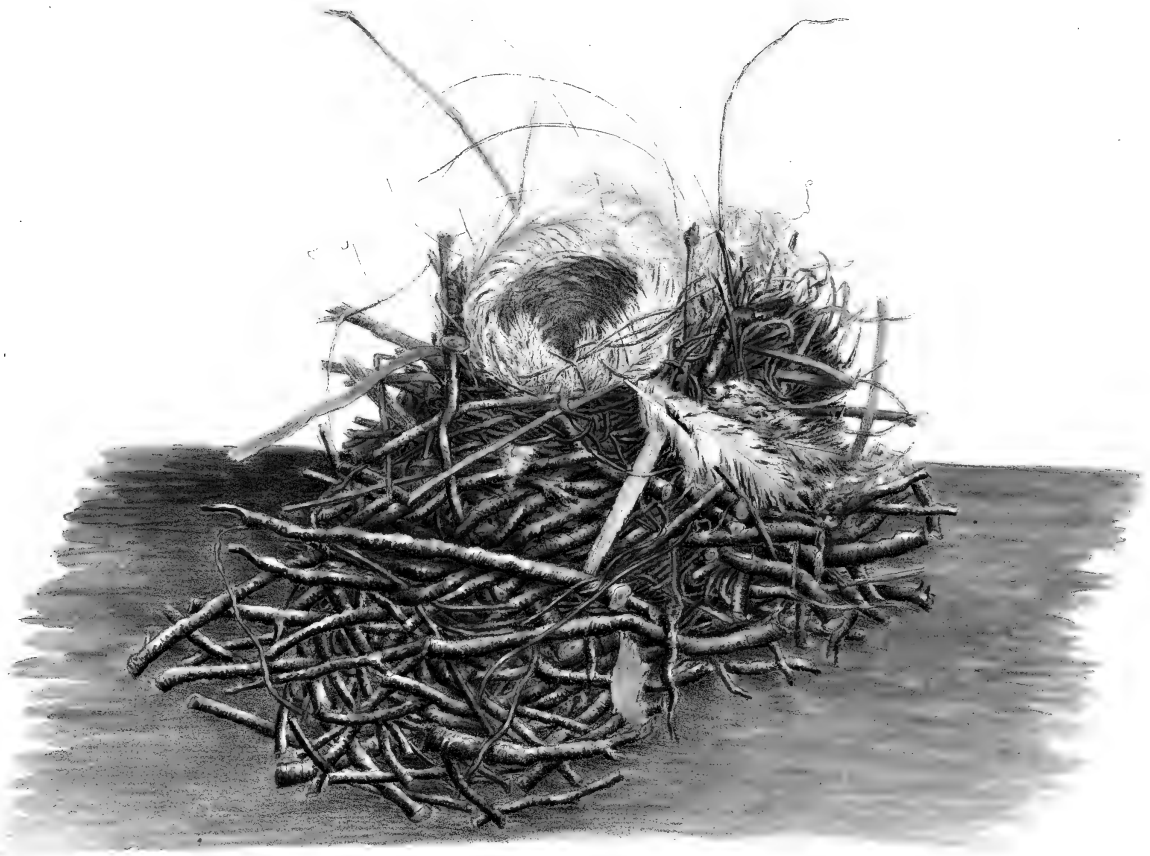
Fig. 4, PLATE XLIX, represents three eggs of the Red-tailed Hawk, selected from five sets. The egg at the left was taken April 19th, 1879, from a nest two miles south of Circleville. The other two were taken from nests east of the same town, in 1878 and 1882.

The Red-tailed Hawk, or Hen Hawk, has many enemies. The hunter and the whole country populace are arrayed against it, and the State, until recently, has paid fifty cents for every head. But, notwithstanding, the species is plentiful. I rarely go to the country without seeing one or more of these birds; and I can easily count a dozen nests within a radius of five miles. This Hawk, like all of the family, is very intelligent, and is expert in avoiding danger. It seems to be perfectly familiar with all kinds of guns, and gives them a wide berth. It is impossible to walk near enough to an old bird to kill it with a shot-gun; but young ones are not so shy.

The Red-tailed Hawk feeds principally on rats, but it is by no means limited to this diet: mice, snakes, squirrels, rabbits, quail, chickens, and numerous small birds, fall prey to its hunger. Throughout the year this species remains in the neighborhood of its nest, but it makes long journeys in search of food, the hunting grounds of a single pair of birds often extending over many miles of territory. In February, these Hawks are frequently seen in pairs circling in the air, or sitting near together upon a tree. During the period of egg-laying and incubation the male is watchful, and shows his mate much attention. He often brings food to her, and, when the young are hatched, he becomes solicitous for their welfare and hunts the greater part of the day for their support. In 1879, I climbed to a nest which contained three young birds but a few days old, and, much to my surprise, found five full grown rats lying upon the rim of the nest. They were nicely laid away, probably to be used at some future time when the result of the days foraging would not be sufficient to appease the growing appetites of the little ones.

When sitting upon her eggs, the mother bird is often invisible from below, and is with difficulty driven from her nest. Of all the birds which I have observed, the Red-tailed Hawk shows the most valor and love of offspring. I have seen the female take load after load from a shot-gun, while defending her home from attack, and, finally, with shattered bones and wounded muscles alight beside her young, when she must have known that such an act would be certain death.

The cry of the Hen Hawk is shrill and grating, and is well known by domestic fowls, which, holding the Hawk in dread, duck their heads and scamper for cover at every cry. The Blue Jay mimics to perfection its screaming notes, and may possibly enjoy flying noiselessly into a tree under which chickens are feeding and then suddenly uttering the Hawk's scream. I have seen the Blue Jay do this trick several times, and I imagine he has just mischief enough in him to delight in the fear and consternation of the chickens.



PL. I.
TROGLODYTES AEDON.
HOUSE WREN.

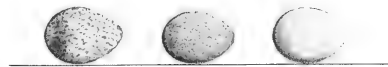


PLATE L.

TROGLODYTES AEDON—House Wren.

The House Wren arrives in the vicinity of Columbus about the middle of April, and remains until October. It is very prolific, generally rearing two, and often three, broods during the season. The first nest is constructed early in May, the second in June or July, and the third in August.

LOCALITY:

The House Wren frequents out-houses and dwellings in town and country, and may place its nest in any sheltered cranny. Occasionally, it retires to the woods or field, considerable distance from a dwelling, and builds in the hollow of a log, stump, or limb, or in a fence corner, brush-heap, or some such place; but it is fond of human society, and quite generally takes advantage of the protection which the works and presence of man afford. Curious and unexpected situations are sometimes chosen for the nest, such as an old human skull, a buggy-top, a bee-hive, an old boot or hat, the sleeve or pocket of a coat—in fact, none of the hundreds of places which the rubbish about a house offers escapes the inquisitive search of this delightful little bird when on the lookout for a building site. Corners and holes in old barns and wood-sheds, hollows in old apple trees, and small boxes, made for the purpose and placed on poles or nailed under the eaves of houses, furnish the most frequented nesting places.

POSITION:

The nest rests upon the bottom of the chosen cavity, and often fits snugly against the sides. Its distance from the ground varies from a few inches to twenty or thirty feet. When a natural cavity in a tree is selected, it is seldom but a few feet from the ground.

MATERIALS:

Sticks, weed-stems, strings, horse-hairs, bits of paper, rags, feathers, grass, moss, and rootlets, in various proportions, constitute the greater part of the nest. The rougher materials are in the foundation and superstructure, the finer in the lining. One nest in my cabinet has a foundation and superstructure of small sticks, and a lining of grass and horse-hair. One has, in its foundation and superstructure, besides sticks, moss, bark, leaves, and lichens. Another has, besides the materials just mentioned, paper, rags, and spider's web. The lining of the last two nests is very similar, being composed almost entirely of an abundance of chicken-feathers, held in place by a few horse-hairs. The diameter of the cavity is the same, about two inches, in each of the three nests. The depth of cavity in each measures, respectively, one and three-quarters, two, and two and one-eighth inches. A nest from Columbus measures but one and one-half inches in depth of cavity. The external dimensions vary with situation. The birds always fill the cavity as completely as possible, whether it is a half-bushel basket or a three-inch mortise hole. The cavity of the nest generally opens from above; but sometimes the materials of construction are piled up the sides so as to nearly roof it over.

EGGS:

The complement of eggs varies from five to nine. The first set contains more than the second, and the second more than the third. They measure from .62 to .72 in long-diameter, and from .48 to .55 in short-diameter. A set of six eggs, collected by Mr. J. M. Thayer, of Cleveland, measures, respectively, .67 x .53, .67 x .50, .67 x .51, .66 x .51, .65 x .49, and .70 x .52. Another set of six, from Fayette county, averages about .65 x .50. The ground-color of the shell is sometimes white, sometimes pinkish or pinkish-gray in tint. The markings are uniformly brown-madder; but the deep shell-marks appear bluish or purplish. The following descriptions of eggs show the common variations in pattern: No. 1 is marked, upon a white ground, with speckles and minute dots, everywhere so thickly and uniformly distributed as to nearly obscure the ground. No. 2 has a pinkish ground, and is pretty thickly marked over its whole surface with almost invisible speckles. No. 3 is plentifully marked with spots and speckles about the smaller end, and has a well-marked wreath about the base, composed of irregular dots and lines confluent with each other and with numerous deep shell-marks. No. 4 shows, between fine speckles, small patches of white ground about the point, and has a well-marked wreath of dots about the crown. No. 5 is similar to No. 4, except that the speckles are about the base and the wreath is about the point. The shape of the eggs varies considerably, some are slender and pointed, others are elliptical, with but little difference in the length of the axes. Between these extremes there are various forms.

DIFFERENTIAL POINTS:

Since writing the description of the nest and eggs of the Bewick's Wren, I have found four nests of that species, containing from four to six eggs each. On comparing these five nests, with their accompanying eggs, with those of the other Wrens, the following points of similarity and difference are apparent: The nest of the Bewick's Wren resembles, in materials of construction and workmanship, that of the Carolina Wren closer than that of the House Wren; but, in size and shape, it is more like the latter. When the nest of the House Wren is confined to a small space, it approaches very closely the nest of the Bewick's Wren. The lining of the two nests is often exactly alike, but the foundation and superstructure of the House Wren's nest is seldom composed of as fine and various materials as is the nest of the Bewick's Wren, and its cavity is, as a rule, a little deeper and a little less in diameter. The difference in the materials of construction is apparent in the illustrations. When the House Wren is not limited in space, its nest is unique. The eggs of the House Wren generally bear but little resemblance to those of the Bewick's Wren, or to any of the family. Exceptional specimens are sometimes so sparingly marked as to look like the eggs of the Bewick's Wren, and sometimes so heavily marked that they bear a great similarity to eggs of the Long-billed Marsh Wren. The eggs of the Carolina Wren are the largest, the eggs of the Bewick's Wren come next, and those of the Short-billed Marsh Wren last. The eggs of the House Wren and Long-billed Marsh Wren are the same in size, and smaller, on the average, than those of the Bewick's Wren.

REMARKS:

The illustration, PLATE L, represents a nest of the House Wren, taken June 12th, 1883, from a hollow apple-tree, on the grounds of Mrs. Ide, at Columbus. It was in the main trunk of the tree, about two feet from the ground. It is of rather small size in external dimensions, but its position and materials of construction are typical. In order to picture the nest to advantage, it was necessary to lift it from its position, as was done with the nests of the Carolina Wren and the Bewick's Wren. The eggs figured were selected from about a dozen sets. They represent the usual variations in size, shape, and markings.



Pl. LI.
SETOPHAGA RUTICILLA.
AMERICAN REDSTART.

PLATE LI.

SETOPHAGA RUTICILLA—American Redstart.

The American Redstart is a common summer resident throughout the State. It arrives from the South the last of April, or the first of May, and remains until the middle of September or later. It frequently rears two broods during the season, the first nest being constructed about the 15th of May, and the second early in July. June 14th, 1883, I saw a Redstart feeding her young; they were out of the nest and well able to fly; and on August 1st, I saw another young brood following their mother.

LOCALITY:

The nest is usually on a sapling, sometimes on a branch of a tree, in dense woods. Occasionally it is in an isolated tree in town or country. During the nesting-season, I have always found the Redstart the most plentiful in woods along rivers and creeks; but, on account of the heavy undergrowth in such localities, it is very difficult to discover their nests.

POSITION:

The nest is usually built either in an upright crotch formed by two or more branches, or is placed against the trunk of a slightly inclined sapling where one or more small twigs or leaf-stems put forth. Occasionally it is fastened to a perpendicular trunk, and is unsupported by branches or leaf-stems. When in a fork, it is generally at the bifurcation of the main trunk, and, whatever its position, is but rarely concealed or protected by foliage. Its distance from the ground varies from five to twenty feet, ten or twelve feet being the ordinary height. Although often built at the bifurcation of the trunk, or of a branch of a sapling, it is not saddled in the crotch. A fork narrower than the nest is selected, and then the nest is placed against the branches in such a manner, that a perpendicular line drawn through its center is exterior to the main stem. It also differs from other nests situated in forks, in the fact that the materials of construction are fastened to the bark instead of being wound around the branches.

MATERIALS:

A nest found May 15th, 1880, was situated nine feet from the ground, at the bifurcation of an elm sapling. Its foundation and superstructure are composed of gray flaxen fibres from the inner-bark of a weed, probably the common milk-weed. Some of these fibres run completely around the nest, especially at the rim, which is slightly contracted, but the majority begin and end at the branches, the bark of which is rough and affords good points of attachment for the fibres. None of the fibres are wound around the branches. In several places bits of web are attached to the bark, and to the nest. The lining is composed of long white, black, and red horse-hairs arranged circularly, and at the rim felted with fine vegetable fibres which are continuous with the foundation and superstructure. The nest is quite round, and measures two and one-eighth inches in external diameter, by two and one-fourth in external depth. The

diameter of the cavity is one and seven-eighths, its depth one and one-half inches. From these measurements it will be seen that the wall of the nest is very thin.

A nest taken June 20th, 1882, is similar as regards position, but is a little larger externally, and has mixed with the flaxen fibres of the foundation and superstructure strips of grape-vine bark, and with the hairs of the lining split grass and roller-grass. Another nest discovered June 24th, 1883, in dense upland woods, was situated twelve feet from the ground on a slightly inclined hickory sapling, at a point where a small twig branched from the main trunk at an angle of about 45°. It is constructed so that the twig runs through it, between the lining and the superstructure. Upon one side about two-thirds of the nest is exterior to the crotch. Its foundation and superstructure are composed of flaxen fibres, inner bark of grape-vine in long shreds, and balls and strings of snow-white web from a peculiar plant-louse which infested the maples the past year. The grape-vine bark is most abundant around the rim. The lining is composed of very finely split grasses, long black horse-hairs, and one black feather. The materials are not wound around the trunk, but are fastened to the bark by web. The external diameter of the nest is about two and one-half inches; the external depth two and three-eighths. The diameter of the cavity is one and seven-eighths; the depth one and one-half inches. This nest, although much more loosely built, and some larger externally than the others, has exactly the same internal dimensions. Other materials besides those mentioned in the above descriptions, often enter into the composition of the nest; such as soft vegetable-downs, rootlets, and leaves. Some nests are composed largely of down and fibres felted together, and some are lined entirely with split grasses or rootlets. But whatever the materials or external dimensions, the diameter of the cavity is very uniform.

EGGS:

Four or five eggs constitute a set, four is the usual number. Those in my collection from Ohio, vary in long-diameter from .59 to .68, and in short-diameter from .45 to .51. Ten eggs, from as many sets, collected in widely different parts of the United States, come nearly within the same limits. The usual size is about .49 x .60. A set of four measures, respectively, .48 x .61, .50 x .62, .49 x .60, and .48 x .60. The ground-color of the shell is white, often of yellowish or soiled appearance. The markings are yellowish-brown of quite uniform tint, but of slightly various shades. The deep shell-marks are slate color. An egg of the usual pattern is blotched, dotted, and speckled; the dots and speckles are scattered sparingly over the whole shell, and about the crown the blotches, which are in places confluent, form a well-marked wreath. An extreme specimen has its pointed half immaculate, but about the base there is a well-defined ring of small blotches, dots, and speckles, rarely confluent, of pale surface marks and deep shell-marks in about equal proportions, and besides several fine, irregular lines. Another extreme specimen is boldly blotched, dotted, and speckled, from point to base, most plentifully at the base, with a dark shade of yellowish-brown. Between these extremes there are various combinations.

DIFFERENTIAL POINTS:

The nest and eggs of the Redstart have often been said to resemble those of the Summer Warbler, and there is, on casual inspection quite a similarity. Reference to page 71 will, however, show quite distinct points of difference between the nests, not only as to size, but also as to materials, and mode of construction. The eggs of the two species are at times very much alike, but as a rule those of the Redstart are the smaller. See also table.

REMARKS:

The illustration, PLATE LI, represents a nest of the American Redstart, collected June 24th, 1883, a description of which is given above. The eggs figured show the sizes, shapes, and patterns of markings ordinarily observed, the middle one being perhaps the commonest form.



Pl. LII.
AMPELIS CEDRORUM.
CEDAR WAX-WING.



PLATE LII.

AMPELIS CEDRORUM—Cedar Wax-wing.

The Cedar Wax-wing, Cedarbird, or Cherrybird, as this species is variously called, is usually seen between the months of November and June, inclusive, in flocks of a dozen to fifty, flying high in the air or perched upon some friendly tree. It is emphatically gregarious and nomadic, except during the period in which it is engaged in rearing its young, which is any time from June until October. As soon as mated, the pairs leave the flock and go in search of a suitable locality for the nest. It often happens that several pairs build in close proximity to each other, but on different trees. Only one brood is reared during the season. Although seen in large flocks most of the year, but few seem to breed within the limits of the State; at least, its nests are uncommon and unequally distributed in the territory with which I am familiar.

LOCALITY:

A medium sized tree near a dwelling, either in town or country, is usually selected for the site of the nest. An apple-tree or pear-tree is a great favorite; but not infrequently a cedar, maple, wild-cherry, or some ornamental tree in a lawn is chosen. The nest is rarely built in woods, unless about the border, as the birds prefer open and cultivated ground. The nest is said, by some writers, to be occasionally built in a low bush. I have never observed it in this situation, but have several times met with it in a stunted elm or other dwarfed tree along the wooded banks of the Scioto river.

POSITION:

The nest is usually saddled on a horizontal or slightly inclined limb, at a point where a horizontal branch puts forth or at a bifurcation of the limb; and, in either case, is generally supported firmly at the sides by a number of upright twigs from the limb. Sometimes it is built in a perpendicular crotch formed by two or more branches. Its distance from the ground is ordinarily between ten and fifteen feet, but occasionally it is as low as three feet or as high as twenty or twenty-five feet.

MATERIALS:

The materials which enter into the construction of the nest are very numerous, and often quite dissimilar in different nests, according to the fancy of the builder for this or that material, or according to the locality of the site. Rootlets, weed-stems, tendrils, vegetable-fibres, grass, green and dead leaves, leaf-stems, strings, paper, and rags, are usually found in greater or less proportions. The material is mostly quite soft and fine for the kind, and the foundation, superstructure, and lining, differ but little in composition. Perhaps, as a rule, the lining contains more thread-like rootlets than any other part of the structure. The exterior is rough and untidy in appearance, and at once suggests the roving and careless disposition of the builder. The external diameter measures from four to five inches, and its depth about

three inches. The diameter of the cavity varies from two and three-fourths to three and one-eighth inches, and its depth from one and one-half to two and one-half inches.

EGGS:

The complement of eggs is four or five, four being the usual number. They vary in long-diameter from .80 to .91, and in short-diameter from .57 to .67. The largest egg in ten sets measures .91 x .60, the smallest, .82 x .57. The common size is about .88 x .60. The ground-color of the shell is generally moderately tinted with bluish-green, but occasionally with blue-gray or slate-color, and still less frequently it is clouded by a wash of brown. The markings consist of well-defined dots and specks of sepia, so heavily laid on as to appear black. On some eggs the marks are distributed sparingly, but quite regularly, over the whole shell. On some they wreath around the base, while on others, and this is the usual pattern, they are scattered in small coalescent groups here and there over the surface. Considerable space generally separates the dots from each other, and it is exceptional to find more than two or three marks that are confluent. The deep shell-marks are often nearly as numerous as surface marks, and occasionally more plentiful. Their color is neutral tint of more or less intensity, according to their depth.

DIFFERENTIAL POINTS:

See table.

REMARKS:

The nest illustrated, PLATE LII, was taken July 20th, 1883, from a small elm tree within twenty yards of Mr. Samuel Evans' residence, on Pickaway Plains. It was about fifteen feet from the ground, and opposite a second-story window, from which point a good view of it could be obtained. It is composed principally of split weed-stems, fine rootlets, dead-leaves of the elm, strings, and a bunch of linen ravelings. The lining differs from the foundation and superstructure only in being made of the best quality of the materials. The coarsest weed-stems and rootlets are exterior, the finest within. The external diameter is about four and three-fourths inches. The diameter of the cavity about three and one-quarter inches, the depth, one and three-fourths inches. The eggs figured represent the common sizes, shapes, and markings—the center one is perhaps nearest the average in all respects.

The Cedarbird is of beautiful form and feather, and is especially attractive on account of its handsome crest and "wax-tipped" secondaries. The vermilion wax-like tips are most plentiful on old birds, and, in very fine specimens, are not limited to the secondaries, but may be found also on the tail feathers. In two instances I have found four secondaries beautifully tipped in nestlings. The Cedarbird is said to have a very low song; ordinarily, it utters but a single note, a squeaking whistle of high pitch and peculiar timber. Its domestic life is largely a pantomime show. The billing and cooing is carried on with but an occasional word, and the young are apparently deaf and dumb. I visited the nest illustrated several times before the little ones were out, and found each time the parents absent. At one visit I hunted the neighboring trees, and soon espied the pair, but could not induce either bird to show itself by threatening to take their home. I have frequently taken the eggs of this species without the parents making the slightest resistance, and at other times they have been very demonstrative. Their intelligence is of low order. They are great gormandizers—fearless when hungry, and stupid when satiated. They destroy immense quantities of cherries and small berries; and thousands are shot every year by fruit-growers, who are not far sighted enough to see that the large crops are often due to the Cedarbird, which, in seasons of the year when berries are wanting, feed upon destructive insects, or their eggs and larvæ.



PL. LIII FIG. 1.
MELOSPIZA PALUSTRIS.
SWAMP SPARROW.



FIG. 2.
CHAETURA PELAGICA.
CHIMNEY SWIFT.

PLATE LIII.

Fig. 1. *MELOSPIZA PALUSTRIS*—*Swamp Sparrow*.

The Swamp Sparrow is known in Ohio chiefly as a spring and fall migrant, but it is highly probable that, to a limited extent, it is a permanent resident. I have seen it early in February, and as late as the 10th of November. In the northern counties it is said to breed rather plentifully, and I have no doubt but that it nests in suitable localities throughout the State. In other States, where it has been observed carefully, it generally rears two, and sometimes three, broods during the season. In regard to its nesting habits within the limits of Ohio, I know but very little; and, as there is but little valuable literature upon the subject, I have been obliged to compile the following text from old and recent writings upon the species, as seen in other parts of the United States.

LOCALITY:

The nest is generally situated in a swampy piece of land, with small bushes and tussocks of grass scattered here and there. The low, moist places along rivers, creeks, and ponds, with bunches of reeds and water-grasses growing luxuriantly from the rich soil, and, also, swampy prairie lands, furnish many suitable sites.

POSITION:

Usually the nest is built on the ground in a slight natural concavity at the foot of a bunch of grass or reeds, or in a tussock. Occasionally it is placed in a low bush, and may be a few inches, or three or four feet, above the ground or water.

MATERIALS:

It is constructed of dried grass of various kinds, weed-stems, rootlets, and sometimes weed-fibres. The foundation and superstructure are composed principally of coarse, dead grass, frayed weed-stems, and rootlets, and the lining of well selected grass, or of grass and rootlets combined. It measures, externally, from three and three-quarters to four and a half inches in diameter, by three to three and a half inches in depth. Its cavity measures, in diameter, from two to two and one-quarter inches, and in depth, from one and one-half to two inches.

EGGS:

The complement of eggs is four or five. The ground-color of the shell is commonly light bluish-green, but sometimes it is clay-colored, or clouded by a light wash of brown. The markings consist of blotches, spots, speckles, and, rarely, short lines of reddish-brown, sometimes nearly burnt-siena. The deep shell-marks are bluish or purplish, and not abundant. Some eggs are so heavily marked at the base, that the ground-color is obscured, the rest of the shell being but sparingly dotted and speckled. Some are thickly,

some sparingly dotted and speckled over the whole shell, and some have a wreath of confluent marks about the crown. Others, and this is the usual pattern, have a small patch of confluent marks at the base, and from the periphery of this patch the marks become less and less plentiful as the point is approached. They measure in long-diameter, from .69 to .78, and in short-diameter, from .53 to .58. The average is about .75 x .56. The largest egg of three sets is .77 x .58, the smallest .69 x .53.

DIFFERENTIAL POINTS:

See Yellow-winged Sparrow.

REMARKS:

The nest and eggs illustrated on PLATE LIII, Fig. 1, were discovered the last of May, 1881. I was walking leisurely along a small ditch which drained a field of wet grass-land, and was just in the act of stepping across it, when a small bird flew from under me. I stopped, stooped down, and, after some search, found a little nest hidden under a bunch of long grass. I retired a convenient distance, and awaited the return of the owner. In about fifteen minutes she came back and entered the nest. I at once approached, so that I could see the bird. My conjecture was verified, it was a Swamp Sparrow. The bird was finally flushed and shot, and the nest and its five eggs were carefully lifted from the ground and carried home. This is the only nest of the species I have found, although I have frequently searched for it. The kind of country inhabited by this Sparrow, its retiring habits, and general inconspicuousness, all combine to make its home difficult to find, and its habits hard to study. Even in sections where it is common, it is but infrequently seen, and it might breed and remain throughout the year in many localities in the State and escape observation by any one able to distinguish it from other Sparrows.

In the illustration the nest is shown turned over on its side, as this position better shows its size, shape, and structure. It is made principally of coarse grasses and frayed weed-stems—a few rootlets are to be seen in the foundation, and the lining is composed of grasses. The diameter of the cavity is two inches, its depth, one and one-half inches. When in position, the rim of the nest was on a level with the surrounding sod, and a long tuft of grass concealed it from above, and protected it from the weather.

During its migration the Swamp Sparrow is seen in uplands as well as in swampy districts, and often in company with other Sparrows. It has no song except during the nesting season. At this time it has an animated melody which it frequently utters from the top of some low bush, very much after the manner of the Song Sparrow, but its notes are by no means so attractive. The history of the domestic life of the Swamp Sparrow is yet to be written.

PLATE LIII.

Fig. 2. CHÆTURA PELAGICA—Chimney Swift.

The Chimney Swift, or Chinney Swallow, is very plentiful and regularly distributed throughout the State. It arrives in Central Ohio about the first week in April, and remains until October, during which time it ordinarily rears but one brood; the nest being built the last of May or first part of June.

LOCALITY:

The nest is generally placed in a chimney, either in town or country, the large, old-fashioned flues being preferred. Sometimes it is built in a hollow trunk of a tree, under the eaves of a house, or on a rafter in a barn, but the last two locations are very exceptional. Before the days of chimneys, the nest was placed almost exclusively in hollow trees, and, even to-day, there are some birds which cling to this ancestral habit. About two miles east of Circleville, on Darby creek, is a giant sycamore which, a century or so ago, was topped by the wind; in the trunk of this tree, which is hollow to the roots, Chimney Swifts have built for years. There are other hollow trees in the neighborhood, into which I have also seen the Swifts carrying sticks; and, if all such trees in the State could be counted, they would probably foot up hundreds, or, perhaps, even thousands.

POSITION:

The nest is always built against a perpendicular surface, being held in place by glue secreted specially for the purpose. When located in a chimney, or in a hollow tree, it is not many feet from the top; its distance from the ground accordingly varies with the height of the flue or tree.

MATERIALS:

The materials of construction consist of sticks and glue; the glue is secreted by glands emptying into the mouth of the bird; it is soft and sticky when fresh, and on drying becomes hard and somewhat brittle. The sticks are pretty uniform in size, generally measuring about one-tenth of an inch in diameter, and from one-half to three inches in length; they are glued to the supporting wall, and to each other, in such a manner that a semi-circular, concave shelf is formed, which is, in antero-posterior diameter, from one and a half to three inches, and, in transverse diameter, from three to four inches. A common proportion is two and one-quarter by three and three-quarters inches. The nest, near its attachment to the wall, consists of three or four layers of sticks, at its periphery of but a single layer. The cavity varies from one-half to one inch and one-half in depth. Sometimes the sticks are so covered with glue that they appear as if varnished.

EGGS:

The complement of eggs is usually four. They are pure white, and measure in long-diameter from .75 to .85, and in short-diameter from .49 to .55. A common size is about .52 x .79.

DIFFERENTIAL POINTS:

The nest is unique. The eggs resemble those of several other species. See White-bellied Swallow.

REMARKS:

The illustration, PLATE LIII, Fig. 2, represents a nest and eggs of the Chimney Swift, built in a hollow apple-tree. The specimen was obtained by Mr. Jos. M. Thayer, of Cleveland, and kindly loaned to me for illustration.

The Chimney Swift, in many of its habits, is very peculiar, and its nest is certainly a curious and ingenious piece of workmanship. All day the Swift flies high in the air, often out of sight, and never alights except at its nest or roost. Its food consists of various insects, which it procures while on the wing, occasionally after dark. The material for the nest is also obtained while flying, and in a remarkable manner. Having selected a site for their nest, the birds busy themselves gathering twigs every morning and evening until it is completed. Locust-trees and fruit-trees furnish the sticks for the majority of nests, as they generally have numerous dead branches. The Swift, having chosen a tree from which the material is to be obtained, circles about it until a suitable twig is espied, then flies at it in a gently curving or straight line, in such a direction that it can be seized in the bill and broken off by the momentum acquired by the flight. If the twig does not break it is dropped, and another trial is made, or another twig selected. Both male and female gather sticks, but whether the male does or does not secrete glue, and just how important a part he takes in construction, I am unable to say. It is probable, however, that the female does the greater part of the work. Several nests are frequently built in one chimney; and if, as sometimes happens, hard rains so soften the glue of the nests that their own weight, and the weight of the little ones, precipitate them to the bottom of the flue, a great commotion follows for some days. Sometimes the nestlings manage to climb to the top of the chimney, but usually they perish of hunger.

After the young are safely reared, the life of the Chimney Swift becomes a great holiday. All day they fly about in scattered communities, and at night collect in some favorite chimney to roost. It is an entertaining sight to see them, as night approaches, hastening from every direction to their home. At first, but few are to be seen; but, as the evening glow begins to fade, more and more plentiful they become, delaying the roosting, however, until the last moment. They fly in circles around and around the chimney. Now a small band separates from the rest and flies off to prolong its frolic, now it returns and joins the throng, which resembles leaves carried up in a whirlwind more than a flock of birds. Now some sleepy fellow hangs over the chimney, as if hesitating or measuring the fall, then, suddenly, partially closing his wings, down he tumbles; a dozen follow in rapid succession. A short interval, and another group falls in, others follow, and still others. Now something disturbs those within, and out come fifty or more, and resume their circling flight. Finally, just as darkness comes on, they fall into the chimney in a column. In their eagerness some miss the flue, others strike the masonry, and, occasionally, one is impaled on a sharp-pointed lightning-rod. Thus, to the ordinary observer, ends for the night the incessant chatter and the whirling flight of this bird-colony; but if, with superhuman power, one could divine the thoughts and emotions, the pleasures and hardships of the lives within that long, dark, and often sooty tube which the Chimney Swallow calls home, what sensational bird-history it would make!



1.



2.



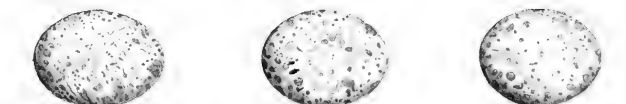
3.



4.



5.



6.



7.



PLIV.

FIG. 1. MYIARCHUS CRINITUS.
GREAT CRESTED FLYCATCHER.

FIG. 2. PASSER DOMESTICUS.
ENGLISH SPARROW.

FIG. 3. MOLOTHRUS ATER.
COWBIRD.

FIG. 4. CHORDEILES POPETUE.
NIGHTHAWK.

FIG. 5. COLAPTES AURATUS.
YELLOW-SHAFTED FLICKER.

FIG. 6. CAPRIMULGUS VOCIFERUS.
WHIP-POOR-WILL.

FIG. 7. ARDEA HERODIAS.
GREAT BLUE HERON.

PLATE LIV.

Fig. 1. *MYIARCHUS CRINITUS*—Great Crested Flycatcher.

This species is the largest of the Flycatcher family inhabiting Ohio, and is one of our most interesting birds. It arrives the latter part of April, and remains through the second week of September, or a week or two later if the weather is exceptionally fine. It is not so numerous as the Acadian Flycatcher, still it is plentiful in all wooded districts. It is very noisy, uttering at frequent intervals, during the mating season, a loud, harsh cry, and, being shy and retired in disposition, it is much oftener heard than seen. The nest is built early in June, and but one brood is reared during the season.

LOCALITY:

The nest is usually placed in a hollow, horizontal limb, or in the decayed trunk of a low tree in rather open woods. In town, and about country dwellings, an apple-tree is the favorite site. Sometimes a deserted Woodpecker-hole, a bird-box, or a crevice in an old stump is selected. Dr. Wheaton has seen the Great Crested Flycatcher forcibly expel a pair of Bluebirds from their home, break and throw out their eggs, and take possession of the premises.

POSITION:

The nest is placed on the horizontal floor of the cavity, often several feet from the opening. When in a hollow limb it is seldom over fifteen feet from the ground, between seven and ten being the usual distance.

MATERIALS:

The size and shape of the nest vary with the dimensions of the cavity in which it is placed, and the materials of construction vary considerably even in the same locality. Nearly every available substance is at times used; weed-stems, grass, leaves, feathers, hair, rootlets, moss, vegetable-down, strings, rags, paper, and bits of cast-off snake-skins, being found in various proportions in different nests. Leaves, rootlets, grass, and weed-stems generally make up the foundation and superstructure, and feathers and hair, or grass and fine fibres compose the lining. The most constant substance is the cast-off snake-skin. Every one who has described this nest mentions having found more or less snake-skin, and I have never seen or heard of a nest that did not contain it. It is commonly placed about the rim in little pieces, but it sometimes occurs in large sheets and in wrinkled sections in various parts of the structure. The object which the birds have in using this singular and apparently useless substance can only be conjectured.

EGGS:

The complement of eggs varies from four to six; the most frequent number is, perhaps, five. They meas-

ure in long-diameter from .80 to .95, and in short-diameter from .60 to .72. A common size is about .88 x .65. Dr. Brewer, in "North American Birds," mentions an egg which was 1.10 x .70, and another .90 x .75, and he gives the average size, 1.00 x .75. Dr. Coues, on the other hand, gives the usual size about .85 x .62, page 239, "Birds of the North-west." The ground-color of the shell is buff or yellowish clay-color. The markings consist of lines, blotches, spots, and speckles of burnt umber, or walnut-color; the deep shell-marks appearing purplish or bluish. The eggs are very beautifully and curiously marked, being entirely different from any other eggs of the State. The lines run lengthwise principally, beginning sometimes with a blotch at the base and narrowing out to the width of a pen scratch at the point. Between, and often crossing these lines, are others which are shorter and more uniform in diameter; and, scattered pretty evenly over the shell, at various angles with these, are other lines which are quite short, and as sharp and delicate as can be made by an etcher's pen. While the marks are largely lines, still, on every egg, and on some more than others, are to be found, at irregular intervals, blotches, spots, and speckles. The ground-color is generally plainly visible between marks, but, occasionally, it is obscured at the base by confluent, deep shell-marks and surface marks. It is difficult to describe the usual pattern of these eggs accurately, and it is impossible to give a good idea of the curious designs sometimes seen.

DIFFERENTIAL POINTS:

The nest of the Great Carolina Wren is occasionally so located and constructed as to resemble somewhat that of *M. crinitus*, and is the only other nest in the State which often contains snake-skin. With this exception, the nest under consideration may be known by the cast-off snake-skin. The eggs are so different from any others that they can always be recognized at a glance by any one who has once seen them, or who has read a description of them.

REMARKS:

Fig. 1, PLATE LIV, represents three eggs of the Great Crested Flycatcher, of the usual sizes, shapes, and markings. They were selected from five sets.

The Great Crested Flycatchers are very quarrelsome and tyrannical among themselves, or at least they appear to be, as they are continually scolding and complaining to each other and engaging in fights. This, however, may all be in fun, and their notes, which are so harsh and grating to the human ear, that when once heard are never forgotten, may convey to each other very pleasant and peaceful ideas.

Their food consists of insects, which they catch on the wing, in true Flycatcher style, and also of small fruits and berries. After the young are out of the nest they remain with their parents up to the time of their departure for the South. In 1879, I found a nest in a hollow limb of an apple-tree which was about the dirtiest and foulest bird-home imaginable. The site had evidently been occupied by the Flycatchers for several seasons, and, previously, by Bats and Screech Owls. There was a hat full of half-decayed vegetable material, upon which the young were lying, and in this rubbish were worms, ants, bed-bugs, lice, and a partially decomposed young Flycatcher that sent forth a sickening odor. It was, all things considered, a most undesirable place to live, yet the parents seemed to take much pride in their residence, and made a great noise and bluster during the limited time I was examining it. As a rule, the nest is not very clean and tidy, and it may be that the snake-skin used in the nest has an odor pleasant to the birds.

PLATE LIV.

Fig. 2. PASSER DOMESTICUS—English Sparrow.

The English Sparrow has adapted itself so well to the climate of Ohio, that it is now necessary to consider it among the permanent residents of the state. It generally builds its nest during the first warm weather in March or April, and rears from two to four broods during the year. In mild winters it is not uncommon for a few ambitious birds to begin nesting at any time; nests are probably built every month of the year, but incubation is not often successful except during the warm months.

LOCALITY:

The English Sparrow frequents towns almost exclusively during the nesting season. Sometimes however, a few may be found about country residences, and it is probable that as their numbers increase, the country as well as the city will become infested with them. The nest is generally placed about the cornice or a window cap of a building, in a bird-box, a densely clustered vine, a hollow limb, a forking branch, or some such place which will afford a suitable protection from the weather. It is astonishing with what courage and vigor they take possession of any available hole, crevice, or nook, and with what pluck and stubbornness they defend their assumed rights. They insinuate themselves into every hole and crevice about the cornice and windows of the best buildings on the principal streets of our cities. So numerous are they that dozens of families are reared about a single building. It will not be necessary to attempt an enumeration of the different situations in which the nest is placed, as it is found almost any-where at times.

POSITION:

The nest is supported from below, at the sides, or from below and at the sides combined, according as it is built in a cavity, a crevice, or in a forking limb.

MATERIALS:

Any thing which the builders can carry may be taken for construction purposes; but generally straws rootlets, grasses, bits of paper, strings, horse-hairs, and feathers from the poultry-yard, compose the home. The bulk of the nest is made of the coarser materials. The feathers are used for the lining. The external dimensions of the nest vary with the situation. There is often half a bushel of rubbish in one nest, and again scarcely a handful. The diameter of the cavity rarely varies three-eighths of an inch from three inches. Usually the cavity is globular, with a side entrance, but sometimes an open nest is constructed, in which case the cavity is about two inches deep. A nest built over my office door, in a ventilating window, rests upon the sill between the glass and an iron grating. The entire space is nearly filled with hay, straw, and coarse materials. The entrance to the cavity is at the left, and extends by a narrow passage-way about a foot, where it opens into a globular-shaped room, about four inches in diam-

eter. Opposite this entrance is another door which leads to a smaller room, and in this, at the present writing, are four half-grown Sparrows. The first room was probably used for a previous brood.

EGGS:

The complement of eggs varies from four to six; the ground-color of the shell is tinted faintly with grayish-blue, and upon this ground occur spots, blotches, and speckles, and also occasionally coarse lines of sepia. Some eggs are pretty evenly and thickly marked. Some are marked principally at the base, and others are evenly but sparingly dotted and blotched. There is, however, much more uniformity in the eggs than would be expected under the circumstances. They measure in long-diameter from .85 to .95, and in short-diameter from .60 to .65. A common size is about .88 x .61.

DIFFERENTIAL POINTS:

See Table.

REMARKS:

Fig. 2, PLATE LIV, represents three eggs of the English Sparrow of the usual sizes, shapes, and markings. The center egg is perhaps the commonest size and pattern.

As the House Sparrow is not one of our native birds, and as the nest varies so much on account of the species' semi-domestication, only the eggs are here illustrated. About fifteen years ago the first successful attempt was made to start a colony of House Sparrows in an Eastern city. A few years later other colonies were started in several Atlantic towns, and from this small beginning, the country is to-day overrun with this pugnacious little foreigner. In Ohio it is no longer limited to the cities, but is found in every village as well, and it is not uncommon to see large flocks of young birds hunting the country fields for food, or resting on some roadside fence.

Much has been written against this remarkable bird, as well as much in its favor. That it is of some value in destroying noxious insects can hardly be denied, but it is also true, I think, that it prefers other food, and generally gets its living from the streets and yards, rather than from the trees. It seems to be peaceable enough with other birds, but quarrels some with its own species. It frequently takes possession of a Martin-box, and has its nest constructed when the Martins arrive, but in every instance that I have observed the Martins have easily repossessed their home and turned the Sparrows out in the cold. I can not see that our native birds have diminished any in number since the Sparrow has become so plentiful; certainly the food supply of the insectivorous birds has not been perceptibly diminished. The greatest objection to the new-comer is that he is a dirty and noisy little fellow and is inclined to keep the fronts of our houses unclean. To counterbalance these disadvantages, he has some good qualities, among which may be mentioned his cheerfulness during the cold, bleak months of winter, when most birds are quiet, and but few have the hardihood to show themselves at all.

The English Sparrow is very watchful of its nest and is very attentive to its young. At times it is brave and fearless, and many true and touching instances of its care and affection might be related if the length of this article were not already drawn out. Whatever sins may be laid at the door of this Sparrow, it must not be forgotten that he did not come here uninvited. In fact, it nearly broke his heart to leave his native land, but having recovered from homesickness he began to show qualities of pluck and endurance which challenge all bird history. And now, whether we like him or not, he cares but little; all the means which can be used to exterminate him will not avail. He came against his will, but he now likes this free country, and he is prepared to stay.

PLATE LIV.

Fig. 3. MOLOTHRUS ATER—Cowbird.

Cowbirds arrive about the middle of March and remain until November, with the exception of a few weeks in July and August, during which time they disappear. Dr. Wheaton has seen them at this season in the mountains of Pennsylvania, but "where they go, and what they do, has never been certainly discovered."

At the present time the Cowbird is a very common species, but as late as 1853 it was by no means numerous, and Dr. Kirtland admitted it to the fauna of the state on "rather doubtful authority."

EGGS:

The eggs of the Cowbird measure in long-diameter from .78 to .90, and in short-diameter from .60 to .66. Ten eggs, selected from about one hundred specimens, measure as follows: .78 x .65, .81 x .66, .82 x .65, .83 x .63, .86 x .66, .87 x .64, .87 x .66, .86 x .61, .90 x .64, .90 x .65. The ground-color of the shell is white, but sometimes it is obscured by the abundance of the markings. These generally consist of spots and speckles, distributed pretty evenly over the entire shell, together with blotches which are the most numerous about the base, and commonly confluent with the spots and speckles. The speckles predominate on most eggs. Occasionally, an egg is marked almost entirely with irregular spots of about the area of a pin's head. The color of the markings is very uniform, being brown inclined to yellow; sometimes it is pretty deep in tint, but usually it is rather faded in appearance. The deep shell-marks, which are frequently quite numerous, have a faded, bluish cast.

DIFFERENTIAL POINTS:

When the egg of the Cowbird resembles so closely the eggs in the nest where it has been laid, as to make identification uncertain, it is a good plan to blow all the eggs and notice if the suspected egg has a yolk of different tint from the balance of the set. If it has, it is strong evidence that it was laid by some intruder, for almost invariably eggs of the same set have the same tinted yolks.

REMARKS:

The Cowbird does not build a nest, preferring to deposit her eggs in the nests of other birds. The fact that the maternal cares are by this species imposed upon others, and that the mother herself hastens to the mountains during the most heated time of the summer, suggests the probability of the Cowbird belonging to some ultra fashionable circle of society. However this may be, it is certain that the species has attained an unenviable notoriety among its associates as well as among ornithologists.

Cowbirds during their residence in the state may frequently be seen in flocks of a dozen to fifty or more, following the cows or cattle as they graze. They sometimes alight upon the animals, and sit contentedly for considerable time if undisturbed. Their fondness for cows and cattle is one of the many

curious traits of this most exceptional bird. They never pair, and, having no family cares, are nomadic. When the female feels the necessity of laying an egg, she leaves the flock and hurries to some neighboring wood where a nest is likely to be found, or seeks one in the pasture where she happens to be. If hard-pressed, and no unwatched nest can be discovered, she drops her egg upon the ground, but probably with many misgivings. Most of the small birds are annoyed by the Cowbird, and but few nests, from the size of the Wood Thrush's down to that of the little Blue-gray Gnatcatcher's, are exempt from her assault. I have repeatedly found her eggs in the nests of Sparrows and Warblers, which build upon the ground, as well as in the nests of the small birds which build in bushes and trees. As a rule, the nest of a bird smaller than herself is selected for her eggs, but there are occasional exceptions. I once found her egg in a Meadow-lark's nest, and once in a Robin's. The nests of the Woodpeckers and of other birds which build in holes in trees, and the nests of birds which build in crevices about masonry or in holes in banks, are seldom, if ever, invaded; nor does the Cowbird often lay in the nest of the Wren or Oriole. Ordinarily, but a single egg is placed in a nest, but sometimes as many as four or five are left to the care of one small bird. The Acadian Flycatcher is frequently the recipient of two, and once I found three with three of the Flycatcher's own eggs.

The Cowbird causes much anxiety to the birds of the wood and field, and is as much to be dreaded as the Blue Jay or the snake. The busy, peering intruder is a familiar object in the woods in May and June. She hastens from branch to branch, scanning with her trained eyes every crotch and nook likely to contain a nest, and, indeed, but few escape her notice, although many are too well guarded for her purposes. She is a coward, and never takes forcible possession of a nest, but, finding one unprotected, she occupies it for a minute or two and then sneaks away, apparently satisfied that her young one will be well able to hold its own in company with the strangers. Nor is she mistaken, for generally the young Cowbird is the strongest and largest of the brood. It not only has an advantage as to size, but frequently has the additional advantage of being hatched a day or two before its mates. It often happens that the young Cowbird soon becomes so strong and large that it gets all the food and occupies all the nest, the real heirs being slowly starved and eventually crowded from their home. Under these exasperating circumstances the foolish mother still continues to feed and care for the Cowbird as if it were some giant of her own species of which she is especially proud. I have often seen a Chipping Sparrow, a Summer Warbler, or some other small bird, devoting every energy to the care of a large, clumsy Cowbird, which was well able to fly, but still too inexperienced to procure food for itself.

After the Cowbird is hatched, all possible attention is given it, although much uneasiness and distress is sometimes produced when the foreign egg is first discovered. The Summer Warbler frequently builds a second nest over the first, thus burying the obnoxious egg. See page 72. The Chipping Sparrow and Wood Pewee occasionally abandon their nests rather than incubate a Cowbird's egg, and there is scarcely a doubt but that all birds recognize the despised egg at once, and probably they have some idea of the result if it is hatched. This being the fact, it is to me surprising that some way does not suggest itself of getting rid of the detested egg. The cleanly habits of the birds will not permit of its being broken in the nest, but most birds are certainly strong enough to roll it out. While all birds dislike the egg, they seem to have a certain amount of respect for it; much more than we would suppose under the circumstances. But in judging of such matters, we should take into consideration that our point of departure and that of a bird are probably some distance apart.

PLATE LIV.

FIG. 4. *CHORDEILES POPETUE*—Night Hawk.

The Night Hawk is one of our most familiar birds. It is distributed quite evenly throughout the state, and is found in town as well as in the country. It arrives from the south about the middle of April, and remains until November. The young are hatched the last of May or the first of June.

LOCALITY:

In town the Night Hawk usually selects a flat roof of a building for a place for depositing its eggs, but in the country a rocky ledge or a plat of dry barren land in an open field is chosen for the site. I have found its eggs on the dry sheeting of the state dam, across the Scioto river, just below Circleville, and also upon its stone abutments. Wherever the "Hawks" abound the eggs may be looked for in the most exposed and barren places—places which receive the sun's rays during the greater part of the day. No materials are carried for the nest; even the natural surroundings of the spot selected are seldom, if ever, disturbed; the eggs being laid in a slight depression, or among pebbles, which prevent their rolling.

EGGS:

A full set of eggs consists of but two; those of the same set are quite like each other; but eggs from different birds vary much in size, shape, ground-color, and markings. Dr. Brewer, in "North American Birds," describes the eggs as follows:

"The eggs of this bird are always two in number, elliptical in shape, and equally obtuse at either end. They exhibit marked variations in size, in ground-color, and in the shades and number of their markings. In certain characteristics and in their general effect they are alike, and all resemble oblong, oval dark-colored pebble-stones. Their safety in exposed places is increased by this resemblance to the stones among which they lie. They vary in length from 1.30 to 1.13 inches, and in breadth from .84 to .94 of an inch. Their ground is of various shades of stone-color; in some of a dirty white, in others with a tinge of yellow or blue, and in yet others a clay-color. The markings are more or less diffused over the entire egg, and differ more or less with each specimen; the prevailing colors being varying shades of slate or yellowish-brown."

The three eggs illustrated, PLATE LIV, fig. 4, show the extreme variations in size, shape, and markings in those eggs with which I have met, but I have not found many sets. The eggs in my possession, taken in Ohio, measure as follows: 1.08 x .77, 1.10 x .76, 1.13 x .78, 1.13 x .80, 1.15 x .80, 1.17 x .82, 1.17 x .86.

DIFFERENTIAL POINTS:

The eggs of the Night Hawk are of such size, shape, color, and marking, that with a little attention they can be readily recognized.

REMARKS:

The name "Night Hawk" is very improperly applied to the species under consideration. Undoubtedly it is most frequently seen between sundown and dark, and between dawn and sunrise, owing to the fact that the insects upon which it feeds are at these times upon the wing. But at all hours of the day this "Hawk" flies about, and not infrequently is heard or seen circling high in the air under the most glaring noonday sun. The cry of this bird is peculiar. It is sharp and penetrating, and repeated at short intervals, as the bird wheels and circles about. Its timbre is such that it is impossible to estimate its distance or direction. Now it seems to come from in front of you, now near by, now immediately it is behind and far off, now overhead, but low, now again it can not be located; and when, eventually, the bird is discovered by the eye, it is found that all the while it has been describing circles high in the air above you, so high that the bird is with difficulty seen.

Many people confound the Night Hawk with the Whip-poor-will, a clumsy mistake, as the points of resemblance are hard to find, either in the appearance or habits of the two species. About dark the Night Hawk goes to roost, and is in no sense a night bird, although crepuscular, as stated. The Night Hawk is much attached to her eggs and young, and gives them the most watchful attention. She sits closely upon her eggs, permitting herself to be almost grasped with the hand before she will fly. Driven from her home, she does not fly away and suffer it to be despoiled, with apparent indifference, as some birds do, but she at once appears wounded, and fluttering at your feet, endeavors to draw you by strategy from the spot. So well does she imitate a cripple that one is pretty apt to give chase before the deception is apparent. The eggs are difficult to find even when at your feet, owing to their protective colors; and if you give chase to the bird, for even a few steps, the probabilities are that the eggs are lost, unless, indeed, you take the trouble to watch the bird return to her treasure or again flush her.

In August and September the Night Hawk is generally seen in flocks, and in the evening is most numerous about ponds and streams of water, on account of the abundance of insects at such places. Once in September, just after sunset, I saw thousands of Night Hawks whirling and darting about over the low land along the Scioto river near Chillicothe. This immense flock was probably made up of migrating birds that had settled upon this spot for rest and food.

On the wing the Night Hawk is very active, but owing to the innumerable angles and curves inharmoniously joined, its flight is far from graceful, yet it is light and easy. It alights frequently upon a tree, but oftener upon a log or the ground.

PLATE LIV.

Fig. 5. COLAPTES AURATUS—Yellow-shafted Flicker.

The Yellow-shafted Flicker, Yellow Hammer, Flickup, Golden-winged Woodpecker, or Highholer, as this bird is variously called, remains in Ohio throughout the year. It is at all times common, but is the most plentiful during the summer and fall. The nest is constructed in May or the first of June, and two broods are sometimes reared by a single pair during a season.

LOCALITY:

The Yellow Hammer frequents partially cleared land and fields, with here and there a decayed tree or tree-trunk still standing, in preference to heavily wooded districts. Although shy, it is not afraid to venture into the orchard and lawn, and even at times into town. When the nesting season arrives, a dead limb or trunk is chosen for the site from among the trees in its accustomed haunts. Occasionally the nest is excavated in a gate-post, a telegraph pole, or some such place on the most frequented country thoroughfares.

POSITION:

The excavation for the home is usually made in a perpendicular trunk or limb, but sometimes it is in a trunk or limb considerably inclined, and even occasionally in a horizontal limb. Its distance from the ground varies from four or five feet to the height of the tallest limbs large enough for the nest. The majority of nests are within fifteen feet of the ground. When the trunk or limb inclines, the door-way is situated on the underside; thus water is prevented from running into the nest. Not infrequently the door-way is placed immediately under a projecting knot or limb.

MATERIALS:

No materials are carried for the nest; the only requisite being a suitable piece of wood large enough for the cavity, soft enough for the birds to cut with their bills, and properly situated. Dead and semi-decayed wood is selected, on account of the ease with which it can be worked. The entrance to the nest is circular, and about three and one-eighth inches in diameter. A few inches from the surface of the trunk or limb the cavity turns downward, just as illustrated on PLATE XLIV, in the nest of the Red-headed Woodpecker. The depth of the cavity varies much; usually it is about twelve inches, but it may be considerably less, or even twice as much. The diameter of the cavity is also subject to great variation in different nests; commonly it is in its smallest diameter about twice the size of the door-way. A quantity of chips are always left in the bottom of the cavity, and these form a soft and even floor for the eggs and young. Very rarely a natural cavity is used for the nest.

EGGS:

The complement of eggs varies from five to nine, six or seven being the ordinary numbers; very

exceptional numbers have several times been taken. In one instance fourteen were found, and in another twelve young birds, but it is an open question whether these large sets are not the joint labor of two or more birds. The eggs are pure white and highly polished. They measure in long-diameter from .93 to 1.19, and in short-diameter from .79 to .90. A common size is about .81 x 1.02. Two sets, of seven each, measure as follows: .86 x 1.17, .85 x 1.16, .85 x 1.13, .85 x 1.01, .85 x 1.14, .84 x 1.15, .80 x 1.15, and .82 x .99, .80 x 1.02, .79 x .90, .82 x .99, .81 x 1.03, .83 x 1.04, .79 x 1.01. Another set of five measure, respectively, .85 x 1.09, .80 x 1.02, .86 x 1.06, .83 x 1.02, .88 x 1.02.

DIFFERENTIAL POINTS:

See Table.

REMARKS:

The three eggs illustrated, fig. 5, PLATE LIV, show the extremes and average in size and shape of the eggs which I have collected of this species. The nest has not been figured, as it is but the counterpart of that of the Red-headed Woodpecker, so far as method of construction is concerned.

The Yellow Hammer alights upon the ground much oftener than any of our Woodpeckers, and procures much of its food from fallen logs, and from the ground in open fields. It is common to see it scratching and digging in a clover-field, or stubble, for ants and other insects. There is a great temptation to the gunner to shoot them when they are flushed from the open field, and many are thus wantonly killed. "Flicker pie" is a favorite dish with the colored people of this section, and consequently the name of "Nigger Quail" has been added to the bird's many aliases.

During the month of April the Yellow-Hammer is very conspicuous and noisy. It is at this season that the birds mate, and each male strives to be seen and heard by every thing in the vicinity. A small grove is a favorite place for these birds to congregate, and from here, on all pleasant spring days, their course, loud voices jar upon the ear. But as soon as mating occurs, they become shy and cautious in selecting a site for their nest, and can seldom be surprised at work excavating the cavity. All Woodpeckers are alike in this respect, and the elevation from which they observe the surrounding country gives them ample opportunity to hide, or leave the premises before they can themselves be seen.

When found upon her eggs, the Yellow Hammer hastens to escape, and once out of the hole, flies away to a safe distance. Occasionally a bird will show fight, but this is exceptional.

The Yellow Hammer as well as the Red-head has a habit of boring holes about the cornice of country school-houses and barns. There is scarcely a school-house of any age in Pickaway county that has not a number of holes in its loft. Until recently, I have been at a loss to know the purpose of these holes. Last winter I found several Woodpeckers wintering in a school-house attic, and I am of the opinion that the holes are made for the purpose of obtaining winter quarters. Perhaps many of them were originally made in search of food, the hollow sounding boards suggesting a cavity behind, or perhaps they were cut from pure mischievousness; but whatever the original motive, it is a fact that some of these birds take shelter during the severe weather of winter in the warm garrets of country school-houses.

Near Circleville, a pair of Yellow Hammers have for five years occupied a natural cavity in an oak-tree for their summer home, and in the fall and winter the same cavity is inhabited by gray squirrels. Just what agreement exists between the occupants can only be imagined, but I suspect the birds drive the squirrels out each spring.

PLATE LIV.

Fig. 6. CAPRIMULGUS VOCIFERUS—Whip-poor-will.

The Whip-poor-will arrives in Central Ohio about the first of April, and remains until October. In the level, cultivated districts it is an uncommon visitant, but in the hilly districts it is plentiful. The eggs are laid in May; and possibly a second set is sometimes laid in July.

LOCALITY:

During the day-time the Whip-poor-will frequents the densest woods, preferably rocky ravines, where the sun rarely penetrates on account of the thick foliage of the trees and underbrush, and in such a locality it lays its eggs, placing them upon a shelving rock, or upon the ground among fallen leaves. Occasionally they are deposited beside a fallen log on the decayed wood-chips, which have been scattered by squirrels and Grouse, and occasionally upon a broad leaf, which is spread flat upon the ground. No materials are carried for the nest, nor are the natural surroundings usually disturbed. I have several times found these birds breeding in the level woods in Pickaway county, and always in the gloomiest places.

EGGS:

Two eggs constitute a set. They are elliptical, moderately polished, and have a white ground-color. The markings consist of large and small spots, and some speckles, of light yellowish-brown, distributed rather abundantly and evenly over the entire shell. Occasionally a blotch or two may be observed. The deep shell-marks are about as numerous as the surface marks, and are of a lavender tint. The eggs measure in long-diameter from 1.08 to 1.20, and in short-diameter from .80 to .90. A common size is about 1.12 x .88.

DIFFERENTIAL POINTS:

When the position in which the eggs are laid, together with their number, size, shape, and markings is considered, identification is easy and certain; and even with specimens, the data in regard to which are entirely unknown, identification is possible if attention be given to size, shape, and markings, as described above, as there are no other eggs which resemble the Whip-poor-will's closely enough in all these respects to be mistaken for them.

REMARKS:

The eggs illustrated, Fig. 6, PLATE LIV, were found May 24th, 1876. The two at the left are of the same set. When discovered they were resting upon a bed of several thicknesses of oak leaves, in a dark and damp part of a large wood. I had almost stepped upon the mother bird, and was just in the act of bringing my left foot over the nest, when she fluttered off and exposed the eggs to view. While

I stood watching, she performed all manner of antics in her endeavor to persuade me that she was but a poor cripple at best. She would limp over the ground, with both wings hanging as if broken, and then for a time lie panting as if dying. Finally I gave chase, having first taken the eggs, and was led some distance into the woods, when, suddenly, my cripple disappeared in the direction of her nest. I at once returned, but she had discovered the robbery and abandoned the cheat. The male did not appear at any time.

I have frequently flushed Whip-poor-wills in September and October while Grouse hunting, and several times have encountered quite large flocks, but usually only a single bird is seen at a time. In May and June they are much less numerous than in the fall. During the day they sit about on old logs, on the lower branches of trees, and upon the ground, in the most retired places, apparently sleeping. When flushed they utter no note, but fly off like a bat for a short distance, and alight. If caution is used, one can approach very close at such a time before the bird will again fly. They seldom cry out during the day, unless it is exceptionally dark; but as soon as night comes on they repeat at short intervals their notes, which have by some lively imagination been likened to the words whip-poor-will. The sounds, however, bear no closer resemblance to these words than to many others.

The food of the species consists chiefly of insects, which are captured principally during twilight and dawn. During their search for food the birds leave the woods and fly about over the fields and marshes, and other places where insects abound. I have several times seen old birds feeding their young along the roadside, the young being perched upon the fence or sitting in the road. Their flight is noiseless and uncertain, and even more zigzag than that of the Night Hawk.

It has been recorded that the Whip-poor-will has the ability to carry off her eggs and young from the nest to a place of safety, when she believes them to have been discovered and are in danger. As improbable as this seems at first thought, I do not doubt it. The evidence is such as can hardly be gainsayed. It is related by Mr. Audubon, that the Chuck-will's widow carries its eggs in its mouth, and it is probable that the Whip-poor-will does the same. But whatever the method of transfer, it is quite certain that the eggs and young are at times removed as stated above.

PLATE LIV.

Fig. 7. ARDEA HERODIAS—Great Blue Heron.

This magnificent bird is still a resident of the state, and is not infrequently seen, from March until November, along streams and about ponds and lakes. It sometimes arrives very early in the year, even before the frost is out of the ground, and stragglers occasionally remain until the winter's cold freezes over their accustomed hunting grounds.

The nest is usually ready for the eggs by the middle of May. But one brood is reared by each pair during the year.

LOCALITY:

The nest is built in a tall tree, either in bottom-land along a pond or stream, or on a lake bank near a marsh. All the nests which I have seen have been in sycamores, along rivers and creeks. Near the mouth of Big Walnut, in Franklin county, there is a heronry of seven or eight nests, several of which are occupied every year. In the West the Heron frequently builds on rocky ledges, and also in small trees and bushes.

POSITION:

The nest is placed near the top of the tallest trees, either in a perpendicular fork, or on a horizontal limb near the main trunk, or at a point of bifurcation. It is generally very inaccessible; and any attempt to procure the eggs is attended with much labor and danger.

MATERIALS:

In general appearance the nest resembles at a distance that of the Red-tailed Hawk, but it is not so compact and well made. It is composed almost entirely of sticks, loosely woven into a large platform. The nest of the Green Heron, illustrated on PLATE XXVII, is a pretty good miniature representative of that of the Great Blue Heron. The plan and material of the two are very similar. Considering the loose construction of the nest, it is remarkable how very strong and lasting it is. The elements make but little impression upon it; and until the sticks of which it is composed have decayed, it defies the winds and storms. On account of this stability the Heron does not build a new nest each season, but occupies for a number of years the same structure, perhaps adding a few repairs, as occasion demands. When the old nest begins to crumble, another is frequently built immediately upon it, either by the original builders, or possibly some of their descendants, and on account of this habit, nests are sometimes found which measure more than two feet in thickness.

EGGS:

The eggs of the Great Blue Heron measure from 2.50 to 2.75 in long diameter, and from 1.75 to

1.90 in short-diameter. The shell is a uniform bluish-green, varying slightly in tint in different eggs. A full set consists generally of three eggs, but occasionally four are laid. The three eggs illustrated, were taken from a nest in the Spring of 1883. They measure respectively 2.53 x 1.88, 2.56 x 1.76, and 2.53 x 1.76.

DIFFERENTIAL POINTS:

The size, together with the color of the shell, will suffice to always identify these eggs.

REMARKS:

Fig. 7, PLATE LIV, represents a set of eggs of the Great Blue Heron, which shows the variations in size and color remarkably well. As a rule, sets are much more uniform in color than this one.

The Great Blue Heron is a bird that commands attention and excites admiration, whether it be seen alive or dead. Its graceful form, beautiful plumage, and natural surroundings, all combine to make a harmony difficult to surpass. So graceful is the family of which it is our best representative, that the nation which leads the world in the art of decoration has for centuries celebrated by pictorial song its elegance and dignity. Besides, it is a bird of great judgment and much cunning, and is an expert in avoiding danger. It is only by accident, or by patient waiting, that it can be shot, as it usually flies as soon as it sees a gunner, and is very cautious about alighting at its feeding grounds. Its food consists chiefly of fish, which it catches by wading out in the shallows of streams and along the shores of ponds. It will stand for hours in the water up to its knees, with its head drawn down upon its shoulders, watching the minnows and small fry; and every little while, swift as an arrow, it shoots out its long neck and dives its head under the water after an unfortunate fish, which it seizes in its long bill and immediately swallows.

The flight of the Great Blue Heron is slow, but well sustained. Its wings are very large for the weight of its body, and consequently but comparatively few strokes are made in a minute. When it takes to wing it usually flies a long distance before alighting, sometimes as far as several miles.

When wounded it will fight either man or dog, and may prove a dangerous antagonist. A blow from its powerful beak makes a frightful wound, and since having been attacked by a bird with a broken wing, I can readily understand how very disastrous an encounter might prove. All our Herons are vicious; and, when being handled, the greatest care should be taken that the eyes do not come within reach of the beak. For an eye is a favorite target, and when one is least expecting it, may be struck to blindness. A White Egret, with a broken wing, was a few years since turned loose in a friend's lawn, and after its wing healed it became quite tame, but always showed a bad temper, and finally became so vicious it was killed. It would attack strangers, especially children, and drive them from the lawn. The Great Blue Heron has a similar disposition, and is a very unsafe bird to handle or be about.



PL. IV.
CHONDESTES GRAMMICA.
LARK FINCH.

PLATE LV.

CHONDESTES GRAMMICA—Lark Finch.

The Lark Finch was first noted as an Ohio bird by Dr. J. M. Wheaton, in 1861. At the present time it is a rather common resident in Central Ohio from the middle of April until August or September. In Southern Ohio it is less common, and in the northern part of the State it is unknown.

The nest is built early in May, and by the first week in June, or earlier, the young are generally hatched. It is probable that a second sitting of eggs is sometimes incubated in July.

LOCALITY:

The nest is usually placed in a field of clover or grass adjoining a wood, preferably a field of poorly cultivated, undulating land, along a road or small stream.

POSITION:

It is said that the nest is sometimes placed in a bush or tree; but in Ohio such a position must be very rare. Every nest which I have found or heard of has been situated in a slight depression in the ground, either natural, or fashioned by the bird. The little cup-shaped cavities which occur so abundantly beside the footstalks of red clover, furnish most desirable sites.

MATERIALS:

The materials of construction vary somewhat in different nests, according to the fancy of different birds for this or that material, and also according to its abundance. A nest before me, may be taken as a good example of the architecture of the Lark Finch. It is composed and measures as follows: The coarser and external part of the nest consists of dried, loose, and semi-decayed stems of clover, and small weeds, interwoven into a compact cup—thickest about the rim, and thinnest at the center of the bottom. Within this cup is a thin layer of light-colored, fine, round fibres, and a few thin strips of plant-bark, and within this is the lining proper, which consists of a pretty thick layer of black and white hairs from the tail of the horse. At the center of the bottom of the nest the middle layer is wanting, and as the external structure is at this point almost absent also, the lining rests nearly upon the ground.

The external diameter is about four and one-eighth inches; external depth, one and five-eighths. The internal diameter is two and five-eighths; internal depth, one and five-eighths inches.

Another nest is quite similar to the above, except that it is lined with round and split grasses. Another has many dark-colored rootlets in its exterior. As a whole, the nest is generally very compact for its situation, and in dimensions does not vary much from the measurements given.

EGGS:

The complement of eggs is either three or four, commonly the latter number. They measure from

.59 x .76 to .67 x .89. Five eggs, selected on account of their different sizes, measure as follows: .67 x .89, .68 x .87, .62 x .80, .63 x .85, .59 x .76. The ground-color of the shell is white, with just the faintest creamy tint, and is marked with spots, dots, speckles, and lines, which are sometimes circular, sometimes wavy, and sometimes zigzag. The color of the marks is very dark brown, so dark as to be almost black when heavily laid on. When beneath the surface they appear lavender. One egg in my collection is marked at the base with a wreath, about one-eighth of an inch wide, of fine, wavy, circular lines, superimposed upon similar but coarser deep shell-marks. Another is similarly marked, but with much broader and bolder lines, and also a few spots near its point. Another is marked at its base with large confluent spots, and a few short, wavy lines. Another is sparingly marked from point to base with curved lines, confluent and isolated spots and minute speckles, about half of which marks are beneath the surface. Another has the appearance of having a soiled-white ground, on account of innumerable deep shell-speckles, and faint, fine, surface marks, and besides these, are a few bold marks about the base. Another is immaculate, except two fine, short, surface lines, and some very faint, deep shell-marks at its base. Another is marked solely with spots and speckles, chiefly about the base.

From the above descriptions it will be seen that there is considerable latitude in the method of marking; the most constant feature being the wreath of lines about the base.

DIFFERENTIAL POINTS:

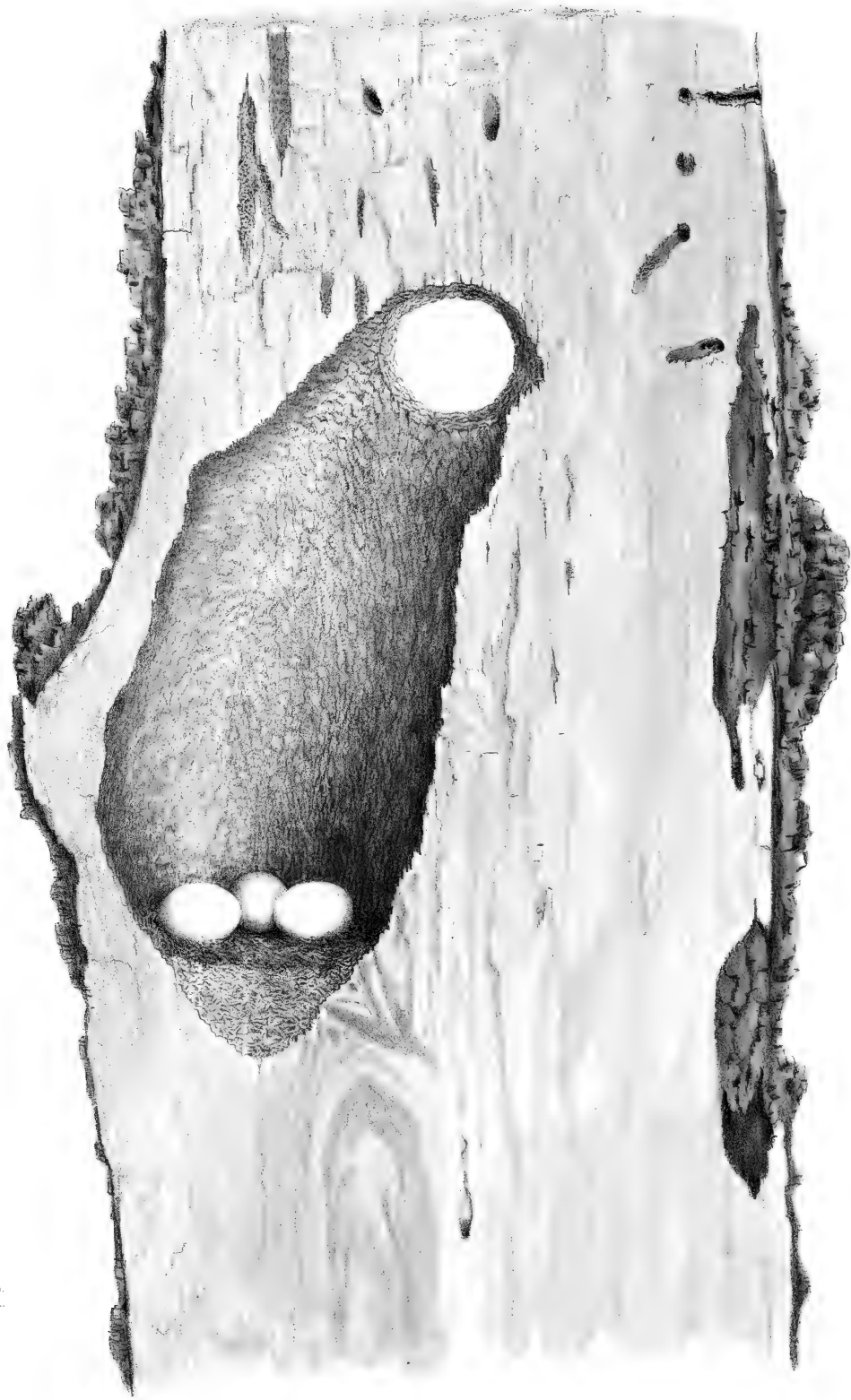
The nest and eggs together can easily be identified, from the position, materials, and size of the nest and the size and markings of the eggs; but it is much more difficult to identify each separately. In fact the nest alone can not be recognized with certainty from that of the Bay-winged Bunting, and of several other Sparrows which build on the ground, although the measurements and materials of the nest under consideration are on the average somewhat different, as will be seen by reference to the text. The eggs have a resemblance to those of the Baltimore Oriole at times, and with exceptional eggs of each, identification may be impossible. Ordinarily, however, the size and markings will identify them.

REMARKS:

The illustration, PLATE LV, represents a nest and eggs of the Lark Finch, found May 20th, 1884. It was situated on a hillside in a clover field, in a slight natural concavity, near the foot-stalks of red clover. While driving along a country road on the day mentioned above, I noticed a pair of Lark Finches on the fence, and after I had passed by they flew about a hundred yards and dropped into a clover field. I at once got out and went to the spot, but the birds were not there. I took a few steps to the right, and they then both arose some distance ahead. Instead of flying away, the female hovered over me, and also attempted to draw me from the spot by feigning lameness. After a few minutes search I discovered her nest. Near this same place, on June the first, following, I found another nest containing two young birds. When frightened from her nest, the female Lark Finch generally runs a few yards before taking wing, after the manner of the Bobolink. This trick makes it hard to determine just where the treasure is.

Different from other Sparrows, the Lark Finch runs instead of hops, and it is not uncommon to see a number running along the road like Quail. Early in May and in late summer, they are in flocks, and frequent fields and roadsides.

The three eggs figured out of the nest represent the common sizes, shapes, and markings.



PL. LV.
PICUS PUBESCENS.
DOWNY WOODPECKER.

PLATE LVI.

PICUS PUBESCENS—Downy Woodpecker.

The Downy Woodpecker is a common resident, and is our smallest representative of its family. It is a very conspicuous and sociable bird, and is generally known by the name "Sapsucker."

The nest is constructed early in May, and the young are hatched about the 1st of June. A second set of eggs is frequently laid in July.

LOCALITY:

The home of the Sapsucker is always placed in dead wood, either a limb or trunk of a tree, a fence-post, a stump, or some such place. It is not uncommon to find it nesting in a fence-post along a country road, in an orchard-tree about a farm-house, or even in a shade tree in a large city. But of all places the bank of a stream is preferred. Here the willow stumps offer the most desirable sites, and are eagerly sought for. Along the Scioto river a dozen or more nests may be found to every mile of the shore, along that part of the stream where willows abound. In the upland country, other trees about the outskirts of timber-land, or even deep in the densest woods are occupied.

POSITION:

The nest is almost invariably in a perpendicular or slightly inclined piece of timber, at a distance from the ground, varying in different instances from two to forty feet. The usual height is about ten feet.

MATERIALS:

As with other Woodpeckers the nest consists simply of an excavation in dead and generally semi-decayed wood. The opening is round, or almost round, and measures about one and three-sixteenths inches in diameter. It is projected nearly or quite at right angles to the surface of the timber, and enters a variable distance, according to the diameter of the wood and the fancy of the builders. Generally after a hole is cut about an inch and a half deep, during which distance there is but little change made in its diameter, a turn is made downward, and the cavity enlarged as it progresses, until it becomes about seven inches deep and three and one-fourth wide. The excavation is seldom round, being half an inch or more in one diameter than another, and sometimes it is a foot or more in depth. Instead of extending parallel with the side of the timber in which it is cut, it almost invariably makes an angle with it, as shown in the illustration.

The labor of making a nest varies from two to five days, according to circumstances, and is shared by male and female alike. The chips are permitted to fall to the ground, and may be found scattered beneath the site, if it is high up, or piled up beneath, if it is low down. At the bottom of the cavity a layer about three-quarters of an inch in depth, of fine, soft chips, is left for a bed for the eggs and young.

EGGS:

The complement of eggs varies from three to five. They are nearly elliptical in shape, pure white, and quite glossy. They measure from .57 to .67 in short-diameter, and from .78 to .88 in long-diameter. A set of three measures .58 x .85, .59 x .78, and .58 x .80. Another set of five measures .59 x .80, .61 x .86, .61 x .85, .63 x .84, and .63 x .86.

DIFFERENTIAL POINTS:

See Table.

REMARKS:

PLATE LVI represents a sectional view of a nest and eggs of the Downy Woodpecker, taken June 1st, 1884. It was in a willow stump about five feet from the ground.

It has been stated that the interior of the cavity is finished smoothly, and that the chips are carried away from under the site. My observations do not confirm either of these statements. The walls of the cavity are moderately smooth, but no more so than would be expected from the size of the chips which the birds are able to cut away. Nor can I confirm the statement that the eggs rest upon the floor of the nest, which is made very even for their reception. On the other hand, I have invariably found quite a layer of chips protecting them from the hard wood beneath.

The Sapsucker is a nervous, active bird, and is constantly occupied. During the time which the female is sitting, the male often excavates one or more small cavities in some neighboring tree, with no other object apparently than to be at work. He is very attentive to his partner the while, and carries her choice morsels of food. When the young are hatched, he is equally solicitous with the mother, and the pair seldom go far from home.

When their premises are invaded they become very angry and excited, and scold in their rude way. The young when two weeks old can fly, but they stay around the tree in which they were hatched for some time after, going in and out of their houses at will. At this age they are very pretty, fat, and saucy. Their plumage is lemon-yellow where their parent's is white; this makes them even handsomer than when older, notwithstanding they have not the scarlet patch on their heads, so characteristic of all Woodpeckers. When Circe struck Pegasus, the hunter god of Latium, on the head with her wand, she changed him unto a bird. The wound bled, and this blood stain still marks the spot of the blow on the heads of all his adult descendants.

The food of the Sapsucker consists chiefly of insects and their larvæ, and hence these birds are of inestimable value to the fruit-growers and our forests. On this account, if for no other, they deserve every protection. The immense swarm of harmful insects which this species alone destroys in a single year, is beyond our comprehension, so vast is the number.



Pl. LVII.
DENDRŪCA PENNSYLVANICA.
CHESTNUT-SIDED WARBLER.

PLATE LVII.

DENDRCEGA PENNSYLVANICA—Chestnut-sided Warbler.

The Chestnut-sided Warbler arrives in the vicinity of Cleveland about the first of May, and remains until the last of September, or the first of October. During its migrations it is more plentiful than in the summer, being quite common in the fall in some localities. It builds its nest about the first of June, and rears but a single brood during the season.

LOCALITY:

It frequents the saplings and underbrush of retired woods, and the bushes and weeds among the tall timber along the banks of streams. It prefers damp soil, but is often found in dry upland woods. As a site for a nest it generally selects a bush or low sapling in a thicket, about the border of the timberland where it makes its home; but occasionally a similar position is chosen in the interior of the woods. The hazel bushes which abound in many parts of the State furnish favorite situations for the nest.

POSITION:

The site is commonly a fork, formed by two or more slender twigs, either twigs from the same stem or branches which accidentally cross each other. In such a crotch, about three or four feet from the ground, and well concealed by thickly clustered leaves, the materials are carried which are dexterously worked into one of the most beautiful and substantial specimens of woodland architecture.

MATERIALS:

The nest measures in external diameter between two and one-half and three and one-half inches, and in external depth, between two and three-eighths and three and five-eighths inches. The diameter of its cavity varies but little from one and seven-eighths inches, but its depth ranges between one and one-fourth and two inches. A nest before me measures two and three-fourth inches in external diameter, and is the same in external depth; its cavity is one and seven-eighths inches in diameter, by one and three-eighths in depth. It is built in a fork of a hazel bush, and is also fastened to a blackberry stem. About two-thirds of the nest is on one side of the crotch, so that it may be said to be built against it rather than saddled in it. The coarser parts consist of several wide strips of the inner bark of some forest tree, and a number of blades of grass. They are arranged circularly, and are secured to the branches in some places by being wrapped several times, and in others they are bound down with web or silken threads from cocoons. The bark and grass form a loose foundation, upon and within which is placed the superstructure of gray fibres and light-brownish, wiry weed-stems, and round tendrils from some climber. There is great uniformity in the size of these fibres, many of which have been split to reduce their thickness. Within the superstructure is a thick, red-brown lining of fine wiry threads of grape-vine bark and round grass. Another nest is placed against the crotch of a hazel bush, and is further supported by

a hazel stem running horizontally. Its cavity measures one and seven-eighths by two inches. It differs in construction from the one above described, in that it is fastened at the rim to the horizontal twig and has a few horse-hairs in the lining.

All the nests of this species which I have seen have been remarkably uniform in size and materials of construction, but from descriptions of nests found at various times in different parts of the United States, there seems occasionally to be considerable variation. One nest is stated to have been four inches in outside diameter. Another is said to have been lined with woolly vegetable-down and horse-hair; and another has been found which was nearly pensile, its lower two-thirds being entirely free from any supporting twig. These and other variations are, however, no greater than is to be expected, as such variations from the common type occur to a greater or less extent in the nests of every species.

EGGS:

The number of eggs in a set is either four or five, usually four. They measure between .57 and .69 in long-diameter, and between .46 and .51 in short-diameter. A common size is about .48 x .64. The ground-color of the shell varies from nearly pure white to a slight creamy tint, and occasionally even to a faintly greenish or bluish tint. The following description of six eggs will comprehend the usual variations. No. 1. Size, .49 x .60. Ground-color white. Markings, confined to a wreath about the base, consist of blotches, spots, and speckles, slightly confluent in places, of several shades of Vandyke-brown. Deep shell-marks numerous, lavender. No. 2. Size, .46 x .58. Ground-color faintly buff-tinted. Markings confined to a broad wreath about the base, of confluent deep shell-marks and surface blotches, spots, and speckles. The deep shell-marks are chiefly blotches, and are decidedly lavender color. The surface marks are brown and superimposed upon these. No. 3. Size, .48 x .66. Ground-color slightly greenish tinted. Markings confined to ring about the base, composed of numerous but well defined spots and speckles of dark brown. Deep shell-marks and surface marks are about equal in number, the former are lavender. No. 4. Size, .48 x .65. Ground-color soiled white. Marking distributed over entire shell, but most numerous at the base. These are blotches, spots, and speckles of various shades of light brown, having well defined outlines, which at the base occasionally overlap or fuse into each other. The speckles are plentiful over the entire shell, and are placed on the blotches and spots as well as on the white ground. The lavender, deep shell-marks are few and small. No. 5. Size, .49 x .63. Ground-color slightly greenish tinted. Markings similar to No. 4, except that the speckles are fewer and the browns are darker. No. 6, similar to No. 2 in size and ground-color. Markings few and confined to base. Some of the larger blotches are nearly black in the center, with faded edges. Deep shell-marks well defined, lavender.

DIFFERENTIAL POINTS:

See Table.

REMARKS:

The nests and eggs illustrated, were found in June, 1883, in a small upland woods. The nest was in a hazel fork, in a dense thicket of briars and other bushes, within a few yards of a country road. It is a good example of the architecture of this species. The eggs, three in number, show the common shapes and markings, but they are a little less than the average in long-diameter.

It is impossible to say how many nests have been taken in Ohio. In 1852, Mr. Reed stated it was rather common in Northern Ohio, and he found and described a nest which, in locality and position, corresponds exactly with those I have discovered. Careful observation will probably place this Warbler on the list of summer residents in the southern as well as in the northern part of the State. In Central Ohio I have several times found it nesting, and in the extreme southern limits I have seen it in July.



Pl. LVII.
HYLOCICHLA FUSCESCENS.
WILSON'S THRUSH.

PLATE LVIII.

HYLOCICHLA FUSCESCENS—Wilson's Thrush.

The Wilson's Thrush is occasionally found breeding in the Southern States, but its summer residence is chiefly the Eastern United States north of the 42° of latitude. I have never seen it in Ohio except during its spring and fall migrations, but it undoubtedly nests in rare instances in the southern and middle portions of the State and more commonly in the northern counties. Dr. J. M. Wheaton considers it a summer resident in Northern Ohio and possibly in all parts of the State; and Dr. F. W. Langdon has met with it as late as June in Hamilton County. Wherever found during the latter part of May or in the month of June it undoubtedly breeds. In the North-eastern States two broods are often reared by a single pair; the first nest being constructed the latter part of May, the second in July.

LOCALITY:

The nest of this species like that of the Wood Thrush is built in retired woods, where the ground is damp and the trees are mossy, and in shady ravines beside running springs and boggy earth. The bird is naturally shy, and usually avoids man, but instances are recorded where it has made its home in a country garden and even in a city lawn.

POSITION:

The nest like that of the Chewink is generally placed on the ground, beside a log, at the roots of bushes, or in a tussock of grass among the dead and semi-decayed leaves of the woods. When not supported by the ground or a bed of leaves, it is built in a low crotch, a thicket of branches, or some such place. Mr. C. J. Maynard, in "Birds of Eastern North America," writes as follows concerning the nesting habits of this Thrush in Massachusetts where it is very common: "They generally build their nests during the last week in May; nearly always in the thick woods. It is usually placed upon the ground by the side of a prostrate tree or log or else at the foot of a clump of bushes. The situation chosen is almost always upon a sloping hillside, near a swamp, where the trees grow thick and the shade is dense. But a short time since, however, I was surprised by seeing a nest built on an apple-tree in the orchard of the well known apiarist, Mr. H. Alley, at Wenham. The nest was placed on the tops of some twigs and limbs, after the manner of the Cuckoos, and at the height of ten feet from the ground. It was constructed of much the same material as usual, and contained four eggs in an advanced stage of incubation. This is the first out of many instances where I have found the nest of this bird in any other situation than on the ground."

MATERIALS:

Weed-stems, leaves, leaf-stems, grap-vine bark, grass, rootlets, and occasionally moss, comprise the materials of most nests. Two nests before me, which are average specimens, are composed as follows:

No. 1. Foundation and superstructure are made chiefly of hollow weed-stems, some of which are a foot long by one-eighth of an inch in thickness, and dried and skeletonized leaves of oak and beech. The rim is well formed of weed-stems adroitly intertwined. The lining is scant, and consists of roller-grass, vine-tendrils, and skeletonized and broken leaves. The external diameter is four and one-half inches; external depth, four inches; diameter of cavity, two and one-half inches; depth of cavity, two and one-fourth inches. No. 2. Foundation and superstructure consist of weed-stems, strips of grape-vine bark, maple leaves, leaf-stems, and rootlets ingeniously matted together into a rather firm structure. The lining is made of roller-grass, rootlets, and skeletonized leaves. External diameter, six and one-half; external depth, four inches. Diameter of cavity, two and five-eighths; depth of cavity, one and five-eighths inches. These nests are very light for their size, weighing respectively one ounce and a quarter, and one ounce.

EGGS:

The number of eggs in a set varies from three to five—the usual complement is four. They are rather long and pointed, and are uniform greenish-blue when fresh—a shade between the Catbird's and Wood Thrush's. The color fades some in time. In long diameter they measure .85 x .95; and in short diameter from .58 to .68. A common size is about .62 x .90. A set of four eggs before me show the following variations: .89 x .63, .90 x .62, .92 x .63, .92 x .62.

DIFFERENTIAL POINTS:

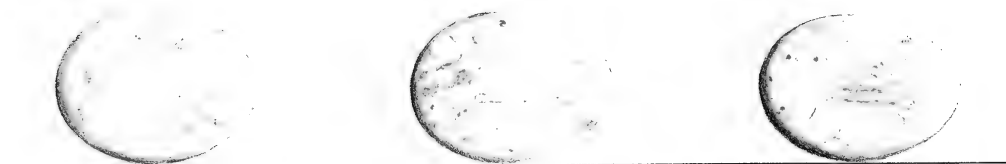
The nest and eggs together when still in position can not be mistaken, and even when collected and separated it is still possible to identify each. The eggs have a tint peculiarly their own, and even when this has faded by time to the tint of the Wood Thrush's eggs their size will still insure identification. The eggs of the Wood Thrush average about .100 x .70; those of the Catbird, .95 x .69. The nest resembles in construction that of the Catbird and Chewink, but its internal diameter is smaller. It also resembles the nests of several Warblers, but the dimensions of its interior are larger. From the Wood Thrush's nest it can at all times be distinguished by the absence of mud in its superstructure.

REMARKS:

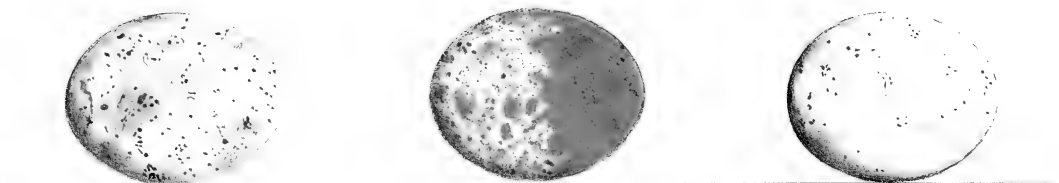
The nest illustrated, Plate LVIII, was found in Franklin County, May 21st, 1884. It was in a damp, shady ravine, about twenty inches from the ground, and contained four eggs. As the common position is so similar to that of the Chewink's nest, it seemed best to figure a structure in a more unusual situation. The eggs, selected from three sets, show the usual sizes and color.

In a general way the habits of the Wilson's Thrush and the Wood Thrush are similar. Both birds are fond of solitude and look somewhat alike, though the former is a little smaller and darker colored, except its breast-spots, which are much fainter. The song of the Wilson's Thrush is inferior and less frequently heard. From its habit of singing at night the bird has been called the "Nightingale." All writers agree that this Thrush is a timid bird and so shy as to avoid more than a glance from its biographer, and even while sitting the female shows little of that anxiety and fearlessness of danger which the Robin exhibits when her home is being inspected.

I have a nest and four eggs of the Wilson's Thrush which were taken from the leaf of a skunk-cabbage plant situated at the edge of a swampy woods. The nest was placed at the base of the leaf about eighteen inches from the ground. In materials and workmanship it is in no way different from nests in the usual positions.



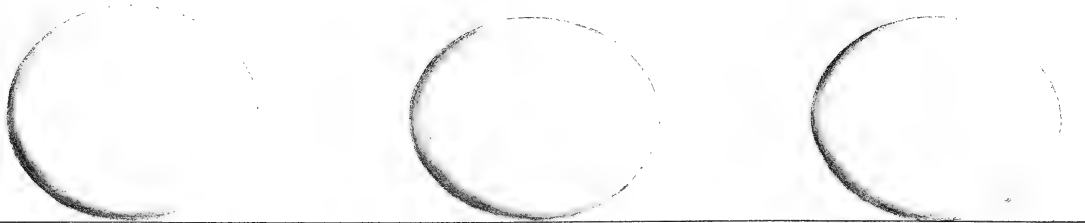
1.



2.



3.



4.

PL. LIX.

Fig. 1. *CIRCUS HUDSONIUS*.
MARSH HAWK.

Fig. 2. *BUTEO PENNSYLVANICUS*.
BROAD-WINGED HAWK.

Fig. 3. *STRIX NEBULOSA*.
BARRED OWL.

Fig. 4. *BUBO VIRGINIANUS*.
GREAT HORNED OWL.

PLATE LIX.

Fig. 1. CIRCUS HUDSONIUS—Marsh Hawk.

The first record of the Marsh Hawk in Ohio was made by Dr. Kirtland of Cleveland, in 1838, on the authority of Dr. Sager. In 1858, Mr. Kirkpatrick found it quite common about Sandusky Bay. In "Geological Survey of Ohio," vol. iv. 1882, Dr. Wheaton writing of this species says: "In the vicinity of Columbus it was once rather common, and bred in the swamp prairies south of the city. A few remained here during the winter but they were never numerous in summer. Now, it is comparatively rare; in some seasons none are seen." Mr. Dury a few years ago found it breeding at the Mercer County reservoir.

At the present time, the Marsh Hawk is in some localities of the State a permanent resident; in some, it is an occasional or a rare summer resident only; while in other sections it is not found at all except as an irregular spring and fall migrant. In the spring of 1870, I first met with it in the Scioto Valley. Since this date I have several times seen it during the spring, summer, and fall. In 1882, a pair built a nest within two miles of Circleville, but I do not think it has nested in Pickaway County during the past two years, although several pairs have been seen each spring.

Nidification begins the last of April or the first of May. But one brood is reared during a year.

LOCALITY:

The nest is generally placed near a swamp, pond, or wet prairie-land upon moderately dry ground. There are in the State many acres of land too wet for cultivation, which in the summer grow luxuriant grass, and often patches of flags, rushes, and low bushes, that fulfill in every particular the requirements of the Marsh Hawk during the breeding season. And it is in such places, although sometimes of but few acres in extent, that the nest is to be looked for if the Hawks are suspected of breeding in the locality. About large ponds with swampy borders the nest is often built in an adjoining meadow, instead of in the grass near the edge of the marsh. More rarely the site is among the dead leaves at the root of a tree in the border of a wood adjoining wet land.

POSITION:

The nest is almost invariably situated on the ground, upon whatever dead or growing vegetation happens to be on the site. Sometimes it is in open grass, sometimes it is beside a log, and sometimes under a bush; but wherever placed little or no effort is made at concealment.

MATERIALS:

The eggs are sometimes laid upon the natural debris of the site, without much if any arranging by the birds. More commonly, however, dead grass, leaves, weed-stems, and small sticks in various proportions compose a rough and scanty foundation upon which the eggs are deposited. But some birds go

even further in their architecture and line this rude foundation with grass, moss, hair, and feathers. At best the nest is but an artless affair and shows but the crudest workmanship.

Mr. Audubon described a nest which he found on Galveston Island, Texas. It was about twelve inches in external diameter, with a cavity two and one-half inches deep by eight inches in diameter. Another nest of this species, taken near Lake Erie, is described to me as about fifteen inches in external diameter by eight in depth. It is but slightly concave on top, the cavity having no well marked outline. It is composed chiefly of coarse sticks and grass. These two nests are larger and more elaborate than usual, at least so far as Ohio specimens are concerned.

EGGS:

The complement of eggs varies from four to six. The shell is rough and unpolished and has a faint greenish-blue tint. At first glance most eggs seem to be unmarked, but upon closer inspection the shell is found to be clouded with blotches of various sizes of the faintest yellowish-brown or lilac. These markings are so obscure as to appear due to dirt, but the most careful cleaning will not remove them. The majority of them are on the surface as can readily be demonstrated by immersing the egg in an acid solution. This will dissolve away the outer coating of the shell and leave it immaculate except for a few formerly deep shell-marks about as faint as the surface marks just removed. Some eggs are unmistakably marked with a few light yellowish-brown blotches, spots and irregular streaks. Besides these marks which are natural to the shell, the eggs are often stained by the grass and dirt upon which they lie. One egg in my collection has eight or ten spots of dark brown, almost black, about its base.

They measure in long-diameter from 1.76 to 1.86, and in short diameter from 1.38 to 1.45. Three eggs before me that are fair examples of the usual sizes, measure respectively, 1.38 x 1.85, 1.33 x 1.80, 1.43 x 1.85.

DIFFERENTIAL POINTS:

See Broad-winged Hawk, page 214.

REMARKS:

Fig. 1. PLATE LIX, illustrates the ordinary variations in the size, shape, color, and markings of the eggs of the Marsh Hawk.

As its name implies, this Hawk generally frequents marshy land, and so constant is this habit that it has become a striking characteristic of the species in whatever part of the world it is found. Its chief article of food in Ohio consists of field mice. These little animals are extremely numerous in damp prairies and furnish an abundant supply of fresh meat, not only for this Hawk, but for the Short-eared Owl, Sparrow Hawk, and other raptores as well. I have several times found the Short-eared Owl and Marsh Hawk inhabiting the same field, and apparently upon good terms. This close association suggests many points of similarity between the two species in their habits of nesting and procuring their living.

The nestlings of the Marsh Hawk are homely and ungainly little things, and like the young of all Hawks require much attention and instruction after they leave the nest, before they become expert enough to obtain their own food. Their first plumage is a reddish down; after their feathers appear both sexes are still much alike, and also very similar in color to their mother.

Mr. C. J. Maynard states that the female will leave her nest when she considers herself in danger and run off some distance before taking wing. This habit makes it difficult to surprise her sitting, and consequently her nest is hard to find. Many other birds which nest on the ground have this same trick, and they practice it so effectively that by this means alone, many eggs are probably saved from the clutches of that deadly enemy to all birds, the insatiable egg collector.

PLATE LIX.

Fig. 2. BUTEO PENNSYLVANICUS—Broad-Winged Hawk.

The Broad-winged Hawk is one of the rarest Hawks breeding in Ohio. It is not so very uncommon in the winter, but as spring approaches it goes northward. In the northern section of the State it is of more frequent occurrence, both during its migration and in the summer, than further south.

It builds its nest in March or April, and rears but one brood during the year.

LOCALITY:

This Hawk is fond of damp retired woods and wooded swamps, and in some such locality it builds its nest, choosing for the site a tall or medium-sized tree.

POSITION:

The nest is placed in a perpendicular or horizontal fork, or in a crotch formed by the main trunk with one of its large horizontal branches. The site is between twenty and fifty feet from the ground.

MATERIALS:

Like the nest of many other Hawks, the nest of this species is composed of sticks, weed-stems, grasses, and other vegetable substances for its foundation and superstructure, and similar but better selected material for its lining. It is a little smaller than that of the Red-shouldered Hawk, with about the same depth of cavity.

EGGS:

The complement of eggs consists of three or four, rarely five. They measure in long-diameter from 1.90 to 2.00, and in short-diameter from 1.48 to 1.55.

Dr. Brewer in "North American Birds" gives the following measurements: Average length 2.09 inches, average breadth 1.61 inches. Smallest egg, 1.50 x 1.94 inches; largest egg, 1.72 x 2.11 inches. The ground-color of the shell varies from dirty white to brownish. The markings consist of clouds, blotches, spots, and speckles of yellowish-brown or reddish-brown of various shades. Four eggs before me are marked, and measure as follows: No. 1. Size, 1.53 x 1.90. Ground-color soiled white. At the base are a few small blotches and speckles of Vandyke Brown, the remainder of the shell is unmarked except by cloudings of dirt and a few fine speckles of yellowish-brown. No. 2. Size, 1.55 x 1.97. Ground-color soiled white. Surface marks consist of a few irregular blotches and groups of small spots of a dark shade of reddish-brown arranged in a circle about the base, and a few speckles of the same color scattered from point to base. Deep shell-marks are large and numerous, almost the entire shell being clouded by faint neutral tint blotches varying in size from a silver dime to an eighth of an inch in diameter. They have faded and irregular outlines, and are often confluent. The surface marks are generally superimposed

upon them. No. 3. Size 1.54 x 2.00. Ground-color yellowish-tinted. No deep shell-marks. The pointed third of the egg is completely covered by a wash of yellowish-brown. At the base the ground-color is plainly visible between fine speckles which become thicker and thicker as the middle of the egg is approached until finally they merge into the solid wash of color mentioned. No. 4. Size, 1.52 x 1.98. Ground-color faintly yellowish tinted. No deep shell-marks. Surface marks consist of a few blotches of light yellowish-brown distributed irregularly over the egg.

DIFFERENTIAL POINTS:

The nests of all the large Hawks which build in trees are very similar. They are so difficult to obtain in perfect condition and so large, that but little interest is attached to them other than their location, position, and in a general way their materials of construction. The following species of Hawks breed in Ohio: Red-tailed Hawk, Fish Hawk, Red-shouldered Hawk, Broad-winged Hawk, Cooper's Hawk, Marsh Hawk, Sharp-shinned Hawk, and Sparrow Hawk. The eggs of these eight Hawks vary in size in the order named. The most highly-colored eggs of the lot are the Fish Hawk's. The Red-tailed Hawk's are the largest, but the Fish Hawk's approach them very closely in size. The third in size, and quite similar to the Red-tailed Hawk's in markings are the eggs of the Red-shouldered Hawk. The chief point of difference is that of size, this is usually sufficient to differentiate them. The next in size are those of the Broad-winged Hawk, they are about as much smaller than the Red-shouldered Hawk's as the Red-shouldered Hawk's are smaller than the Red-tailed Hawk's. This difference together with the difference in the color of the markings will usually enable one to distinguish them. Except the eggs of the Fish Hawk, those of the Sharp-shinned Hawk and Sparrow Hawk are the most heavily marked. Their size is much less than any of the others. See "Differential Points" under "Sharp-shinned Hawk." The faintest marked eggs are those of the Cooper's Hawk and the Marsh Hawk. The latter are a little the smaller and the ground-color is a little fainter, but they are so nearly alike that any but typical specimens can not be positively identified by size, color, and markings alone.

REMARKS:

The three eggs illustrated, Fig. 2, Plate LIX, were selected for me by Mr. Jenks of Providence, R. I., from a number of sets, as I was unable to obtain eggs of this species taken in Ohio, although it is certain that the birds breed here. Dr. J. M. Wheaton states that Mr. W. M. Wilson of Yellow Springs, Ohio, took a nest and four eggs of this Hawk, and there are other records of its breeding equally reliable. Mr. Alexander Wilson killed but a single specimen of the Broad-winged Hawk, and Mr. Nuttall never saw it. Mr. Audubon frequently observed it and found its nest and eggs. His account of the female, from which he made the drawing for his great work, is certainly remarkable. He discovered her upon her nest, and his brother-in-law climbed the tree, threw his handkerchief over her and carried her to the ground. The bird was then taken to the house and placed upon a stick, where she sat motionless during the time Mr. Audubon was drawing her portrait, and even suffered herself to be stroked and accurately measured with compasses without showing any irritation. The Hawk was finally tossed out of the window, when she at once made off to the woods. Accordingly Mr. Audubon characterized the species as inactive and wanting courage, which was certainly the case in this instance.

According to "North American Birds" Mr. Boardman has found the Broad-winged Hawk one of the most courageous and spirited of its family. On one occasion when a man, employed by him, was ascending to a nest, a parent bird assailed the disturber with great fury, tore his cap from his head, and would have done the man serious injury had it not been shot.

In another instance one of these birds attacked a boy climbing to its nest, and fastened its talons in his arm, and could not be removed until it was beaten off and killed with a club.

PLATE LIX.

Fig. 3. STRIX NEBULOSA—Barred Owl.

The Barred Owl is nearly as common as the Great Horned Owl; indeed, it is said in some sections of the State to be even more numerous.

It is a very hardy bird, is a permanent resident, and builds as early as the last week in February.

LOCALITY:

It inhabits retired woods, and nests in large trees, either among the branches or in a natural cavity. Low bottom-lands heavily timbered furnish the usual nesting places, but not infrequently its home is met with in small tracts of upland timber.

POSITION:

Sometimes the nest is situated in a horizontal or perpendicular crotch formed by several branches, sometimes it is on a large limb, in the angle formed with the main trunk, and sometimes it is in a hollow trunk or limb. The relative frequency of these positions it is impossible to more than conjecture. But wherever the site may be it is generally from forty to sixty feet above the ground.

MATERIALS:

When a cavernous tree is chosen for the home, it is said that few if any materials are carried for the nest, the eggs being laid on the soft decayed wood common to such places. When the nest is built among the branches, rough sticks compose its foundation, and upon this is placed a superstructure of weed-stems, grasses, rootlets, leaves, and similar materials, and within the slight cavity thus formed are artlessly arranged as a lining a little soft grass, bits of weed-fibres, and perhaps a few feathers. The nest resembles that of the Great Horned Owl or that of some of the larger Hawks.

EGGS:

The eggs are spheroidal, almost equally obtuse at each end. The shell is white, almost as granular, and about as smooth and well-polished as an ordinary hen-egg. In long-diameter they measure from 1.87 to 2.04, and in short-diameter from 1.52 to 1.75. The common size is about 1.65 to 2.00. Two or three eggs constitute a set.

DIFFERENTIAL POINTS:

The following species comprise all the Owls which I have been able to positively identify as breeding in Ohio at the present time: Great Horned Owl, Barred Owl, Long-eared Owl, Short-eared Owl, and Screech Owl. The Acadian Owl probably breeds in the northern counties, and the Barn Owl wherever found. At Glendale, Ohio, two years ago, several Barn Owls were found in a cupola, and I have many

reasons for thinking they have nested there. The eggs of the species enumerated above as spring residents are all white, and vary in size in the order named. The difference in size is not sufficient however to identify them. Between the eggs of the Great Horned Owl and Barred Owl there is commonly considerable difference in dimensions in favor of the former, but sometimes they approach each other so closely as to make identification by size alone impossible. The eggs of the three remaining species stand by themselves when compared with the first two. But among each other they vary so that recognition is impossible, except with typical specimens. The eggs of the Short-eared Owl are the most slender, and are apt to be considerably more pointed at one end than at the other. The eggs of the Long-eared Owl average about the same in size as those of the Short-eared, but are seldom so pointed, usually being equally blunt at both ends. The eggs of the Screech Owl are more nearly round than either of those just mentioned, but they may be like the others exactly in dimensions. The measurements of each given in the proper places will make apparent the variations in size.

REMARKS:

Fig. 3, PLATE LIX, represents the extremes in size and shape of the eggs of the Barred Owl. The specimens illustrated were selected from a large number of eggs taken in the Middle and Eastern States.

I have never found a nest of the Barred Owl. The species in the neighborhood of Circleville is by no means common. So rare is it that in ten years I have seen but three or four specimens. It is said by those who have studied the habits of this Owl that it frequently takes possession of an old Hawk's nest for purposes of rearing its young, as does the Great Horned Owl. It is also said to have better eye-sight in daytime than most of the other Owls. It has been seen searching for prey in broad daylight, and is reputed to be very watchful throughout the day while it rests in the woods. My observations upon owls have convinced me that they are by no means so blind during the daytime as they are said to be. I have frequently tested the vision of the Great Horned Owl in confinement, and consider it quite acute, and in the woods, even on the brightest days, it watches the man with a gun so closely that it is by the merest accident he can approach near enough for a shot. When disturbed in the woods it flies with the greatest ease and certainty, and by no means in the stumbling manner which some authors have described. The vision of the Screech Owl and Long-eared Owl is also very good, and in daytime is quite sufficient for all ordinary purposes.

The Barred Owl is a real desperado, and its depredations are as much feared by the country housewife as those of the Great Horned Owl. Each of these birds when pressed for food will boldly enter the poultry-yard and carry away chickens, ducks, and even young turkeys. The manner in which they catch chickens is unique, if the stories which I have heard can be relied upon. It is said that these Owls will alight upon the roost beside the chickens and sidle along, crowding them until one loses its place and falls groundward. As quick as a flash the Owl darts after it, and before the unlucky bird touches the earth it is in the talons of the robber and is rapidly borne away to be devoured at leisure.

A pair of Owls will in a single night destroy a large number of chickens, apparently delighting in the sport. The country people have a novel way of entrapping these rascals, viz.: A long, stout pole is planted in the earth near the poultry-yard, and upon the top of this a small cross-bar is driven, and upon this cross piece an ordinary steel trap is set. The Owls hunting for a place where they can inspect the neighborhood before beginning their thieving, espy the pole, and, considering it a good point of observation, at once take possession. As a result the farmer finds an owl in his trap the following morning. I have seen nine Owls caught in two weeks, one Barred Owl and eight Great Horned Owls.

PLATE LIX.

Fig. 4. BUBO VIRGINIANUS—Great Horned Owl.

The Great Horned Owl is a common resident species throughout the State, and in some sections is nearly as numerous and as well known as the Screech Owl. It usually nests in February, and rears but one brood during the year.

LOCALITY:

The nest is generally situated in a tall tree in dark and retired woods. The timber in river-bottoms and uplands is each frequented, but the species prefers especially the large and gnarly sycamores which grow along the banks of rivers and creeks. Exceptionally the nest is built in an isolated tree, or in one of a small clump of trees a half a mile or more distant from the nearest timber-land.

I have several times found it in low trees in cultivated fields.

POSITION:

The largest and tallest trees are commonly selected for the nest, the chosen site being a cavernous limb or trunk, or a perpendicular or horizontal fork formed by three or four branches, from thirty to sixty feet above the ground. I recently found a nest in the crotch of a honey-locust tree which was exceptionally low, its height being but sixteen feet.

MATERIALS:

When the nest is in a hollow tree the materials of which it is composed consist chiefly of weed-stems, corn-husks, corn-silk, leaves, feathers from the mother-bird, and other pliable material in greater or less quantity, according to the size of the cavity and the individual fancy of the builders. I have heard of an instance where the eggs were laid upon the soft decayed wood which had accumulated in the interior of an old tree-trunk. The composition of the nest when built among the branches differs from the above description only in the addition of a foundation of coarse sticks. These are necessitated by the position and are worked into a rough platform like that in the nest of the Crow or some of the larger Hawks. A nest taken in February 1882, is composed and measures as follows: Position, crotch of Elm tree. Height, forty feet. Foundation, coarse twigs varying from a few inches to a foot and a half in length, and from one-sixteenth to three-eighths of an inch in diameter. Superstructure, grasses, rootlets, sod, weed stems, oak-leaves, corn-husks, and similar flexible materials intertwined and felted. Lining, grasses and feathers from the breast of the builders. The structure resembles the nest of the Crow in size as well as in materials and mode of construction. The cavity is shallow measuring but two inches in depth. Its diameter is about eight inches.

EGGS:

Two or three eggs compose the complement. Two are found oftener than any other number. The

shell is white, when clean, with a granular surface moderately polished. They are spheroidal in shape and measure from 2.17 to 2.30 inches in long-diameter by 1.80 to 2.10 in short-diameter. The common size is about 1.95 x 2.20. Three eggs from three sets measure 1.95 x 2.20, 1.80 x 2.18, and 1.82 x 2.17.

DIFFERENTIAL POINTS:

See page 216.

REMARKS:

The three eggs illustrated Fig. 4, PLATE LIX, represent the common shapes and sizes.

The Great Horned Owl is the earliest of all our birds to begin the cares of housekeeping. Often some weeks before winter has fairly taken its departure, a home has been built or rented, and the mother-bird is busily engaged in the wearisome task of incubation. As early as the 15th of February I have found this Owl sitting on a complement of eggs, when the weather was so cold that a single hour's neglect would most certainly have resulted in their destruction by freezing.

On the 26th of March, 1881, the ground was covered with several inches of snow and the temperature for some days had been below freezing. Upon the day mentioned I visited a nest and found the female sitting surrounded by snow. She suffered me to approach within a few feet before she took flight. I then discovered two owlets about the size of goslings two days old, and covered with down of much the same color. I took them home and found them the most ungainly youngsters I had yet examined. They were strong with their feet and could make one cry out with pain when the hand was grabbed in their talons, yet they were too feeble to walk and rolled over with every attempt. When undisturbed they made a curious noise; each one of them alone made sounds which resembled a whole flock of little chicks huddled under their mother's wings, and when put under a hat, no one could guess from the peepings the number of peepers. The weather seems to have but little influence over the nesting of this owl. When the middle of February arrives, whatever the temperature may be, oviposition becomes the all-absorbing topic. Just the proportion of birds which build in cavities to those which nest among the branches it is difficult to estimate. I am inclined to believe they are about equally divided. Of the birds which nest in the latter position, but few construct their own homes. The owl can become a pretty fair architect, constructing a nest as well as the Red-tailed Hawk, but it is generally too careless or lazy to try its skill in this direction. It prefers to take advantage of the labor of some other bird, generally the Red-tailed or Red-shouldered Hawk, and, laying its eggs earlier than these birds, it has the privilege of choosing from all nests of the previous year. I have in mind one nest in a very large willow-tree, three miles below, Circleville which has been occupied during the past six years, two seasons by the Great Horned Owl, and three by the Red-tailed Hawk, one year it was tenantless.

When a pair of Owls take possession of an old nest, it is renovated only by the addition of a new lining. The mother-bird sits very closely during the three weeks of incubation, and the male bird is very attentive to her and probably brings her food, and, at times, relieves her at her task. If the eggs are not yet hatched the female will often slip from her nest at the approach of man before he is within gunshot, but if the young have made their appearance she will boldly defend them.

The Owl bolts its food and throws out of its stomach whatever in the way of hair, feathers, and bones can not be digested. Their capacity at swallowing is considerable. I have over and over again fed to my pet Owls large Norway rats, which they would swallow head foremost without breaking the skin, and, hours afterward, the tails of the rats could be seen dangling from the mouths of the satiated and now sleepy Owls. As digestion proceeded the tails would slip down and finally disappear. In due time the remains of the rat which could not be assimilated would be vomited up in the form of a ball, and the Owl be again ready for another feast.



Pl. LX. Fig. 1. *COTILE RIPARIA*.
BANK SWALLOW.



Fig. 2. *STELGIDOPTERYX SERRIPENNIS*.
ROUGH-WINGED SWALLOW.

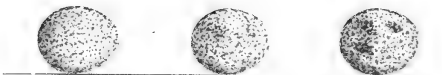


Fig. 3. *PROTONOTARIA CITREA*.
PROTHONOTARY WARBLER.



Fig. 4. *COTURNICULUS PASSERINUS*.
YELLOW-WINGED SPARROW.



Fig. 5. *PARUS CAROLINENSIS*.
CAROLINA CHICKADEE.

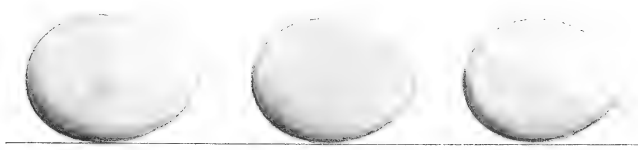


Fig. 6. *BONASA UMBELLUS*.
RUFFED GROUSE.

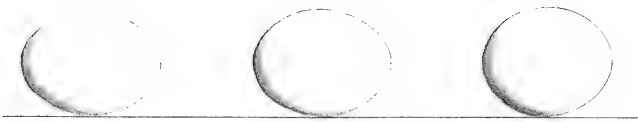


Fig. 7. *ARDETTA EXILIS*.
LEAST BITTERN.



Fig. 8. *ASIO AMERICANUS*.
AMERICAN LONG-EARED OWL.

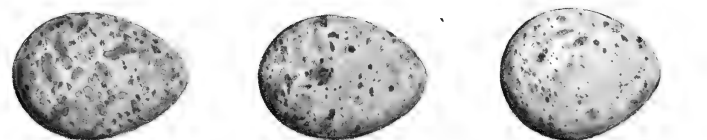


Fig. 9. *PHILOHELA MINOR*.
AMERICAN WOODCOCK.

PLATE LX.

Fig. 1. COTILE RIPARIA—Bank Swallow.

The Bank Swallow arrives from the South about the middle of April, and remains until the first week in September or later. It rears two broods a year, laying the first set of eggs in May and the second set in July.

LOCALITY:

As its name implies, this Swallow builds its nest in a bank. It is especially fond of sandy cliffs, washed at their base by the sluggish current of a river, and it is in such steep, almost perpendicular sandy walls that the majority of nests are placed. Occasionally, nests are found at a distance from water, in the bank of a gravel-pit or some such place.

POSITION:

Like the Kingfisher, the Bank Swallow excavates a burrow. This is round or elliptical and is projected horizontally into the earth from one to three feet, and, occasionally, even to a greater distance. Two feet is about its usual length. At its end the burrow enlarges into a globular room upon the floor of which the nest proper is placed. The distance of the nest from the top of the bank and from the level of the water below, depends upon the conformation of the earth. There are generally several kinds of dirt in these river-banks. First, the surface soil which is a foot or more in depth. Next, a mixture of clay and gravel, then, perhaps, a vein of sand, and below this again gravel or clay. But, whatever the arrangement or proportions of these various layers, the Swallow almost invariably selects the vein of sand for its nest. Often this sand is near the top of the cliff forty or fifty feet, or even a greater distance above the water. Sometimes the cliff itself is low and the sand is within ten feet of the water. As a rule the burrow is placed as near the top of the bank as the sand will permit, and it is seldom a bank is chosen for the site in which the top of the sand layer is nearer the water than ten feet.

MATERIALS:

The floor of the room mentioned above is concave, from four to six inches in diameter, and affords a suitable foundation for the nest. I have examined nearly fifty of these nests and have found weed-stems, straws, and chicken-feathers in various quantities and proportions in nearly all of them. In three instances the eggs were deposited upon the sand, not even a straw having been carried into the burrow. The most perfect nests consist of a layer of weed-stems and straws about half an inch thick and are lined with an abundance of long, soft feathers from the poultry-yard, many of these feathers being twice the length of the Swallow. Generally a few straws, weed-stems, and feathers carelessly arranged as a lining for the sandy cavity satisfy the builders. The entrance to the nest is usually round, and about two and a half inches in diameter. Sometimes it is elliptical with the greatest diameter in the horizontal plane.

EGGS:

The complement of eggs is commonly five or six, for the first set, and four or five for the second. The shell is pure white, unmarked, and but moderately polished. Fifteen eggs taken as they come from about one hundred specimens measure as follows: .48 x .72, .51 x .68, .48 x .72, .50 x .69, .49 x .65, .50 x .67, .49 x .69, .49 x .70, .48 x .66, .51 x .68, .50 x .71, .48 x .70, .48 x .67, .50 x .69, .48 x .69. The smallest egg in the collection measures .47 x .60, the largest, .50 x .72. The greatest long-diameter is .72, the least long-diameter is .60. The greatest short-diameter is .51, the least short-diameter is .47.

DIFFERENTIAL POINTS:

See "White-bellied Swallow."

REMARKS:

The four eggs of the Bank Swallow figured on PLATE LX., Fig. 1, show the common sizes and shapes, and one exceptionally small egg.

The Bank Swallow is the only one of its family which has not changed to any extent the location of its nest under the influence of civilization. The Rough-winged Swallow, now takes advantage of the stone bridge-piers and even crevices about town buildings. The White-bellied Swallow resorts to bird-boxes. The Cliff Swallow hangs its nest under the friendly caves of houses and barns. The Barn Swallow has abandoned the caves for the sheltered rafters of barn lofts, and the Purple Martin is nearly as domesticated as the House Sparrow.

Although civilization has not changed the nesting habits of this Swallow it has undoubtedly diminished its numbers. At the present time the distribution of the species is irregular as well as limited to localities adapted to the bird's requirements. Of the numerous banks suitable for their nests with which I am familiar, I know of but two that are inhabited. These, from my earliest recollection, have afforded dwelling places for the Bank Swallow, and they have nested here year after year, undisturbed except by myself, until each colony now consists of hundreds of birds. The sand vein in one of these banks about five miles north of Circleville, on the Scioto River, is, in the summer, literally honeycombed with the burrows. The bank is about seventy feet high, and the vein of sand is about ten feet from its top. The freshets, wind, and rain cave in this bank somewhat every Spring, so that the returning Swallows find fresh, clean sand for their lodgings.

All Swallows colonize more or less during the nesting season, but this trait of character is most marked in the Bank Swallow, and least developed in the Rough-winged and White-bellied Swallows. Some years ago I noticed that the nests of the Bank Swallows which I was examining were infested with fleas. I shot several of the birds and found them similarly inhabited. Two years ago I examined several dozen nests and found that every one contained fleas. Those nests which contained the most material contained also the most fleas. The number of these pests in a single nest was astonishing, and it seemed impossible that the mother-bird could incubate her eggs under such circumstances. The young, if they had any ideas at all, must have looked forward with something akin to joy to the day when nature would release them from this bondage in "flea-land."

PLATE LX.

Fig. 2. STELGIDOPTERYX SERRIPENNIS—Rough-winged Swallow.

The Rough-winged Swallow arrives and departs about the same time as the preceding species. It rears two broods each year, the first set of eggs being hatched in May, the second set in July.

LOCALITY:

In the early history of this country the nest of the Rough-winged Swallow was built in clayey and sandy banks along rivers, creeks, and other bodies of water, and also in crevices in rocky cliffs bordering streams, or even at considerable distance from water. At the present time the majority of these birds still cling to the nesting habits of their ancestors, but there are some that have succumbed to the influence of man and seem to have acquired new tastes under their new surroundings. The following from the pen of Dr. J. M. Wheaton, of Columbus, well describes some of the modern nesting sites: "With us, although the greater number are found within the vicinity of water, the Rough-winged Swallow is a bird of general distribution. It was first detected in this State by Dr. Kirtland, who found them abundant and nesting in the banks of Rocky River, near his residence. In 1861, I found it common in the vicinity of Columbus, and discovered its nest on a beam under a low bridge. Since then, they appear to be increasing in numbers, at least in the city. They nest abundantly in the banks of rivers and creeks, and in gravel pits, where they excavate holes, larger, but not so deep as the holes of the Bank Swallow. They generally choose a spot where excavation is easy, an isolated pair often removing a decayed root; small colonies generally excavate their holes between a layer of loam and one of sand, in such a manner that the loam forms the roof and the sand the floor of the excavation. . . . Their nests are often in the cracks of rocks of stone-quarries, and very frequently in the crevices of the piers and abutments of bridges, the foundation of mills, and other masonry. In the city they frequently place their nests in the most frequented places. A pair nested for several successive years not more than thirty feet from the principal business street of this city, occupying a padlock hole in a brick building about ten feet from the ground, and below the windows of a telegraph office. Another pair nested in an alley in a hole in a brick wall under a door in the second story, through which goods were daily raised and lowered by a hoist. They also build on the projecting caps of the large pillars in the portico of the State House."

POSITION:

The burrow in which the nest is built, when the Swallows do their own excavating, is seldom above ten feet from the surface of the water, and often much nearer. The majority of nests along the Scioto River and its tributary branches are in low clayey banks within five feet of the water. The burrow enters nearly horizontally to a depth of two or three feet and then enlarges into a room with low ceiling. When masonry or a rock-quarry is the selected locality the nest is situated in a crevice, sometimes but a few

inches from the entrance. Its distance from the ground or water varies considerably in this case according to the opportunities afforded by the site, usually it is as low as the locality will permit. I have taken the nest within three feet of the ground within the city limits of Circleville, and, again, I have observed them nesting under the sills of a third story window.

MATERIALS:

The room at the end of the burrow is from four to six inches in diameter, and its floor is slightly concave. Upon this is usually arranged in a loose manner a layer of straws, weed-stems, and various kinds of large feathers. A nest taken May 6, 1880, contained a few straws and a layer of large, white feathers from the breast of the tann goose; upon this the eggs rested. Another, taken April 28, 1880, contained straws and chicken's feathers. Another, taken May 14, 1883, contained straws, weed-stems, and two small feathers. Nearly every nest which I have examined contained an abundance of soft feathers for a lining. Nests in any of the other positions named, differ but little, if any, from the nest in a burrow. The entrance to the nest when formed by the birds is seldom round, being somewhat wider than high, and upon the whole, larger than that of the Bank Swallow.

EGGS:

The complement of eggs is usually five for the first set and one less for the second set. Occasionally six eggs complete the first laying. The shell is pure white, unmarked, and, although quite fragile, is considerably thicker and stronger than that of the Bank Swallow's egg. In long diameter these eggs vary from .68 to .76, and in short-diameter, from .50 to .54. A common size is about .52 x .69. A set of five eggs measures respectively .53 x .69, .52 x .75, .52 x .70, .51 x .69, and .51 x .69.

DIFFERENTIAL POINTS:

See "White-bellied Swallow."

REMARKS:

Fig. 2, PLATE LX represents the ordinary variations in the size and shape of the eggs of the species under consideration. The two middle eggs show the commonest forms.

The Rough-winged Swallow is a very plentiful species in Ohio, especially in the central portion of the State along the large rivers and creeks. I have found their nests along the Scioto River alongside those of the Bank Swallow, the two species being apparently very friendly. Although several pairs of these Swallows may build their nests neighboring each other, they do not seem to form a close colony like the Bank Swallows. I have seldom seen half a dozen nests in the same masonry or side by side in a bank. Yet in half a mile of shore along the above mentioned stream, from twenty to thirty isolated nests can usually be found. From this I infer that these birds have not the disposition to colonize, so strongly marked in most of the Swallows. The Spring and Summer freshets destroy large numbers of nests, eggs, and young birds. A rise of fifteen feet in the streams along which these Swallows breed, will generally flood nine-tenths of their nests, and with the most disastrous results. When their nests are disturbed by man they show great anxiety and fly about the head of the intruder in a threatening manner. Often the female will remain on her nest until the earth is dug away so that she is exposed to view. I have twice captured the mother-bird in my hand, she seeming to be willing to take any risk rather than leave her prospective young. In the fall after the last brood of young is able to fly, these Swallows collect in large flocks, and, some days previous to their departure, hundreds may be seen in the air hunting over the water and the adjoining fields.

PLATE LX.

Fig. 3. *PROTONOTARIA CITREA*—*Prothonotary Warbler*.

The Prothonotary Warbler is included among the summer residents of Ohio, on the authority of Mr. Chas. Dury of Cincinnati, Ohio. He discovered its nest at the St. Mary's Reservoir in a deserted Woodpecker's hole. I have never seen this species alive and have no record of its time of arrival and departure, and of its breeding habits within the limits of the State, other than just referred to. The following text is condensed from a most interesting article by Mr. Wm. Brewster, in the Nuttall Ornithological Club Bulletin, October, 1878, and from "Birds of North America."

LOCALITY:

This Warbler inhabits bottom-lands, principally bushy swamps, and willows along the borders of stagnant lagoons, or ponds near rivers, and, in such localities, in common with the White-bellied Swallow takes possession of the holes of the Downy Woodpecker, Chickadee, and natural cavities in old stumps and tree-trunks in which to build its nest.

POSITION:

The nest is seldom above fifteen feet from the ground, and usually is about four feet. To give a description of the various situations in which it is placed, would entail an account of nearly every kind of hole and tree-trunk. Suffice it to say the nest is snugly fitted to the chosen cavity, being supported at its bottom and sides.

MATERIALS:

Fresh green moss enters largely into the composition of the nest, the shape and size of which varies with that of the cavity in which it is placed. When the hole is deep it is usually filled up to within four or five inches of the entrance. Thus the nest when removed presents the appearance of a compact mass of moss five or six inches in height by three or four in diameter. When the cavity is shallow, it is often only scantily lined with moss and a few fine roots. The deeper nests are of course the more elaborate ones. One of the finest nests which Mr. Brewster found near Mt. Carmel, Illinois, is composed of moss, dry leaves, and cypress twigs. The cavity for the eggs is a neatly rounded cup-shaped hollow, two inches in diameter by one and a half in depth, smoothly lined with fine roots and a few wing feathers of some small bird. Another nest taken near Neosho Falls, Kansas, was built in a Woodpecker's hole in the stump of a tree, not more than three feet high. The nest was not rounded in shape, but made to conform to the irregular cavity in which it was built. It was made of fragments of dried leaves, broken bits of grasses, stems, mosses and lichens, decayed wood, and other materials, the upper portion consisting of an interweaving of fine roots of wooded plants, varying in size, but all strong, wiry, and slender. It was lined with hair.

EGGS:

The number of eggs constituting a full set, varies to an unusual degree. Out of fifteen sets examined by Mr. Brewster, two included seven eggs; three, six; three, five; four, four; two, three; and one, one. The average number is probably five or six. They measure from .58 x .67 to .59 x .73. They are noticeably blunted at the smaller end. The ground-color is clear, lustrous white, with a high polish. Eggs from different sets vary considerably in markings, but two types of coloration seem to prevail. In one, spots and dottings of dull brown with faint submarkings of pale lavender are generally and evenly distributed over the entire surface. In the other, bold blotches of bright reddish-brown are so thickly laid on, especially about the larger ends, that the ground color is in some instances almost entirely obscured.

DIFFERENTIAL POINTS:

See Table.

REMARKS:

The three eggs of the Prothonotary Warbler represented on PLATE LX, Fig. 3, were taken from a nest found in Indiana in 1880. The set consisted of six eggs.

It is probable that the Prothonotary Warbler breeds every year in suitable localities, in various parts of Ohio, and I hope yet to be able to discover it and personally learn something of its habits. Mr. Brewster, from whom I have already quoted largely, in the article referred to above, writes as follows: "In the hope of presenting to the reader's mind some slight idea of the general character and surroundings of the locality where the Prothonotary Warblers were found breeding in the greatest abundance. I close with a brief description of a visit, on May 11th, to Cypress Swamp. Towards the middle of the afternoon we reached Beaver Dam Pond, and embarked in an old weather-beaten dugout. Our guide, a half-breed Indian and a most accomplished woodsman, took his station in the stern, and with a vigorous shove upon his long push-pole sent the frail craft well out into the pond. Before us stretched a long, narrow sheet of water hemmed in on every side by an unbroken wall of forest trees. Around the margin grew a fringe of button-bushes, with a sprinkling of tall slender willows, while behind and above them towered the light-green feathery crests of numerous cypresses. The low shores were in many places flooded with water for a considerable distance back into the woods, to where the land rose in broken ridges and the cypresses gave way to a growth of oaks, black-walnuts, lindens, and numerous other forest trees. The depth of the water, even in the center of the pond, did not exceed five feet, and over the greater part of its extent rank grasses, yellow water-lilies, and other aquatic plants reared their tall stalks or broad leaves in such profusion, that every-where, except immediately around the canoe, the eye rested upon what seemed a meadow of waving green. As we pushed our way through the denser growths, the stems yielded before the bow with a slight rustling sound. Wood Ducks and Hooded Mergansers rose on every side, while their broods of downy ducklings scuttled off among the water-plants, sometimes huddling close together, a dusky mass of bobbing little forms, at others, when closely pressed, separating and diving like water sprites. From the lower depths of the forest came innumerable bird voices,—the slow, solemn chant of the Wood Thrush, the clear whistled challenge of the Cardinal, the sweet wild notes of the Louisiana Water Thrush, the measured *pter-dle, pter-dle, pter-dle*, of the Kentucky Warbler, and the emphatic song of the Hooded Flycatcher. . . . From all along the pond edges came the Sandpiper-like song of the Prothonotary Warblers. . . . Although the willows grew rather thinly, the spaces between the living stems were filled with stubs in every stage of decay, and perforated with countless Woodpecker-holes, most of them old, and long since given up by their original tenants. That a locality so favorable in every way had not been overlooked by the Prothonotary Warblers was soon evinced by the presence of the birds on all sides in numbers that far exceeded any thing which we had previously seen, and careful search soon revealed a number of nests."

PLATE LX.

Fig. 4. *COTURNICULUS PASSERINUS*—*Yellow-winged Sparrow*.

The Yellow-winged Sparrow is a resident of Ohio from April until September. In some localities it is quite common, in some, it is but moderately plentiful, while in other sections, equally well adapted to its wants, it is rare. About Circleville it is neither common nor rare, being just numerous enough to escape either adjective. Two broods are frequently reared by a single pair during the summer.

LOCALITY:

It inhabits clover and grass fields, and in such localities builds its nest. It associates with the Black-throated Bunting and Bay-winged Bunting, the three species often building near each other in the same field.

POSITION:

The nest is placed on the ground at the foot-stalks of a bunch of red clover, or in a tussock of grass or of small weeds. Every nest which I have found has rested in a depression in the earth, similar to the nest of the Bay-winged Bunting.

MATERIALS:

A nest before me is composed of a foundation of rough grasses and weed-stems, a superstructure of similar but better selected material, and a lining of horse-hair and fine bleached grasses. Its external diameter is four and one-eighth inches; its external depth is one and seven-eighths inches. The diameter of its cavity is two and one-half inches; its depth of cavity is seven-eighths of an inch. The structure is loosely put together and displays but little skill in workmanship, it is, however, a fair example of the architecture of this species.

EGGS:

The complement of eggs consists of four or five. They measure in long-diameter from .70 to .74 of an inch, and in short-diameter from .56 to .59 of an inch. The ground-color of the shell is white. The markings consist of blotches, spots, and speckles of reddish-brown; the deep shell-marks appear lavender or neutral tint. Three eggs from as many sets are marked and measure as follows: No. 1. Ground-color white; base thickly marked with confluent blotches, spots, and speckles of reddish-brown, some of which are much darker in shade than others. Remainder of egg is sparingly dotted and speckled with same color, and in addition there are several cloudy patches made up of a number of very faint gray blotches and speckles. Deep shell-marks are few in number. Size, .53 x .70. No. 2. Ground-color white. Markings consist of brown-madder blotches, spots, and speckles, the majority of these form a wreath about the crown, the remainder are scattered irregularly over rest of shell. Deep shell-marks are neutral tint, they

are numerous and are often confluent and occasionally obscured by surface marks. Size, .59 x .74. No. 3. Ground-color white. Surface-marks are very faint burnt-sienna, and consist of blotches, spots, and speckles and occasionally, irregularly short lines. The deep shell-marks are twice as plentiful as surface marks, they are pale lavender and are chiefly in a wreath about the base, while the surface marks are distributed for the most part over the pointed half of the shell. Size, .54 x .71. From the above descriptions the reader will see that there is considerable variation in the amount and pattern of markings.

DIFFERENTIAL POINTS:

The eggs of the Yellow-winged Sparrow are easily recognized from the eggs of other Sparrows which build in a similar locality and position, by their size, ground-color, and color and arrangement of the markings. The eggs of the Swamp Sparrow, the Song Sparrow, the Bay-winged Bunting, and the Lark Finch are so entirely different from those of the species under consideration, there is but the slightest chance of confusion. There are eggs which resemble them closely, but the nests are entirely dissimilar in location, position, and construction. See Table.

REMARKS:

Fig. 4, PLATE LX, represents three eggs of the Yellow-winged Sparrow, they show the common sizes, shapes, ground-color, and pattern and color of the markings. The location, position, and construction of the nest is so similar to some of the nests upon the ground already illustrated that a drawing of it is omitted.

On page 555, Vol. 1, "North American Birds," Mr. Brewer, writing of the eggs of this species, says: "Wilson and Nuttall describe the eggs as grayish-white, sprinkled with brown. Audubon says they are dingy-white, sprinkled with brown spots. This is not accurate. The ground-color is a clear crystalline white, beautifully dashed and marbled with bold markings of an almost golden brown. These spots vary in size, are often quite large, and occasionally make a corona about the larger end. The eggs are of a rounded oval, almost spherical, shape, measuring .75 x .63 of an inch." Page 127, "Birds of Eastern North America," Mr. C. J. Maynard says: "Eggs four or five in number, rather oval in form, ashy-white in color, spotted and blotched with reddish-brown and lilac, more thickly on the larger end." Mr. H. D. Minot, in "Land and Game Birds of New England," describing the eggs under consideration, writes: "Four or five eggs are then laid, averaging .78 x .60 of an inch, and normally are white, with a wreath of blended reddish-brown and obscure lilac spots about the greater end, and a few scattered spots of the former color elsewhere. In some cases the markings cover the greater end, so that there is no distinct ring." From the above it will be seen that, making due allowance for errors of description, there is considerable variation in the eggs of this Sparrow.

PLATE LX.

Fig. 5. *PARUS CAROLINENSIS*—*Carolina Chickadee*.

The Carolina Chickadee is a southern species which, according to "North American Birds," seldom breeds, further north than the Ohio River. Dr. Wheaton, in his last report on the ornithology of his state, says of this species: "Not common summer resident. Breeds. Arrives about the middle of April, apparently departs for the south soon after the breeding season. Resident all the year in South-western Ohio." Dr. F. W. Langdon gives it as a common resident about Madisonville, and Mr. Chas. Dury has found it breeding about Cincinnati. I have repeatedly seen it about Circleville late in the fall, and once I saw it in December when the ground was covered with snow. During the summer it is by no means uncommon, but it seems to be irregularly distributed. The first set of eggs is laid in May, and probably a second set is occasionally deposited in July.

LOCALITY:

It usually frequents sparsely timbered borders of streams, swamps of willows, and ravines about creeks and springs, and in such places finds a site for its nest. It generally excavates a cavity in a dead limb, trunk, stump, or even a prostrate and semi-decayed log which, lodged on the bank of a stream, overhangs the water. Some individuals, either incompetent or too hurried to cut a cavity, build their nests in deserted Woodpeckers' holes or in natural cavities, and some, differently constituted from the majority of their species, prefer upland woods or an orchard to the ranker vegetation and taller timber of the lowlands.

POSITION:

As a rule the nest is over four and under twenty feet from the ground. When an excavation is made the birds commonly select a horizontally inclined piece of timber, and make the entrance on the under surface. The doorway is projected nearly at a right angle to this surface for a short distance, then turns downward and enlarges into a cavity of considerable size, within which the nest proper is placed. The cavity formed is as well and accurately cut as that made by any of the Woodpeckers.

MATERIALS:

Differing from most birds which excavate a hole in decayed or dead timber, the Chickadee carries an abundance of soft material into the cavity, which is worked into a soft felt-like lining, and within this the mother-bird deposits her eggs and rears her young. Soft vegetable fibres, vegetable down, wool, moss, and fine, short hairs from various animals compose the bulk of the nest. When a natural cavity is chosen the site is often much too large and a great deal more material is demanded than when the builders do their own carpentry, but the internal dimensions of the nest are always about the same.

EGGS:

The complement of eggs varies from five to seven. They measure from .45 to .51 in short-diameter, and from .54 to .64 in long-diameter. Four eggs from as many sets measure respectively, .46 x .59, .47 x .54, .48 x .55, .48 x .60. The ground-color of the shell is pure white. The marks consist of large blotches, spots, speckles, and short lines of light reddish-brown; at times almost pure burnt sienna. One egg before me contains about three dozen blotches, none of which are smaller than a pin's head, and several are four times this area, scattered from tip to base. Interspersed between these are about twice as many spots which are occasionally confluent with each other and the blotches; and upon the background still unmarked are some very fine and indistinct speckles. The deep shell-marks are few and have none of the purple or lavender tint so common to them, but are simply paler than the surface markings. Another egg is similarly but less heavily marked, except on its basal half, which resembles closely the same part of the egg just described. Another contains at its basal end several small, deep reddish-brown blotches and a number of spots and speckles of lighter shades, superimposed upon about as many and very similar deep shell-marks; the rest of the egg is sparingly dotted with rectangular spots, speckles, and short, fine lines. Another contains blotches, spots, and speckles at its base. The larger marks form a slightly confluent wreath, within the circle of which are numerous spots and speckles; the remainder of the egg is sparingly speckled. There are but few deep shell-marks, these have a faint lavender tint. The above described specimens show the variations which commonly occur.

DIFFERENTIAL POINTS:

For detailed description and comparison of the nests and eggs of *P. carolinensis* and *P. atricapillus*, the reader is referred to the text upon the nesting habits of the latter species.

REMARKS:

Fig. 5, PLATE LX, represents three eggs of the Carolina Chickadee, of the usual sizes, shapes, and markings. Two of these were collected by Mr. Chas. Dury, in Hamilton County, May 27th, 1869. The third is one of a set taken in Pickaway County, May 20th, 1884.

The Black-capped and Carolina Chickadees are frequently confounded on account of their very close resemblance to each other. The subject of this sketch is in fact a little the smaller bird, averaging about half an inch less in length than its relative referred to, but their plumage is so similar that it is impossible for one not familiar with both species to say with which he has to deal when he only sees them at a distance in the woods. The most apparent difference between the two birds is in their habits. The Carolina Chickadee has a softer and more deliberate manner, and its voice is less loud. It is also shyer, seldom coming into towns, and seems in every way to be a more delicate and more finely organized bird. It is not gregarious like *atricapillus*, but is usually seen in pairs.

Dr. Coues, in his "Key to North American Birds," makes only a variety of *Carolinensis*, but lately it has taken rank as a species, as it formerly did with Audubon, who named it.

PLATE LX.

Fig. 6. BONASA UMBELLUS—Ruffed Grouse.

The Ruffed Grouse is a permanent resident of the State, and one of our hardiest birds. It is much less abundant than formerly, but is still plentiful in suitable localities. It builds its nest in April, and by September the young are about grown. When the season and surrounding conditions are favorable, this Grouse not infrequently rears two broods between the first of April and the middle of October. If the first set of eggs is destroyed, as often happens, another nest is soon constructed in a different locality, and the mother-bird is before long again absorbed in the duties of incubation.

LOCALITY:

The nest is usually situated about the border of a large woods, in a thicket of dense undergrowth; but occasionally the bird is bolder, and builds in a briar thicket in a pasture, or may even venture into a small wood adjoining a farm-house or road.

POSITION:

The nest is built on the ground, or upon a bed of semi-decayed leaves, about the roots of briars and bushes, beside a log, a stump, in a brush-heap, or even under the branches of a fallen tree.

MATERIALS:

Little or no art is displayed in building, although great caution and judgment are exercised in selecting the site. This accomplished the female scratches and wallows in the dried leaves and soft loam until a concavity is formed from seven to nine inches in diameter. In this, without further work, the eggs may be deposited, but generally a few soft leaves and grasses are selected and placed in the cavity as a lining. As the young run about as soon as hatched, it is not necessary that much care be given to the construction of their birthplace, but great skill is necessary to conceal it from the many prowling enemies in the woods.

EGGS:

The Ruffed Grouse lays from six to fifteen eggs, at the rate of one a day. The shell is cream-color, of various shades, sometimes so dark as to be nearly brownish, and at others almost milk-white. They are often stained in wet weather by leaves upon which they lie, and according to some writers are sometimes blotched and spotted with dark shades of the ground-color.

In long-diameter they measure from 1.40 to 1.70, and in short-diameter from 1.11 to 1.30. A common size is about 1.58 x 1.12. Five eggs, from as many sets, measure respectively, 1.11 x 1.48, 1.12 x 1.43, 1.15 x 1.55, 1.20 x 1.58, 1.20 x 1.63. Dr. Coues, in "Birds of Colorado Valley," gives the average size of the eggs as 1.20 x 1.66. Mr. H. D. Minot, in "Land and Game Birds of New England," gives 1.25 x 1.65 as the average, and in "Birds of North America," Mr. Brewer gives 1.15 x 1.60.

DIFFERENTIAL POINTS:

When the nest and eggs are found in the woods, it is hardly possible to mistake them so characteristic are the location and construction of the nest, and the size, shape, and color of the eggs.

A single egg, when separated from its natural surroundings, may also generally be readily recognized by its color, shape, and size.

REMARKS:

The eggs illustrated, were taken from three nests, and represent the usual sizes and colors of the shell. Although the Ruffed Grouse is being rapidly driven to the dense woods of the uncultivated hills of the State, yet a few remain in nearly every large tract of woodland in the most densely peopled districts. In Pickaway County, within a radius of ten miles, there are generally six or seven broods raised each year. I occasionally run across a nest or an old bird with young.

The mother-bird feigns lameness when she sees her brood in danger; and it is a beautiful sight to see an old bird scatter her little ones in the underbrush, and by her numerous devices endeavor to draw the intruder from the spot.

The young are very sensitive to cold and wet, and many of them are dragged to death during heavy rains. But when grown there is no bird superior in activity and hardihood, and their pursuit is one of the most delightful sports of the State. The following account of the Ruffed Grouse has been prepared, by request, by Dr. N. E. Jones:

"Hearest thou that bird?
I listened, and from 'midst the depth of woods
Heard the love signal of the Grouse that wears
A sable ruff around his mottled neck:
Partridge they call him by our northern streams,
And pheasant by the Delaware. He beats
'Gainst his barred sides his speckled wings, and makes
A sound like distant thunder; slow the strokes
At first, then fast and faster, till at length
They pass into a murmur, and are still."

The Ruffed Grouse is usually found in woodland having thick undergrowth, and inhabits alike craggy mountain sides, rocky ravines, and low borders of rivers and streams.

This Grouse may be briefly described as having a brown bill, crested head, hazel eyes, naked tarsi, grayish feet with the two anterior toes joined at the base and to the first joint. It measures from bill to end of tail, sixteen to nineteen inches—from tip to tip of wings twenty-three to twenty-four inches, and its tail measures six and a half to seven inches. Its weight is one and a half to one and three-fourths pounds. The plumage is variegated rufous brown. On the back it is grayish and rufous brown with numerous oblong pale black-edged spots:—on the sides and belly lighter shades, with blotches of brown and gray, edged with black:—the neck has an admixture of white, yellow, black and brown, and is ornamented with a tuft of long black or brown glossy feathers on either side which gives to the bird its distinctive name. The tail is usually composed of eighteen principal feathers of a rufous brown marked near their extremities with a broad black or brown zone between two narrow bands of light grayish-brown speckled with black. The dark broad band is about three-fourths of an inch wide, while the light grayish band, which is at the terminal end of the feathers, is about half an inch in width; and the other light border-band is nearly half the width of the latter joined to a black or brown margin upon the basal side. These light-gray or ash-colored bands extend across all the feathers of the tail alike, while

the wide dark sub-terminal band is usually broken at the two central feathers. In addition to these terminal bands, the surface of the tail shows eight or nine wavy bands, half an inch wide, of rufous brown with dots, speckles, and dashes margined with black or brown.

There is so much difference in the size of birds of the same sex and so much irregularity in the shades of color of the Ruffed Grouse, I believe it is impossible to distinguish the sexes by comparative size or by the plumage. Mr. Brewer in "North American Birds" says the female is smaller than the male and the neck tufts less developed but similar in color; while other observers make no difference in the size nor in the development of the tufts, but found the distinguishing marks upon shades of color of ruffs and tail zones; the dark shades being males and the light females. It is evident, however, that all these indications will be found unsatisfactory, as birds of different genders may show like dimensions and like color of tufts and zones from jet black through several shades of brown to light rufous, and the investigator will be unable to determine by these rules or by comparison which bird is large enough or dark enough for a male, or small enough or in color light enough for a female. I have frequently killed birds in the same woods, and no doubt of the same brood, presenting the same weights and dimensions, but of every gradation of shade in tufts and bars from black glossed with metallic hues to light rufous. Once in particular as I find by my notes of 1879.—One bird had large light rufous tufts and light rufous tail-feathers destitute of the terminal bands or zones, while others differed in this respect and with each other through several shades of rufous brown and black irrespective of sex.

The Ruffed Grouse subsists upon grain, seeds, berries, grapes, acorns, beech-nuts, and insects. When hard pressed for food in winter and spring it feeds upon buds and leaves. The slippery or red elm, sassafras, hazel, birch, and apple-tree are its favorites; and when a tree or bush is once taxed for daily supplies the foraging will continue until the selection is effectively stripped of its prospective foliage and blossoms.

The habitation of this bird is readily known by a drumming sound made by the male at nearly every season of the year, but most frequently during spring and summer. How so great a noise can be produced by the exterior of so small an object has called forth much conjecture and contradictory observation. E. J. Maynard in "The Birds of Eastern North America" advances a theory that the drumming is vocal from the fact the laryngeal muscles are constructed in a manner similar to the Pinnated Grouse the tootings of which are vocal, and says: "The wings merely aid in producing it or are beaten downward as accessories to the note, just as a rooster crows, flapping its wings at the same time." The logic of all this would appear much better without the illustration; for most certainly it is too generally known that the rooster flaps his wings before he crows, and does not use these appendages as "accessories" to the sound. And it can not be well said that the sounds made by the bird in question are produced just as the rooster crows. Some years since, I had a favorable opportunity to witness the act of drumming and did so with great interest, as so many statements had been made implying contradictions or want of agreement, excepting in one particular, viz.: that a log, stump, or stone is a necessary appliance in the production of the sound. My observations did not however verify even this agreement, for I saw the bird drumming while on the ground time and time again—moving along through the woods—going through his strutting antics and drumming every few minutes wherever he happened to be. A log, stump, or stone may often be selected as an elevation while making the noise, but not always nor necessarily; for sounds are made quite as well when standing on the ground. The elevated sites may be selected to give a favorable opportunity to see and to be seen; for the bird is not destitute of vanity by any means, and it is highly probable from his polygamous nature that the drumming is a special summons or call to distant females to come and witness a display of attitudes, airs, and splendors which are so attractive to the sex, and he may select favorable positions to show off to good advantage. Henry William Herbert who often took notes of these performances, on one occasion saw seven hen birds called around a male during the drumming.

No gifted pen has given a better description of this bird in all his pompous acts, than that given by Charles Hallock:—"While drumming, his form is erect, and his feathers appear to stand on end, grander and more delicate than the Turkey Cock. His head is posed over the end of his wing within four inches of his tail. The tail is spread like an open fan, making a half-circle, showing the many beautiful tints. His ruff, which is on each side of his neck, is raised, showing the beautiful jet it contains. The delicate curve of the wing lies close to the feet, almost hiding them. See him now, as he whirls right and left, and struts upon his favorite log. In ten or fifteen minutes he closes the whole of his feathers, and of a sudden he stretches himself, beats his wings in the air close to his sides, after the manner of the dung-hill cock, but more clearly and with lightening rapidity; these rapid strokes produce a sound resembling the rumbling of thunder in the distance. One may often hear it six hundred yards, and in clear weather with wind favorable it can be heard at a much greater distance."

Ruffed Grouse of age and experience, and in accustomed woodland wilds, are watchful, wary, and sagacious, and in times of danger well know how, when, and where to go; and will often conceal themselves and withhold the scent so that neither sportsman nor dog can find or get them up. But when young and especially when away from home, they become easily bewildered and act stupid and senseless and become subjects of easy capture. I knew one to be taken by a gentleman in this city, who found the bird standing on his window-sill apparently gazing around in wonderment at the new creation. Another was caught by a small dog; and another through the instrumentality of a common hen. The hen was discovered fighting, as the owner supposed a hawk, and he approached and caught the intruder, which to his astonishment proved a Ruffed Grouse. It would seem that many of the young birds when grown have a disposition to stray off into towns and cities and are taken in various ways, showing little or no disposition to use the means nature has given for escape—true these are the exceptions, and perhaps silly birds, deficient in the ordinary instincts inherited usually for self preservation. I mention this from the fact that I have quite a number of times found birds in the woods similarly stupid, and the sportsman knows they are not naturally nor generally stupid birds. Once while driving some hogs through a piece of woodland in the winter, I saw a bird light upon a limb of a small tree about ten feet from the ground. It sat there with head erect apparently unconcerned or having its attention upon some other object than myself. I approached and commenced clubbing it; the missiles passed in close proximity on all sides without making the poor creature move a muscle. I then picked up a long broken limb of a tree with which I easily knocked it over. At another time, some years after, while riding along a by-road leading through some timber, as I passed under the boughs of an oak bush I saw a Ruffed Grouse on a limb only a few feet above my head. The bird did not appear to notice my presence and I dismounted and killed it in the manner above described.

Like other aeronauts having great velocity, they lose their lives sometimes by coming in contact with objects in their flight, which they either do not see, or from which they are unable to turn their course in time to avoid disaster. Not long since, a lady in this city found a Grouse dead, and still warm, lying on the front door-step, having, no doubt, lost its life by flying against the building. And it is possible accidents of this kind may frequently happen to them in the woods. I am inclined to believe so from circumstances noted as follows: A few years since, while hunting, I flushed an old bird, without getting a shot at it, or otherwise giving it any unusual alarm. It went off through the timber at double railroad speed, and struck my friend, luckily, a glancing blow on the head, while he was standing still, awaiting my movements several hundred yards distant. This Grouse has one very characteristic trick—to lie close while a person is within a few feet of it, and when he has passed on some distance, to get up with a whirl and go off at full speed. Why this is occasionally done is quite inexplicable, for generally they will not permit their enemies to come within even a few yards of them, and, sometimes, are so wild that the gunner is unable to get within shooting distance.

In the early part of the season for shooting, the Ruffed Grouse is found in small flocks, but later, in the fall and winter the family associations appear to be broken up, and single birds, or at most two or three, remain together. This isolation is probably not with them a matter of choice; but as they have no call note, except drumming, when once dispersed, it is only by accident they are enabled to reassemble. The flesh is white and delicious. The young are generally full grown, well fledged, and ready for table use by the first of October. And from this time on through the season, the sportsman enjoys a pleasure surpassed by the pursuit of no other game. The dog must be well trained, having a nose that scents the birds at long distances, must make his approaches slowly, and when within fifteen or twenty yards of the Grouse, must stand staunch and immovable. And the sportsman must be skilled in handling the gun, and with coolness and quickness must direct his shot, or he will not receive the reward nor experience the full pleasure derived from this delightful recreation. Much, indeed, depends upon the composure and activity of the sportsman. A delay of an instant may put the game beyond reach or out of view. As the bird has usually a rise of ten to fifteen yards, and gets away at the rate of forty to fifty yards in a second of time, it is quite manifest if there is the least delay on the part of the gunner, his pellets even when well directed may not bring down the bird. For should the game spring ten yards in advance and fly straight off, and three-fourth of a second be consumed in taking aim, or in getting ready to fire, the charge will not overtake the object short of forty yards, and the bird at this distance will, in all probability, escape unharmed. As this bird usually flies in a straight line, if once flushed, it may be found and flushed again and again, each time offering better and better chances by its rising closer and flying slower, and once found it will most likely be bagged, unless it takes to a tree unseen. And even then if the dog is well up to its tricks, and you are pot-hunter enough to gratify and reward a faithful friend, you may secure it by shooting over a point high up in the branches of a tree. True, to shoot any thing sitting or standing, whether on a tree or on the ground, is not allowable by professional sportsmen unless to fill an empty camp-kettle, or to verify the assertion: "all may be killed that are found in a tree by shooting the lowermost one each time."

Fifty years ago Ruffed Grouse were quite numerous in this State. The country then was comparatively new, and much of the present farm-lands were covered with native forests and thickets bearing wild grapes, berries, and nuts, making the ranges more extensive and better fitted to their nature than now. In those days it was customary to shoot them at all seasons of the year. The old flint-lock rifle was the only kind of fire-arm handled by the hunter, and consequently these birds received no attention while in motion, but it was the pride of the amateur marksman to shoot off the head when found in a quiet position. The writer well remembers a small dog he had when a boy, the greatest pleasure of which was to put this bird up in the branches of a tree and keep it there by his attractive barking until assistance arrived. The bird would stand erect, with head elevated and motionless, as if in fixed amazement at the antics of the little feist. If a miss was made, the object of the shot would usually stay unmoved, taking notice of nothing but the whining, yelping noise of the dog, and sometimes three or four shots would take place before decapitation was accomplished.

Since shot-guns came into fashion in Ohio very many birds have been bagged by "still hunting," without a dog. This is accomplished by quietly and cautiously moving upon favorable points, thick clusters of undergrowth, such places as the bird usually spends its leisure hours through the day, and when close enough and in position to observe any moving body in the cover, the hunter stops, and remains a few moments perfectly quiet, with gun cocked and in position to shoot. If nothing is seen to move, the hunter gives a low, whistling note. If there is a bird concealed near by it will move from its hiding place, spread its tail, utter a low, piping noise, and take several slow and measured steps, preparatory to going off on the wing. It is at the first sight of the object that the trigger is pulled, which brings the responsive sounds made by the flutter of a dying bird in the bushes. I believe they are

never found huddled together so the pot-hunter can "smother" them as he does the Quail. Still two and sometimes three birds are close enough to receive parts of the same charge. In 1855 the writer was out after Wild Turkeys, in company with H. Clay Smith, of Cleveland, Ohio. It was a warm, still, bright day in October. Late in the afternoon we were moving slowly through the woods and thick undergrowth, within gunshot distance of each other, and to ascertain the location of my friend, I made a halt, and while listening for his movements, my attention was directed to an object resembling the head of a bird projecting above a large grape-vine, which lay upon the ground, about thirty yards distant, directly across the channel of a natural ditch. The ground was then dry, but the water after rains had washed leaves and left them lodged against the vine on the side on which I stood, showing an offset upon the opposite side, or wash-out from the water-fall over this little artificial dam. The longer I looked at it the more certainly it resembled the head of a Ruffed Grouse. To give satisfaction and to end up a day's hunt, I took deliberate aim at the object as if a bird was concealed behind the barricade, and fired. A Ruffed Grouse immediately went off from the spot, running, tumbling, and trying to fly, with one wing fractured. My little spaniel was near at hand and gave chase, but the bushes and briars were so very thick that the active little fellow did not, with all the assistance I could render, capture the bird until it got off, and that surprisingly quick, more than two hundred yards. Fatigued and warm I sat down on a log, and was examining the beautiful plumage of the Grouse, when my friend came up. I related the circumstances, and said the place was not examined after the shot was fired, and it was possible another bird might have been present and shared the charge. The proposition to walk back that way Mr. Smith would not entertain, saying he considered it in the wrong direction for one already fatigued. The matter was compromised by his agreement to remain until I returned. To my surprise, when within seeing distance, the light belly of a bird was visible on the ground near the little wash-out. It was lying on its back dead; and in great haste it was picked up, and with feelings elated I returned to my friend, who at once boastingly offered to bet a handsome consideration that the egg-bag performance could not be played upon him any farther. The writer replied it was an easy matter to go back again to the same place and get another bird if it was necessary to do so. After much controversy and boasting and counter boasting, I started back rather reluctantly, but not without hope, as I had omitted to look into the little wash-out, the very place I should have expected to find the game after the shot was fired. Sure enough, there was another bird in a sitting posture, with outstretched neck, and spread wings, in the bottom of the cavity under the grape-vine, "dead as a mackerel." The third bird was produced, winning the bet, which was, with all obligations growing out of the transaction fully and most satisfactorily canceled the next day at the dinner table.

Many pleasant occurrences connected with the pursuit of this bird might be selected from the folio of a lifetime. It is a sport full of memorable incidents, and when once enjoyed can never be lost from among the sunny associations of the past. Photographs of ragged mountains—rocky ravines—shady dells—running brooks—quiet streams—forests rich and ripe with every shade of color and tint of autumn—quiet secluded places, where nature reveals her sweetest charms—and scenery which in inimitable splendor mocks the artist's pencil and poet's pen, are indelibly fixed in the mind of the sportsman as the home and haunts of this most beautiful bird.

PLATE LX.

Fig. 7. ARDETTA EXILIS—Least Bittern.

The Least Bittern is the smallest of its tribe, and, to my eye, the most beautiful. It arrives in Central Ohio about the first of May. In the northern marshes it is a common summer resident; in other localities its presence is quite irregular, some seasons being plentiful about small grassy ponds, and then again not seen in such localities for several years. I have counted as many as twenty birds on the 10th of June, about a pond of six or seven acres in extent. Generally it is one of the shyest of birds and is but seldom seen. Frequently, in tramping through the Montezuma marshes at the foot of Cayuga Lake in New York State, where it breeds in the greatest abundance, I have found as many as ten or a dozen nests, all containing eggs, but have failed to see a single bird; and during many years experience among these marshes I have never seen more than eight or ten birds altogether. On the other hand I found two birds upon their nests last year in a little pond in Central Ohio. It is probable that two broods are frequently reared by a single pair during the summer.

LOCALITY:

A dense swampy tract overgrown with cat-tails and the various coarse swamp grasses, is the favorite breeding place of this Bittern. But the nest may be occasionally found in any small marshy piece of ground with aquatic reeds and grasses. Dr. F. W. Langdon found the Least Bittern abundant near Port Clinton, Ottawa County, Ohio, in 1880. Writing on the "Summer Birds of a Northern Ohio Marsh," he says of this species: "Quite common, frequenting and nesting among the 'deer-tongue' and 'saw-grass' at a considerable distance from land. Judging from the depth of water in situations where they were most numerous, we inferred that they spent much of their time clinging to tall aquatic grasses, and walking about on the lily 'pads' in search of food." In my experience the Least Bittern prefers to nest along the edge of the marsh, as indeed do most water birds, and even at times a nest is to be seen in a tussock of grass some yards inland.

POSITION:

Usually the nest is placed near the surface of the water in a cluster of reeds or a tussock of grass, and sometimes also, it is said, in a bush, though I have never seen one in this position. Many nests which I have found have been floating, a few have rested on the ground.

MATERIALS:

Contrary to the statements of many authors, sticks are seldom if ever used in the construction of the nest. Generally it is composed entirely of dry reed-stalks, lined with thin flat leaves, and possibly inter-mixed with coarse grass. Many of the reeds are often bent down and fastened together without being broken, so as to form a sort of platform on which the nest proper rests. Fresh green stalks are seldom

seen in the structure. The ordinary diameter of the nest is about eight inches. Dr. Langdon, in the article quoted from above, says of this nest: "Rather bulky often for the size of the bird, composed entirely of 'saw-grass,' a platform being constructed by bending a number of green blades toward a common center so that they cross each other at a height of fifteen or twenty inches from the water; this platform is slightly depressed in the center, and the depression lined with a few blades of dried grass of the same species as that used in the foundation." With the exception of being smaller the nest is very similar in position, construction, and materials to that of the Florida Gallinule, and can be found without difficulty in swamps which these Bitterns frequent.

EGGS:

The complement of eggs varies from three to five, usually four is the number. The second laying generally contains but three. They measure from 1.16 to 1.27, in long-diameter, and from .94 to 1.00 in short-diameter. A common size is about .98 x 1.20. Like all the eggs of this genus they are oval in form. The ground-color of the shell is pale blue, without spots. The color fades quite rapidly when the shell is exposed to the light after the eggs are blown, and less rapidly, but none the less surely, when kept in the dark, to a dull milky white.

DIFFERENTIAL POINTS:

The nest and eggs of the Least Bittern when together can always be readily recognized by the characteristics stated above. The eggs when out of the nest can scarcely be confounded with those of any other bird except perhaps those of the two Cuckoos; from these they may be distinguished generally by the smoother surface, rounder form, and somewhat fainter tint of shell.

REMARKS:

Fig. 7. PLATE LX represents three eggs of the Least Bittern, taken June 10th, 1884, from two nests near Circleville, Ohio. They show the common sizes, shapes, and color of shell when freshly blown.

In regard to the domestic life of this diminutive Bittern I know but little. I have often encountered it during spring migrations as well as during the building season, and at all times it seems to be the same quiet, melancholy, half stupid creature. At the time of mating it is the most animated, and may often be seen climbing about the stems of the water-plants like the Starling. It flies with like motions to those of the larger members of its family, and as silently as a bat. In the day-time it will seldom fly but a few yards, and with a little perseverance it may be run down and captured when found on dry land. I have had several specimens alive, and have endeavored to discern some interesting trait of character, but in vain. The last one I caught was a perfect beauty in plumage, but after keeping him a few days I concluded to give him his liberty. At dusk one pleasant evening I tossed him in the air; he started off bravely and was soon out of sight. The next morning his head and some wing feathers were brought to me by a neighbor, all that the house-cat had left of this beautiful little bird.

PLATE LX.

Fig. 8. ASIO AMERICANUS—American Long-eared Owl.

The Long-eared Owl confines itself chiefly to dense woods, and consequently, even if it were as plentiful, it would not be as well known as many of its brethren. Its nest and eggs are as common in collections as those of almost any other species of Owl. I have found at least two nests of this bird to one of the small Owls. This is due to the fact that the nest is quite exposed, and also to the fact that the bird has a habit of craning its neck over the side of the nest, thus establishing beyond doubt that it is not a set of Crow's eggs that will reward the labor of climbing. Hence the nest is seldom passed by without yielding its quota to the Oölogist's collection. The nest is built and the eggs deposited about the same time as with other Owls.

LOCALITY:

The nest is situated in comparatively retired woods, either on high or low ground. Upland timber seems to be preferred so far as my observation extends, but some of the best authorities give preference to swampy woods. Probably it makes little difference to the Owls, provided the wood is dark and quiet. Usually the nest is in a tree, but it may be upon the ground, in a bush, or even upon the top of a low stump.

POSITION:

I have never seen a nest except in a tree, generally about fifty feet from the ground and placed upon a horizontal limb close to the main trunk. Dr. Coues states that it is sometimes placed in a hollow tree.

MATERIALS:

The nest is usually a very loose affair of sticks, lined with grass or leaves, and may be occupied for a number of years with a little repairing each spring.

The above remarks refer to nests constructed by the Owls. Now it is a very common occurrence with this species as with others of the family, that instead of building their own nests, the birds select that of a Crow or Hawk in which they deposit their eggs and rear their young, and no matter how shabby the domicile is, they seldom expend much if any labor upon it.

EGGS:

The complement of eggs varies from three to six, the former being the commonest number. They are pure white, as are those of all Owls, rather smooth of surface, and almost perfectly elliptical in outline. They measure in long-diameter from 1.58 to 1.80 and in short-diameter from 1.24 to 1.30. A common size is about 1.70 x 1.25.

DIFFERENTIAL POINTS:

See Little Screech Owl.

REMARKS:

The three eggs illustrated were selected from four sets, all of which were found in the northern counties. They show the ordinary shapes and sizes.

The Long-eared Owl, as stated in the beginning of this sketch, is exclusively a woods bird, being seldom, I might almost say never, seen in the open. That the species is very common in some localities of the United States there can be no doubt. H. D. Minot says: "It is, perhaps, the most numerous of American Owls." Its habits of life and silence contribute to make it apparently much more scarce than it really is. In Ohio, especially in central and southern, it undoubtedly is very scarce. During the past fifteen years, much of which time I have spent in the woods, I have never encountered but one of these Owls, and up to the time I took up residence in New York State I was entirely unacquainted with its breeding habits, although familiar with nests and eggs of most other Owls. There is no doubt but that this species is far more common in the east than in the western and middle states.

It is possible to pass close by these birds in the woods and yet not perceive them, as they sit very quietly when one approaches, being either too stupid or too cunning to fly. The whole nature of the bird is retiring and quiet, and in captivity it maintains the same traits, seldom showing a disposition to fight or bite. It is more truly nocturnal than most of the small Owls, hunting entirely by night. I have never heard it utter a cry, nor have I, while camping in such places as it usually inhabits, ever heard a cry that did not bespeak the author of it too plainly to entertain the suggestion that the sound might have come from one of these birds. With the exception of their love song, which all birds seem to have, it is, I believe, mute. C. J. Maynard thinks he has heard them utter a cry during the breeding season, but is not sure, and he thinks it highly probable that they have characteristic calls as well as a love song. H. D. Minot, in speaking of the species, says: "I have never heard them utter any notes, and they are probably silent except during the season of love." Audubon, however, states: "When camped in the woods I have frequently heard the notes of this bird at night; its cry is prolonged and plaintive, though consisting of two or three notes repeated at intervals." Beside such testimony all negative observations must be taken with great caution.

PLATE LX.

Fig. 9. PHILOHELA MINOR—American Woodcock.

This splendid bird comes from the south with the first approach of spring, and remains until the frosts harden its feeding grounds. In the northern counties it is absent but a few months in the coldest years; while farther south, in mild winters, it scarcely goes out of the State.

It builds in March or April, and probably, sometimes in February. Two broods are usually reared during the season.

LOCALITY:

Upon their arrival in spring, Woodcock frequent wooded slopes, and damp, dense woods, either upland or lowland; and in such localities they find suitable nesting sites.

POSITION:

The nest is situated upon the ground at the root of a tree or stump, beside a log, or even in an entirely open space between large trees. The nest rests directly upon the ground, sod, or decayed leaves natural to the spot, with no effort at concealment.

MATERIALS:

It is composed chiefly of dead leaves, as found fallen from trees in the vicinity, and is a very insignificant affair, yet one which answers the purpose well, as it resembles exactly the surroundings, in fact, is part of them; and since the young, like Quail, run about as soon as hatched, an elaborate structure is not necessary for their comfort. The quantity of leaves in the nest is quite variable. If the sod is well covered with them the bird may simply select a matted bunch, and upon this deposit her eggs. At other times she will arrange a hatful of oak or other leaves in a little depression, and rest satisfied with this. There are no outlines to the structure which are of any value for measurements.

EGGS:

Four eggs are the usual number in a set. I have never found more than this, but I have seen an old bird with five young ones. As is usual, the second set probably contains one less than the first. The ground-color of the shell is brown, of different shades in different sets. In some it is light Vandyke brown; in others it is a moderately dark tint of the same color; in others it is a light shade of bistre; while in others it is a yellowish-brown, such as may be formed with bistre and yellow ochre. The markings consist of numerous blotches, spots, and speckles, often confluent, distributed most numerous about the larger end. The deep shell-marks appear purplish or neutral tint, while the surface marks are of various shades of the ground-color, always of course deeper in tint. When placed upon a bed of winter-beaten oak leaves, the colors of the eggs and leaves are so similar that I know of no eggs which

offer a better example of protective coloring. In shape the eggs are not very different from common hen's eggs. They measure from 1.10 to 1.20 inches in short-diameter, and from 1.44 to 1.65 in long-diameter. A common size is about 1.18 x 1.55.

DIFFERENTIAL POINTS:

The eggs are so distinctive in marking and coloring, when taken together with their size, that they can not be mistaken for those of any other bird. The nest amounts to but little by itself and can only be saved with great care.

REMARKS:

The eggs figured, Fig. 9, PLATE LX, were taken near Cireleville, on the 28th of March, 1878. They had been sat upon four or five days. The three show the usual shapes, sizes, ground-colors, and colors and forms of markings.

The American Woodcock is quite universally distributed over the United States, and in Ohio is quite plentiful, though by no means as numerous as in years gone by. It is noted for its seclusiveness, and no doubt finds in solitude all the charms that sages have seen. If this characteristic is an evidence of wisdom, verily the Woodcock is a Solon among the feathered tribes, for it seeks the most solitary and unfinished spots on earth, places where the soil is soft and moist; and here, with no near companion, it passes most of its life in satisfactory if not sweet meditation. According to some the male is given to music, and has a song as varied as that of insessorial birds, while others assert the contrary. Mr. Charles Hallock, in "Sportman's Gazetteer," says: . . . "By the first of April, on any clear moonlight night, at all hours, the male may be heard from every quarter chanting his weird and unmusical song to the object of his affections. This note so closely resembles that of the Nighthawk as to be easily mistaken for it."

After the 4th of July, the law of Ohio permits the killing of Woodcock. It would be far better if the close season extended until the middle of August. At this season of the year the birds resort to timbered islands that are damp and overgrown with horse-weeds, nettles, elders, and creeping vines. They are also found along the mucky banks of willow-bordered streams and similar places, and owing to their inexperience and want of wing power are easily killed. Often in July I have flushed old birds with half grown young, and even the oldest birds of the year are hardly full size and strong flyers before September.

The flesh of the Woodcock is very highly esteemed; in fact, it ranks first in flavor among all game birds. A single bird served for the table brings from one dollar to one dollar and fifty cents, at any fashionable restaurant, and even at this price they are difficult to obtain. Unquestionably the Woodcock is a fine table bird, especially in early fall, after it has left its summer feeding grounds for the ditches and springs of upland fields, but to my taste there are other birds superior even then. I make this statement with some trepidation, knowing that such belief is the rankest epicurean heresy.

The cocker spaniel is presumably the dog to hunt Woodcock with, but here again I must declare my infidelity by preferring a pointer. Poor Greek! Was there ever another such dog? For twelve years he was my constant companion in the field, and such work as he would do! Grouse, Quail, Doves, Snipe, Ducks, Woodcock, he understood at once what was demanded of him. In the thickest possible cover he would point the Woodcock with the certainty and stanchness that he would a Quail in open stubble. I have killed hundreds over him, and he was ever the same, faithful and true, and but for the dastardly act of some townsman he might be living to-day and eager for the fall sport. The law of Ohio does not recognize a dog as property, although it taxes him. Hence, any cowardly person can, unobserved or even openly, give poison, without fear of punishment.



Pl. LXI Fig. 1. LANIVIREO FLAVIFRONS.
YELLOW-THROATED VIREO.

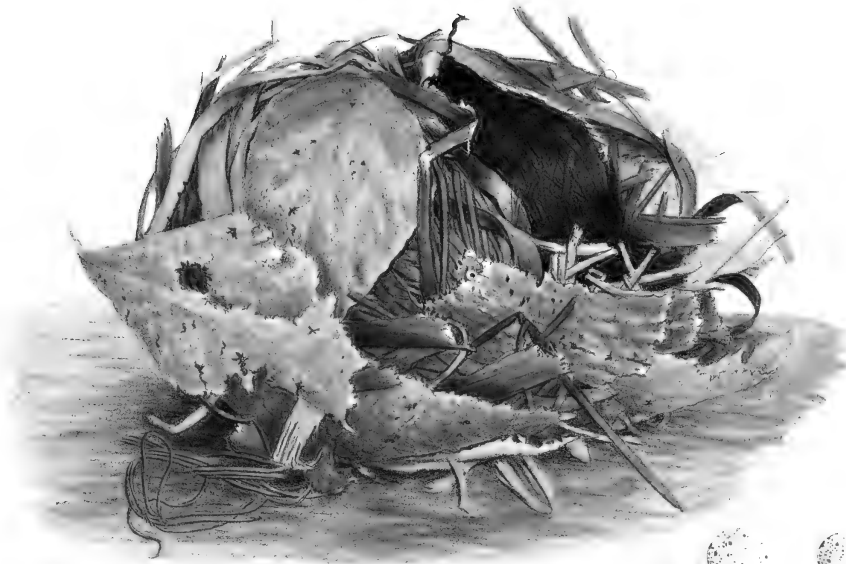
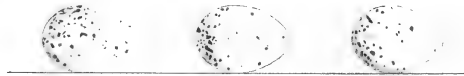


Fig. 2. HELMINTHOPHAGA CHRYSOPTERA.
GOLDEN-WINGED WARBLER.

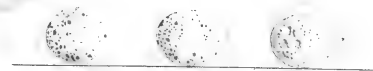


PLATE LXI.

Fig. 1. *LANIVIREO FLAVIFRONS*—Yellow-throated Vireo.

The Yellow-throated Vireo arrives and departs about the same time as the other species of its family. It builds its nest in the latter part of May or first of June, and not infrequently in July it builds a second time.

LOCALITY:

An orchard or shade tree in a lawn, either in the country or in town, is often chosen for the site of the nest; but more commonly a forest tree in large woods is preferred.

POSITION:

The nest is pensile, and is generally placed at the bifurcation of a small horizontal branch, or in the angle where a small twig shoots from a horizontal branch. Its height from the ground is from five to twenty feet.

MATERIALS:

A nest before me is composed externally of pieces of hornets' nest, vegetable down, lichens, strips of the inner bark of some weed, web from the common plant louse which infests the maple trees, and spider-web felted together in a promiscuous but firm manner. In several places of small dimensions the lichens cover the exterior. Within this purse-shaped cavity is a thick layer of bleached blades of blue-grass. The nest is firmly attached to its two supporting twigs by its external layer, which is wrapped around and bound fast to the branches with web. Its diameter is $3\frac{1}{4}$ inches; depth, $2\frac{1}{4}$ inches; diameter of cavity is $1\frac{1}{2}$ inches; depth of cavity, $1\frac{1}{3}$ inches. Dr. Brewer, writing of this nest, says, page 380, Vol. 1, "North American Birds:" "Their nests, built usually in low and rather conspicuous positions for birds of this kind, occur most frequently in gardens and orchards. One of these, found suspended from a moss-covered branch of an apple-tree in Roxbury, may be taken as typical of its kind. Its rim was firmly bound around the fork of a branch by a continuation of the materials that form the outside of the nest itself. These are an interweaving of spiders' webs, and silky threads from insect cocoons, largely intermingled with mosses and lichens, and thus made to conform closely in appearance to the moss-grown bark of the tree. The under portion of the nest is strengthened by long strips of the inner bark of the wild grape. Within is an inner nest made of fine grassy stems and bark. It forms exactly a half sphere in shape, is symmetrical, and is very thoroughly made. Its diameter is four, and its height two and one-fourth inches.

"Mr. Nuttall describes a nest of this kind, found by him suspended from the forked twig of an oak, near a dwelling-house, as coated over with green lichens, attached very artfully by a slender string of caterpillars' silk, the whole afterwards tied over by almost invisible threads of the same, so

nicely done as to appear to be glued on. The whole fabric was thus made to resemble an accidental knot of the tree, grown over with moss."

The few nests of this species which I have seen have corresponded closely with the first two described above. It is to be expected that occasionally a nest will be found which is elaborately covered with lichens.

EGGS:

The complement in a set varies from three to five. Five are seldom found, however. They measure from .82 to .95 of an inch in long-diameter, and from .59 to .66 in short-diameter. A common size is about .61 x .88. The ground-color of the shell is pure white. The markings consist of blotches, spots, and speckles of a very dark brown, scattered sparingly over the shell, generally, however, decidedly the most numerous at the base. Occasionally a few spots are confluent. Deep shell-marks are gray, and sometimes nearly as plentiful as surface marks. Dr. Brewer, page 381, Vol. 1, "North American Birds," says: "The ground-color is white, often with a very perceptible tint of roseate when fresh. In this respect they differ in a very marked manner from the eggs of any other of this genus, except, perhaps, the *barbatula*, and may thus always be easily recognized. They are more or less boldly marked with blotches of a dark roseate-brown, also peculiar to the eggs of this species, though varying greatly in their size and depth of color."

DIFFERENTIAL POINTS:

But four of the Vireos have so far been found breeding in Ohio. Of these the Red-eyed is the most plentiful. The Warbling Vireo is nearly as numerous, while the remaining two are about equally scarce. It is not a very difficult task to designate substantial differences between the nests and eggs of these species when they are compared with each other, or even with certain exceptions, to tell their nests and eggs at sight, in spite of their similarity. The points of variance between the first two species mentioned have already been given. It remains only to speak of the nests and eggs of the White-eyed and Yellow-throated Vireos when compared with the other two. The nest of *flavifrons* is distinctive and can always be recognized from that of any of the Vireos, as well as from that of any other bird, by its being a lichen covered pensile nest. The nest of *noveboracensis* is usually recognizable by its dimensions. See page 167.

The eggs of the Vireos stand in size in the order named below:

L. flavifrons—long-diameter,	.82 to .95;	short-diameter,	.59 to .66.
V. olivaceus—	" .75 to .95;	"	.52 to .66.
V. noveboracensis—	" .73 to .83;	"	.50 to .60.
V. gilvus—	" .68 to .70;	"	.51 to .60.

The ground-color of all is the same. The size, shape, and color of markings is also about the same; there is though a slight difference in their quantity, *flavifrons* probably containing the most, and *noveboracensis* the fewest, while *gilvus* contains more than *olivaceus*.

REMARKS:

The nest and eggs illustrated, PLATE LXI, Fig. 1, were found the 26th day of June, 1882. The eggs are a little smaller than the average, but they show well the variations in markings. They measure respectively, .82 x .59, .84 x .60, and .84 x .60. The nest was built in a little wood adjoining an orchard, in a horizontal fork about eight feet from the ground. It is typical in size, shape, and position, but is probably more elaborately covered with lichens than is usual.

PLATE LXI.

Fig. 2. *HELMINTHOPHAGA CHRYSOPTERA*—Golden-Winged Warbler.

According to "North American Birds," the Golden-winged Warbler is nowhere a common species, being but occasionally met with from Georgia to Massachusetts, and from New Jersey to Missouri and Wisconsin. In Ohio it is certainly rare. It has been found as early as the 15th of May. Its time of departure is unknown. It builds the last of May or first of June, and probably rears but one brood during its yearly visit to the State.

LOCALITY:

Woodlands, bushy pastures, and small clumps of timber, provided the soil is damp, are the most frequented nesting places. According to Dr. Wheaton, swampy places are usually selected.

POSITION:

The nest is built at the root of a bush or young tree, or in a tussock of grass or weeds, and is generally supported by several upright stems as well as by resting upon the ground, dead leaves, or such debris as covers the site. Mr. Wm. K. Limpert, of Franklin County, found a nest of this species resting on the ground under the broad leaf of a skunk cabbage.

MATERIALS:

The only nest which I have seen is before me. It is the one illustrated on PLATE LXI, Fig. 2. It was situated under a little bush in a low piece of ground. In diameter it is about four inches, in depth about five inches. Its inside diameter is about two and one-eighth inches, its inside depth is about three and three-quarters inches. It rested upon a deep layer of beech leaves, and leaves were piled up around it in a seemingly careless manner, as if blown by the wind. When the leaves are taken away, the nest proper is seen to be made of long strips of grape-vine bark, weed-fibres, and pieces of beech leaves, and lined with split grasses. The materials are very loosely woven into a purse-like shape, the rear wall being an inch or more higher than the front portion.

EGGS:

Four or five eggs compose a set. The ground-color is white, when blown, sparsely marked with brown spots, dots, and speckles, which incline to form a wreath at the base. They measure, according to Maynard, from .50 to .55 in short-diameter, and from .66 to .67 in long-diameter. According to Dr. Brewer, they vary in short-diameter from .49 to .53, and in long-diameter from .63 to .70. Five eggs belonging to the nest illustrated, measure as follows: .49 x .68, .51 x .68, .52 x .68, .52 x .67, and .53 x .69 of an inch. Before they were blown the shell appeared decidedly pink. The markings are Vandyke brown and bistre, confined chiefly to the base, where they generally form a wreath. One egg is quite thickly speckled

from point to base, and besides the ordinary spots, there are about the crown several large irregular blotches, which have the appearance of being faded. The remaining four eggs are very much alike, being marked sparingly from point to base with the minutest speckles, some of which are beneath the surface, while at or about the base occur small blotches and spots, which either form a ring or make a group at the axis.

DIFFERENTIAL POINTS:

See Table.

REMARKS:

J. Warren, in "Bulletin of the Nuttall Ornithological Club," Vol. I, pages 6 and 7, says: "The first authentic nest found in this section of the country (Massachusetts) was that collected by Mr. C. J. Maynard, June 12, 1869, and admirably described by him on page 100 of the "Naturalist's Guide." This nest was placed on a slightly elevated tuft of moss, near a swampy thicket, within a short distance of a travelled road, and contained four eggs, and also one of a Cow Bird (*Molothrus pecoris*), which were within a few days of hatching. Since this nest was found there have been no others taken, to my knowledge, until the past year, when three were discovered; one each by my friends, E. B. Towne, Jr., and W. W. Eager, who have kindly allowed me to use their notes, and the third by my brother and myself.

"We were out collecting on the afternoon of June 8th, 1875, and while passing through a strip of swampy land on the outskirts of a small wood, flushed a bird from under a plant known as 'Skunk Cabbage' (*symplocarpus fetidus*).

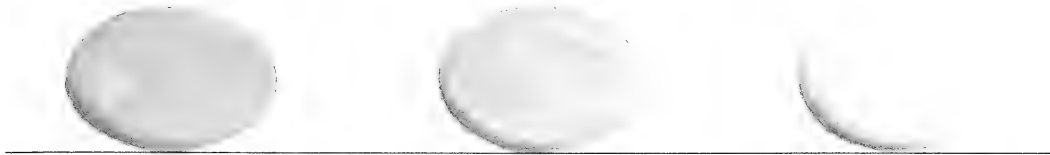
"Upon searching we found the nest concealed by the large leaves of the plant. It was raised about two inches above the wet ground by dead oak and maple leaves, which were quite damp. The owner soon came back, and hopping excitedly from branch to branch of an alder thicket, a few yards away, almost continually uttered a sharp chirp of alarm, betokening her strong dislike to the intruders; but, strange to say, her mate did not make his appearance, although we could hear him distinctly zee-zee-zeeing a few rods away. As it was fast growing dark, and feeling satisfied she had laid her set, we shot her.

"The nest, which closely resembles that of the Maryland Yellow-throat (*Geothlypis trichas*), is composed outwardly of dry oak and maple leaves, interspersed with long strips of the outer bark of the grape vine; and is lined with fine fibrous shreds of the same reddish tint, interwoven with one or two very small pieces of dry grass. The measurements are as follows: Height, 2.75 inches; width, 4.25; diameter inside, 2.30; depth inside, 1.60.

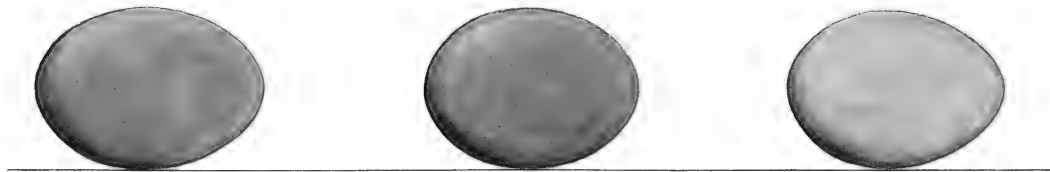
"The eggs are three in number, two pure white; the third sparsely spotted on the larger end, and measured respectively, .69 x .53, .68 x .51, and .65 x .49.

"The following is an extract from Mr. Towne's Journal: 'While out collecting early in the morning of the 29th day of May, 1875, as I was walking up a hillside through small white birches, saw a Golden-winged Warbler within twelve feet of the muzzle of my gun; was about to shoot, when I noticed a small straw or dry blade of grass in her mouth. The thought of finding her nest induced me to watch closely. She soon flew and alighted in the centre of an old cart path. I went to the spot and was delighted on finding in the center of a small tussock of grass the commencement of a nest. Went to the place the next day and saw the female at work; did not go again for two days, when there was one egg. On June 5th I took the nest with four fresh eggs. By creeping up carefully and putting my hand over the nest, succeeded in catching the female. Saw the male soon after, but he was exceedingly shy.'

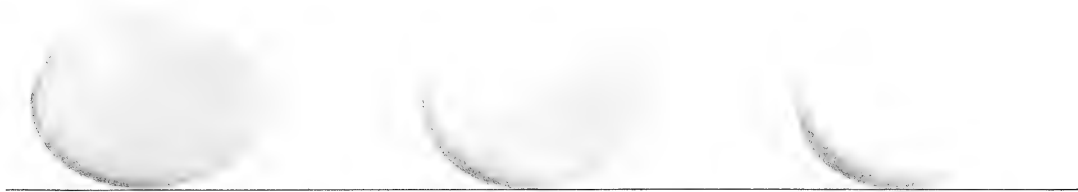
"In structure the nest closely resembles mine, but is a little narrower and deeper inside. It measures in height, 3.00 inches; width, 3.80; diameter inside, 1.90; depth inside, 2.00. The eggs are white, faintly, spotted with red on the larger end, and measure .72 x .52, .70 x .56, .70 x .48, and .68 x .58 inches."



1.



2.



3.



4.

PL. LXII.

Fig 1. *QUERQUEDULA DISCORS*.
BLUE-WINGED TEAL.

Fig 2. *BOTAURUS LENTIGINOSUS*.
AMERICAN BITTERN.

Fig 3. *AIX SPONSA*.
WOOD DUCK.

Fig 4. *ANAS BOSCAS*.
MALLARD.

PLATE LXII.

Fig. 1. QUERQUEDULA DISCORS—Blue-winged Teal.

This beautiful little Duck is a very common migrant, and in the northern part of the State is a not infrequent summer resident. It arrives in Central Ohio about the first of April, and often remains until late in May. In the fall it leads the great army of Ducks on their way south, arriving about the first of September. It builds in June, and rears but one brood during the season.

LOCALITY:

It is probable that in the early settlement of Ohio this Teal bred in suitable localities throughout the State; but civilization has forced it to the north until its only breeding grounds, so far as I can learn, are in the uninhabitable marshes of the lake counties, and even here its numbers are very limited. Mr. J. B. Porter, of Glendale, Ohio, in June, 1880, found it breeding in the Ottawa county marshes.

POSITION:

The nest is located either in the marsh or about its edge, and is concealed by the surrounding vegetation. I have never found this nest, nor can I find an accurate account of it. The above brief statement must therefore suffice.

MATERIALS:

Grass, weeds, and feathers from the builder compose the materials of the nest.

EGGS:

The number of eggs in a set varies from six to ten. The shell is quite smooth, but not glossy, and is a rich cream color or light buff. Occasionally there are cloudy patches of neutral tint at various parts of the shell. They measure in long-diameter from 1.76 to 1.90, and in short-diameter from 1.28 to 1.34. A common size is about 1.30 x 1.85. C. J. Maynard gives their dimensions as between 1.30 and 1.35 in short-diameter, and between 1.90 and 1.95 in long-diameter.

DIFFERENTIAL POINTS:

See Mallard Duck.

REMARKS:

The three eggs illustrated, Fig. 1, PLATE LXII, were selected from a set of eight eggs taken in Dakota in 1883. They show the various shapes and tints of the complement. Although unfamiliar with the nesting habits of the Blue-winged Teal, I am well acquainted with it as a game bird, and several times have thought I was about to find it breeding near Circleville. I have known the birds to mate

and remain about a small pond until in June; but about the time a nest was to be expected, the Ducks would leave.

These birds are especially fond of muddy pools and ponds overgrown with lilies and rushes. During the spring they frequent the river bottoms, and take great delight in muddy sloughs after freshets. In the fall they feed about ditches and stagnant ponds. They often congregate in large flocks of twenty-five or more, and during midday enjoy sitting on the edge of a mud-puddle in perfect quiet, at which time one can walk close to them without noticing their presence, so closely do they sit to the ground and so protective is their coloring.

Of all our Ducks the Teal is perhaps the most unsuspecting or unintelligent, or both, for they will usually allow a gunner to walk close to them, without taking to wing, and if they show any alarm it is to their disadvantage, for when frightened they huddle together so closely that twenty birds will scarcely occupy a square yard of space. The experienced gunner knowing this peculiarity watches his opportunity and is often enabled to kill a dozen or more birds at one discharge of his gun. Certainly a cruel and unsportsman like method of procuring game, but I observe that few hunters despise such an opportunity. When surprised and mistreated in this way, the uninjured Ducks take wing, but being loth to leave their dead and wounded companions, or else not comprehending the situation, fly off a short distance and circling about will relight in the very same place or hover about the hunter time and again, until several more shots still farther decimate their numbers. At last the few remaining seem to comprehend that they are in danger and hastily fly away. Often however, they will return the next, and on following days if undisturbed. However easy it may be to kill these birds during their resting period of the day, the sportsman will find it an entirely different matter to shoot them about dark when coming into their roosting places. At this time they fly like an arrow, and a single bird will pass any but the very best marksman. When properly cooked, the flesh is generally excellent, though sometimes it is oily and strong. Birds that have become too fat are especially fishy. Nearly all Ducks as they come to us, are fatter in the fall than in the spring, and are also tenderer and more edible, but the Teal is better in the spring, because at this time they are not so fat. Everywhere they are much prized as table birds, and when in proper form, this praise is very just.

Like all game birds their numbers are becoming rapidly lessened. Indeed they are but poorly prepared to withstand the everlasting firing of the standing army of hunters equipped with deadly breech-loaders. Nearly every pond is now guarded; nearly every mud-hole has an armed sentinel, and the day is not far distant when this fine little Duck will be as rare as it was at one time common. Such seems to be the fast approaching fate of all our highly prized species. Like the Indian, I look back over years past and deplore the inroad of civilization. My "Buffalo" were the Duck; my "Deer" the Turkeys, the Ruffed Grouse, and the Quail. My "hunting-grounds," the weedy stubble and the unmo-lested wood. Nearly all of these are gone, and gone never to be restored. I can well fancy the deep emotion, the heart-felt wrong of Nature's child, as he witnessed the advance of the tide of empire.

PLATE LXII.

Fig. 2. *BOTAURUS LENTIGINOSUS*—American Bittern.

The American Bittern arrives in the southern part of Ohio early in March, on its way to northern breeding grounds. A few individuals find suitable localities in the southern counties, but its occurrence in summer south of the lake marshes is irregular and uncertain. In the fall it is often seen about swampy places, and if undisturbed remains until cold weather. Like other members of its tribe, it is a morose and solitary bird, and is seldom seen unless scared from its haunts by the intrusion of a stranger. It builds its nest about the middle or last of May, at which time it is extremely shy. But one brood is probably reared by a single pair during the season.

LOCALITY:

Swampy districts overgrown with long grass, bushes, and weeds, and retired islands, with abundant rank vegetation, are the favorite nesting localities. The nearer overflowed such an island may be, without being actually under water, the better pleased is the bird. At least spots of this description contain the most nests.

POSITION:

The nest is situated on the ground, often but a few inches above water, and occasionally is built in shallow water, and is concealed from view by the surrounding bushes, grass, and weeds.

MATERIALS:

The nest is composed of sticks, often some of these are quite large for the purpose, with perhaps a rude attempt at lining with coarse grass and weeds.

EGGS:

The eggs are from three to six in number. In color they vary from dingy greenish-blue to olive-brown, and are unspotted. They measure from 1.95 to 2.20 in long-diameter, and from 1.40 to 1.60 in short-diameter. Mr. C. J. Maynard gives their dimensions as follows: Long-diameter, 2.10 to 2.25; short-diameter, 1.65 to 1.80.

DIFFERENTIAL POINTS:

The size and color of the Bittern's eggs will usually suffice to distinguish them at once. When together with the nest identification is certain, as there is no other species laying eggs of this size and color, which builds a similar nest.

REMARKS:

The three eggs figured, Fig. 2, PLATE LXII, were selected from several sets, and show the common sizes and various colorings met with in eggs which have been blown for several years.

The American Bittern, though shy and retiring, always makes his presence known, and any one who has lived long in the neighborhood of a swamp inhabited by these birds is familiar with their peculiar and gloomy cry, not at all unlike in sound, some ancient bullfrog; not that the one could be mistaken for the other, but that the same booming, hollow sound characterizes them both.

For many years I looked in vain for the nest of one of these birds, though living on the borders of a swamp inhabited by them. I think now that I was in the habit of seeking them on ground that was too high and dry, for of late years they seem easy enough to discover, though the birds are not as plentiful as heretofore. They are somewhat gregarious in their habits, at least at nesting time, in so much that when the birds are at all abundant, if one nest be found others are sure to be near by. I once had one of these birds for a long time in captivity, and some of his antics were very amusing. Once or twice I caught him in the act of uttering his strange booming cry, when he would squat quite close to the ground, draw in his neck as if gathering a long breath, then straightening himself up and stretching his neck, his throat would swell out and forth would come the strange call. This bird was omnivorous, at least he soon became so, and would eat a meal of potatoes, bread, and other vegetable food with as much gusto as that of fish or meat.

As regards the American Bittern as an article of food, Frank Forester says: "Though a very common and extremely beautiful bird, it is the object of a very general and perfectly inexplicable prejudice and dislike, common it would seem to all classes. The gunner never spares it, although it is perfectly inoffensive; and although the absurd prejudice to which I have alluded, causes him to cast it aside, when killed, as uneatable carrion, its flesh is in reality very delicate and juicy, and still held in high repute in Europe; while here one is regarded very much in the light of a cannibal, as I have myself experienced, for venturing to eat it. The farmer and the boatman stigmatize it by a filthy and indecent name. The cook turns up her nose at it, and throws it to the cat; for the dog, wiser than his master, declines it—not as unfit to eat, but as *game*, and therefore meat for his masters. Now the Bittern would probably not be much aggrieved at being voted carrion, provided his imputed carrion-*dom*, as Willis would probably designate the condition, procured him immunity from the gun. But to be shot first and thrown away afterward, would seem to be the very excess of that condition described by the common phrase of adding injury to insult.

"If, when struck down from his pride of place by the crooked-beaked blood-hound of the air, as in days of old, his legs mercilessly broken, and his long bill thrust into the ground, that the falcon might dispatch him without fear of consequences, and at leisure, it was doubtless a source of pride to him, as to the tortured Indian at the stake, to be so tormented, since the amount of torture was commensurate with the renown of the tortured; besides—for which the Bittern was, of course, truly grateful—it was his high and extraordinary prerogative to have his legs broken as aforesaid, and his long bill thrust into the ground, by the fair hand of the loveliest lady present—thrice blest Bittern of the days of old.

"A very different fate, in sooth, from being riddled with a charge of double Bs from a rusty flint-lock Queen Anne's musket, poised by the horny paws of John Verity, and then ignobly cast to fester in the sun, among the up-piled eel-skins, fish-heads, king-crabs, and the like, with which, in lieu of garden-patch or well trained rose-bush, the south-side Long Islander ornaments his front door-yard, rejoicing in the effluvia of the said decomposed piscine *exuvia*, which he regards as 'considerable hullsome' beyond Sabæan odors, Syrian nard, or frankincense from Araby the blest!"

When wounded, it makes vigorous resistance, extends its wings, erects the feathers on its head and neck, and assumes a fierce warlike expression, and will attack in self defense man or dog, and with deadly aim directs the blows of its sharp pointed beak for the assailant's eyes.

PLATE LXII.

Fig. 3. AIX SPONSA—Wood Duck.

The Wood Duck, or Summer Duck, is a common summer resident throughout the State. It arrives in March and remains until November. But one brood is generally reared during the season.

LOCALITY:

The nest is placed in a tree along the bank, or in the neighborhood of a marsh or small pond. The large sycamores which grow on the river islands, or on the bank of a stream near the mouth of a small creek, or beside a lagoon are favorite localities.

POSITION:

A natural cavity in the trunk or limb of a tree, or an artificial hole long since abandoned by its owner, is the customary place for the nest. The structure rests at the bottom of the cavity in the case of a hole in a perpendicular trunk, and upon the floor of the cavity in the case of a hollow, horizontal limb. Its distance from the entrance in the latter instance may be five or six feet, or more, according to conditions and the fancy of the birds.

MATERIALS:

The materials are sticks, straws, pieces of bark, grass, weeds, feathers, and down, in varying proportions, the softer materials constituting the lining.

EGGS:

The complement of eggs varies from six to twelve. They are elliptical in form, creamy brown, often slightly greenish in color, and quite smooth of shell. They measure in long-diameter from 1.70 to 2.10; and from 1.50 to 1.60 in short-diameter. C. J. Maynard gives the dimensions at 1.05 x 1.55, to 1.15 x 1.65.

DIFFERENTIAL POINTS:

See Mallard Duck.

REMARKS:

Fig. 3, PLATE LXII, represents three eggs of the Wood Duck of the common sizes and shapes. The coloring is that of eggs which have been blown about two years.

The Wood Duck ranges throughout the United States; but it is much more plentiful in some sections of country than in others. In Pennsylvania, New York, Indiana, and Ohio it is the only native Duck that is at all common. The male is the handsomest of all our summering birds, and rivals in brilliancy of plumage many of our most conspicuous song birds. Of perfect form and splendid action he has but to

be seen to be admired. Excelling the spectrum in gorgeous tints, he moves, a perfect rainbow of color, with equal ease and grace among the lilies of the pond or branches of the forest tree. Upon his head he wears a crest of iridescent green and purple, and narrow, parallel, curved, white, superciliary, and post-ocular stripes. His throat is pure white, irregular in outline, but sharply defined. His breast is brown madder, spotted with irregular white patches, while the sides of his body are finely vermiculated with rich blue-black, and form a striking contrast with the wings. His feet are pale brown or flesh-tint, and his bill, which contains two red patches, is tipped with dark blue, and his iris is red. The female and young are modestly clothed in grays and dull white, with slight iridescence on some of the feathers.

In the proper season, and when fed upon good food, the flesh of the Wood Duck is hardly excelled by the Canvas-back, Red-head, or Teal. With such an exceptional combination of characters it is no wonder that he is so prized by the taxidermist, who stuffs him for the library stand, and by the epicure, who has performed upon him the same ceremony for the dining-room table. But in spite of the collector and the sportsman the Wood Duck is still moderately plentiful in certain sections of the State. Unlike some of its family the presence of man does not disturb it, in fact it rather courts his shelter and protection, and delights in his harvests. When taken young it readily adapts itself to the environment of the poultry-yard, and when properly cared for may be domesticated successfully. In the wild state the birds begin mating in March; the large flocks which have but just returned from the south are thus broken up, and by April they are seen principally in pairs. About the first of June the little Ducks break the shell which confines them, and from this time on to August they demand the care of their parents. If the nest is situated so that the Ducklings can climb out they leave it as soon as they are two or three days old, by jumping to the ground or water beneath; but if the nest is in a cavity so deep that they can not climb to the exit, or if unwilling to leave of their own accord, the most curious thing in the life-history of the Wood Duck occurs. The mother-bird appreciating the fact that they must leave such confined quarters, takes her downy brood in her bill, one at a time, and throws them out of the tree to alight the best they can. It is a very interesting sight to see an old Duck thus engaged in launching her young ones. The little fellows, as they obey the law of gravity, extend their legs and wings in an irregular and comical manner; now one turns a summersault, another spins around like a falling autumn leaf, and still another, parachute like, descends with a sailing motion, all striking with a soft thud if upon ground, or a sharp splash if in water, and as if the breath was entirely knocked out of them, remain quiet a moment upon the rippled surface. Soon they recover from the shock and boldly strike out with their paddles as if delighted with the qualities of H₂O, and thankful to be released from their previous home at any price. I have heard it related that the mother bird sometimes carries the little ones in her bill to the ground instead of throwing them out as mentioned, and I believe the statement is true.

Often long journeys are made by water or land to some favorite pond; in which case the Ducklings swim or waddle over fields and through woods to their destination. In making these trips, the mother selects a well covered route and often leads the way on wing, flying some distance in advance, then returning and repeating; thus keeping the little ones on line of march by uttering low, motherly tones.

Born with an insatiable appetite, with a vacancy within which they vainly endeavor to fill, they spend the first few weeks of their existence chiefly in eating and drinking. Their food consists of snails, roots, seeds, leaves of various aquatic plants, worms, and such insects as they can catch, mixed in various proportions. Like tame Ducks and chickens, they soon learn to hunt for themselves, yet they are largely dependent upon their mother, and she in turn is very solicitous for their welfare. At the age of two months they arrive at the period designated "Whippers." At this time they are nearly full-grown, and excepting wings and tail are full-feathered. Whippers were formerly taken by thousands, and in certain sections still are captured in considerable numbers. The method of taking them is as follows: A small

pond known to be the home of a few flocks of young Ducks is visited by two or three men with one or more dogs, either pointers or setters, and beginning at one end they raid the premises, splashing and beating the lilies and wild grass which conceal much of the surface of the water. This greatly frightens the young Ducks, causing them to leave the water and hide in the thick grass which abounds around the border of the pond. Having gone over as much space as desired, the dogs are taken into the vegetation along the shore and commanded to hunt. A point is soon made and the hiding Duckling, scared half to death, is picked up from under the dog's nose and killed. Point after point is made in quick succession, and Duck after Duck is added to the bag. A retriever properly trained will pick them out from their concealment and deliver them in his mouth to his master. Two men and two good dogs can take a great many Whippers in this way in July and August, but no one but the veriest pot-hunter would resort to such means. The true sportsman is content to wait for the full growth of the wing feathers, for the beautiful fall months of September and October. At this time the birds are strong, vigorous flyers, having for some weeks practiced daily the use of their pinions. As soon as old enough for successful flight, they leave the pond in which they were reared, early in the morning, under the guidance of their parents or parent, to feed upon wheat in a neighboring field, and having finished their repast instead of returning to the pond, they frequent some river or creek in the vicinity, where they amuse themselves in shady nooks upon an overhanging branch or half submerged log, or by paddling about in a sleepy manner. About one or two o'clock in the afternoon they again visit the wheat stacks, but soon return to the delightful shade of the river. Again in the evening they betake themselves to their feeding grounds; at this time the largest meal of the day is devoured. If unmolested they eat voraciously until sundown, when they are literally stuffed with wheat and ready to return to the pond left in the morning. Day after day the family run through this routine of life, each day extending their journey and seeking new feeding grounds as the old become dangerous or exhausted, until destroyed by the hunter or driven south by the cold.

It is in September that the finest shooting is afforded. Early in the season, before they have been frightened much by the hunter, they come into the ponds in large flocks, fat, delicious young birds, with crops packed with wheat, or sweet acorns, contented, perhaps even happy, they come leisurely sailing into the roost. But a fatal surprise is in wait for them, several hunters are concealed in the tall grass, and before the Ducks are aware of danger the death dealing sixes from several guns along the line have decimated their number and frightened the uninjured so that the flock is broken, perhaps for the first time. Dazed, terror-stricken, they, singly and in pairs, fly about the pond seeking to alight or to reform into a flock. It is now that the best shooting is obtained. The sun has already gone down, but there is a delightful twilight, a clear soft yellow-red tint illumines the whole western sky, and upon this background the gunner can shoot until the east is totally dark.

Bang! Bang! Bang! Bang! Bang! echoes along the pond, and again and again in rapid succession the guns are discharged, until the barrels fairly burn the hands that hold them. Twilight is fast fading into night, but the Ducks increase in numbers with the darkness, and fly so close you can almost strike them with the gun, too close to shoot, they may alight right at your feet and refuse to be walked up. With the departing ray of twilight the last Ducks settle, and now all is still and quiet. You give attention to your retriever, good dog, you had entirely forgotten him in the excitement of the past few minutes, but he has done his work and has deposited near by a goodly number of Ducks, others lie dead in marked spots, but the thick cover, the soft mud, and mossy water reaching to your waist, together with the darkness forbid your hunting, so pocketing the retrieved birds you slowly pick your way to shore.

This is called sport. The men engaged in it are called "sportsmen." And I have considered myself as one enjoying the former as well as belonging to the latter, still there is no denial, it is downright cruelty, premeditated—Duck murder.

PLATE LXII.

Fig. 4. ANAS BOSCAS—Mallard.

The Mallard, or Green-head, as it is commonly called, is found chiefly during the period of its migration: in the spring, from February to April, and in the fall, from September to December, but at no time is it entirely absent. A few ordinarily winter in Central and Southern Ohio; and in the northern part of the State some remain every summer and rear their young. The nest is built in May or June, and but one brood is reared during the season.

LOCALITY:

Any quiet, marshy place, thickly overgrown with reeds and grasses, may be selected as the site of the nest. Open water is usually near by, and generally the drier ground along the edge of the marsh is covered with large and small trees. A friend found in his orchard a female Mallard sitting upon six eggs. The nest was in the grass, beside a stump, several hundred yards from a small stream with marshy edges.

POSITION:

The nest is concealed from view by being placed in a clump of grass or reeds, and rests upon the ground or upon the old vegetation which covers the site.

MATERIALS:

Coarse stalks of reeds and grasses compose the foundation of the nest, and upon these are placed softer blades of grass and reeds, intermixed perhaps with feathers from the mother-bird, or other soft materials. The whole is a rough affair, and has about it little of character or interest.

EGGS:

The female lays from six to ten eggs, almost identical in appearance to the eggs of the tame Mallard. The shell is smooth and oily to the touch, greenish-white or brownish in color, and elliptical in shape. They measure in long-diameter from 2.12 to 2.30 inches, and in short-diameter from 1.68 to 1.72. A common size is about 2.25 x 1.70.

DIFFERENTIAL POINTS:

At the present time but three Ducks can be positively placed upon the list of summer residents: the Mallard, the Wood Duck, and the Blue-winged Teal. Other Ducks probably breed within the limit of the State, but I can obtain no certain evidence of the fact. The Black Mallard, the Widgeon, the Gadwall, the Shoveller, the Lesser Black-head, the Merganser, and the Hooded Merganser, are designated by Dr. Wheaton, in "Ohio Geological Survey," Volume IV, as rare or probable summer residents in Northern Ohio. The eggs of the three species mentioned as positive summer residents are quite different

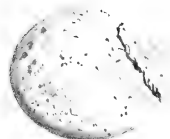
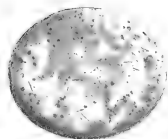
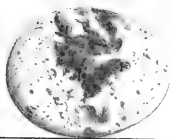
in size, and by this alone may be readily distinguished from each other. That of the Mallard is the largest, measuring about 2.25 x 1.72; next, the egg of Wood Duck, about 1.90 x 1.50; and last, that of the Blue-winged Teal, measuring about 1.85 x 1.30 inches. The Teal's eggs are decidedly buff tinted, the Wood Duck's less so, while the Mallard's are usually greenish or brownish in color.

REMARKS:

The three eggs illustrated, Fig. 4, PLATE LXII, are part of a set of seven taken in Ottawa county, in 1879. The coloring is that of blown specimens about five years old, but as they fade but little it is sufficiently near in tint to the fresh eggs.

With the exception of the Wood Duck, the Mallard is the handsomest of all the Ducks that are found in Ohio, or even our entire continent; and were not the old adage true, that familiarity breeds contempt, would be considered much more beautiful than it is at present. Let any one observe for a short time a full plumaged drake, how proudly he stands among his soberly attired companions, for he is no believer in furbelows and gewgaws of fancy colors as ornaments to the female form. For himself, on the contrary, nothing can be too fine, provided always it is in good taste, for he is not of the common herd. Now see him change his position and pose upon one leg—even this is a feat not gracefully performed by every one—while he turns slightly to one side his metallic-green head. Now he lovingly strokes the feathers upon his beautiful back, and wriggles from side to side the jaunty curled feathers of his tail. Now he stretches his gorgeous wing to its full extent along his orange-colored leg and foot, twisting and bending it till in turn each part sparkles in the sunlight as if set in costly gems. "Awkward as a Duck." Nonsense! In repose or upon his native element there is not among Nature's store a more graceful bird. He rivals the Peacock in his plumage, and outdoes him in the way he wears it. The one is a vulgar upstart, the other an elegant gentleman.

The Mallard is without doubt the progenitor of our common domestic Duck, but when or where it was first domesticated is never to be answered. So far as we know the domesticated Duck was a stranger to the Greeks and Romans as late as the Christian era, but the Egyptians were certainly familiar with it; and it is a well established fact that the Chinese have reared and cultivated Ducks from time immemorable. The Chinese Duck is not however our Mallard, consequently our domestic Mallard did not come from this eastern stock, or if it did it has lost its old characteristics by mingling with the wild Mallard. It is much simpler and more probable to suppose that our tame Ducks descended from the wild Mallard. Cultivation would change their plumage and size some, and intermixing with Eastern stock would change them still more. All through the country are to be seen tame Ducks almost exactly like the Mallard in size and plumage, and knowing that the wild bird is easily domesticated I see no reason to go farther for the origin of our tame Mallards.



Pl LXIII Fig. 1 ACCIPITER FUSCUS.
SHARP-SHINNED HAWK.

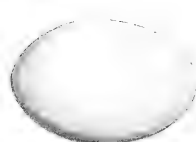


Fig. 2. PODILYMBUS PODICEPS.
THICK-BILLED GREBE.

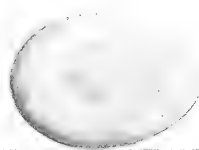
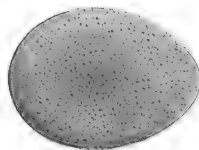
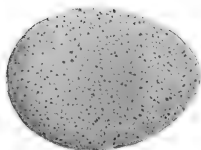


Fig. 3. CUPIDONIA CUPIDO.
PRAIRIE HEN.

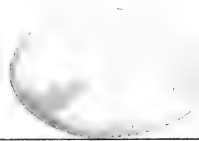


Fig. 4. DYTIS AURITUS.
HORNED GREBE.

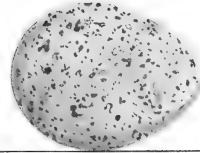
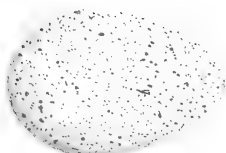


Fig. 5. BARTRAMIA LONGICAUDA.
BERTRAM'S SANDPIPER.

PLATE LXIII.

Fig. 1. ACCIPITER FUSCUS.—Sharp-shinned Hawk.

In Middle and Southern Ohio the Sharp-shinned Hawk is not common, indeed it is almost rare; but in Northern Ohio it is said to be a frequent resident. Dr. Kirtland and Mr. Read wrote of it as a common species about Cleveland. Where found it is probably a permanent resident. It builds in April or May.

LOCALITY:

Usually the nest is placed in the fork of a tree in dense woods, preferably pine woods, near a stream; but in the absence of evergreens, scrubby oaks are chosen. Occasionally the nest is placed in a cavity similar to the Sparrow Hawk's, or even upon the ledge of a rock overhanging a lake or river.

POSITION:

When situated in a fork the nest is generally close to the main trunk and is supported like the nest of the Crow. When in a hollow limb it rests upon the floor of the cavity; when upon a rock it is in a concavity upon a horizontal surface. Mr. Audubon found a nest of this species in a hole in the rocks along the bank of the Ohio river, certainly an exceptional position.

If built in a fork of a tree its distance from the ground may be as little as eight feet, or as much as fifty feet. If upon a rock it may be high above the bottom of the declivity.

MATERIALS:

Mr. Kennicott found a nest at Fort Resolution composed entirely of fine spruce twigs and a few bits of the outer bark of the spruce, the latter being placed in the bottom of the cavity for a lining. One of the three nests mentioned by Audubon was in a rock cavity; this was but a slight affair, composed of a few sticks and some grasses carelessly put together. The second was in a hollow limb; the eggs rested upon the wood, no materials having been used. The third was in the fork of an oak, it was an elaborate affair not quite finished. A pair of Sharp-shinned Hawks observed by Mr. William Street, of Easthampton, deserted their nest after having their eggs stolen, and layed four more eggs, one every third day, in an old squirrel's nest. I have seen but one nest of this species. It was in the fork of a small oak, about twelve feet from the ground, in a dense wood two hundred yards from the Scioto river. It was composed entirely of sticks and leaves, the sticks were used as foundation and superstructure, the largest being used first, and the leaves lined the slight cavity formed by them. In diameter it was about twenty inches, though too irregular to be accurately measured. Nests are said to be occasionally well lined with feathers, moss, and other soft materials.

EGGS:

The number of eggs in a set varies from three to five, but four is the commonest number. They are

nearly spherical, measuring from 1.12 to 1.18 in short-diameter, and from 1.35 to 1.45 in long-diameter. A common size is about 1.14 x 1.40. The ground-color is faint greenish-blue, almost white. The markings consist of large irregular blotches, spots, lines, and speckles of various shades of brown. Three eggs before me are marked as follows: 1. About the middle of the shell a large band made up of irregular blotches encircle it. The colors of these blotches vary from yellowish-brown to sepia, the tints are nowhere distinct, but are blended and superposed; the rest of the shell is spotted pretty thickly with Vandyke brown. A few deep shell-marks show neutral tint. 2. Three-fourths of the shell is faintly clouded with yellowish-brown blotches, and superposed upon these are spots, short lines, and speckles of darker brown. The intervening whitish places are likewise spotted and speckled. 3. About the base are a number of spots of faded brown, and diagonally across from a little beyond the middle of the shell to almost the point is a line an inch long of dark brown, at the point are blotches of neutral tint. Point and base have been spoken of, as a matter of fact the eggs are so near alike at their ends that it requires an accurate eye to determine the one from the other.

DIFFERENTIAL POINTS:

The eggs of the Sharp-shinned Hawk are so characteristic in their markings that this feature, when taken with their size, is sufficient to identify them. The eggs of the Sparrow Hawk may be of the exact dimensions expected in the eggs of the species being considered, but their markings are so essentially different in color that they can never be mistaken, the one for the other. See page 214.

REMARKS:

Fig. 1, PLATE, LXIII, represents three eggs of the Sharp-shinned Hawk, of the ordinary sizes, shapes, ground-color, and markings. They were taken the 3rd of May, 1881. The coloring shows them as they are to-day, I can not notice that the shades have faded any since the eggs were dried five years ago.

The Sharp-shinned Hawk attracts the attention of the field ornithologist by the peculiarity of its flight. It propels itself through the air with a peculiarly quick, flapping movement of the wings, resembling not a little the motion of the Sparrow Hawk. The rapidity it attains is astonishing, it darts around and through bushes with the speed of an arrow, and like a dart carries destruction in its path. None of our Hawks are more rapacious; woe to the small bird that comes in its way. It seems unable to resist the temptation to destroy every little bird it espies, and almost before its unsuspecting victim is aware of danger the Hawk will whirl upon its prey and bear it off, a mass of quivering, suffering flesh, and flying feathers. A Sharp-shinned Hawk descending blindly and furiously upon its prey, broke through the glass of the green-house at the Cambridge Gardens, and still pursuing fearlessly passed through a second glass, and was only brought to a halt by a third glass partition. It was a little stunned, and its wing-feathers were so broken that the bird was caught.

This Hawk is especially adapted for training by the falconer; its boldness, cunning, light-weight, quickness of movement, and, above all, its docility and readiness to learn, give an indication of what might be expected of it if properly schooled. A bird of this species owned by a friend always reminded me of a trained bull-dog. In the wild state the Sharp-shinned Hawk sometimes attacks birds larger than itself, but the bird of my friend certainly outdid the record, by attacking a Great Blue Heron which was tied by one leg in the yard.

PLATE LXIII.

Fig. 2. *PODILYMBUS PODICEPS*.—*Thick-billed Grebe*.

The Thick-billed Grebe is the common Dabchick, Water-witch, Dipper, or Diver so frequently seen in the spring and fall along water-courses throughout the state. In the northern counties it is a common summer resident, while in the central and southern counties it is but occasionally seen during the breeding season. It builds the latter part of May or the first of June.

LOCALITY:

The nest is placed in a marsh, often considerable distance from land. The large lake marshes in the northern part of the state are the most frequented places.

POSITION:

The nest is situated either in a bunch of saw-grass, or other grass or reeds, or is composed of a floating mass of material anchored in open water. Dr. Langdon observed a number of nests in the marshes of Ottawa county, in 1880. Writing of them in "Summer Birds of a Northern Ohio Marsh," he says: "As more or less doubt appears to prevail in regard to the building of floating nests by members of the Grebe family, I desire here to testify to the fact that the nest of the present species *does* float, notwithstanding the skeptical '*it is said*' of Dr. Coues, in his remarks on the nidification of the family."

MATERIALS:

When the nest is situated in a bunch of grass, the blades are matted against the earth, and on top a little well selected material is added as a sort of lining. If the nest is a floating one, a clump of grass or other detached vegetation is taken as a nucleus, and the birds add to this moss, mud, blades of grass, and reeds until it reaches sufficient dimensions. The part above water is chiefly mud and grass. Dr. Langdon, in the same article quoted from above, says: "The little floating island, of decaying vegetation held together by mud and moss, which constitutes the nest of this species, is a veritable ornithological curiosity. Imagine a 'pancake' of what appears to be mud, measuring twelve or fifteen inches in diameter, and rising two or three inches above the water, which may be from one to three feet in depth; anchor it to the bottom with a few concealed blades of saw-grass, in a little open bay, leaving its *circumference entirely free*; remove a mass of wet muck from its rounded top and you expose seven or eight soiled brownish-white eggs, resting in a depression the bottom of which is less than an inch from the water; the whole mass is constantly damp. This is the nest of the Dabchick, who is out foraging in the marsh, or perhaps is anxiously watching us from some safe cover near by.

"The anchoring blades of coarse saw-grass or flags, being always longer than is necessary to reach the bottom, permit of considerable lateral and vertical movement of the nest, and so effectually provide against drowning of the eggs by any ordinary rise in the water-level such as frequently occurs during

the prevalence of strong easterly winds on the lake. A small bunch of saw-grass already growing in a suitable situation is evidently selected as a nucleus for the nest, and the tops bent so as to form a part of it.

"During the day we invariably found the eggs concealed by a covering of muck as above described, but, as we ascertained by repeated visits at night and in the early morning, they are uncovered at dusk by the bird, who incubates them until the morning sun relieves her of her task.

"The above description applies equally well to any of the six nests observed by us, and to the dozens observed by Mr. Porter at the same locality, during the past four or five years; he notes, however, a few instances in which the nest instead of being entirely free at its circumference, as above described, was held in place by the surrounding 'deer-tongue.'"

EGGS:

The complement of eggs varies from five to eight, seven being the usual number. They measure in long-diameter from 1.70 to 1.80, and in short diameter from 1.10 to 1.20 inches. A common size is 1.18 x 1.73. The shell is smooth for the size of the egg, and frequently has round, slightly raised, warty prominences upon it. In color it varies from greenish-milk-white to a yellowish-brown. One egg before me is decidedly olive in color, but this tint is very superficial as a little acid at once exposes the milk-white shell beneath. The eggs when taken from the nest are often covered with mud so that it is necessary to clean them before the true tint of the shell can be discerned.

DIFFERENTIAL POINTS:

See Horned Grebe, page 261.

REMARKS:

The three eggs figured PLATE LXIII, Fig. 2, were selected from two sets of six and seven respectively, taken in Ottawa county in 1882. They show the common sizes, shapes, and colors of the eggs of the Thick-billed Grebe. Every boy is familiar with the Dipper, and every one who carries a gun has sought in vain to shoot the little diver before it could disappear under the water. Although common enough in all streams in the spring and fall, and often remaining about some favorite spring when all surrounding water is frozen over, yet few persons encounter the birds in the summer south of the lake marshes. The following is from page 497 of "North American Birds," by C. J. Maynard:

"The Pied-billed Grebe is one of the best known species of the genus, as it is remarkably common, especially during migrations, throughout our section. They winter from the Carolinas, southward, but are particularly common in Florida at this season, where, perhaps, a few remain to breed. As do all the members of the family, the Pied-billed Grebe places its nest on a mass of floating debris in some quiet, reedy cove of a pond or river, depositing the eggs early in June. The young follow their parents as soon as hatched and are cared for by them with great assiduity. All the Grebes possess the power of inflating the space between the skin and body, and thus they can ride lightly on the water, or by contracting the skin and feathers, are enabled to sink slowly beneath the surface, often swimming with only the head exposed; or, they will remain hidden in the reeds, with the bill alone projecting."

PLATE LXIII.

Fig. 3. *CUPIDONIA CUPIDO*.—*Prairie Hen*.

The *Prairie Hen*, or *Pinnated Grouse*, like the *Wild Turkey*, is almost exterminated. In the early settlement of Ohio it was by no means a rare resident in the neighborhood of Sandusky, and even to-day a few still remain in the most unfrequented stretches of prairie land. Dr. Wheaton, writing of this species, says, page 446, Vol. IV, "Geological Survey of Ohio:" "Rare resident in Northwestern and Central Ohio. Probably breeds. . . . A male *Pinnated Grouse* was killed by a gunner seven miles west of Columbus, November 16th, 1878. By the kindness of Mr. A. B. Stevenson, who purchased the bird, the skin is now in my collection. As long ago as 1838, Dr. Kirtland wrote: 'The *Prairie Hen* is found in considerable numbers in the northwestern parts of the State.' It is now very rare, though a few remain in the vicinity of Toledo, and in Erie, Ottawa, Crawford, and Marion counties. . . . I learn that they also remain in Wyandot county, and in the vicinity of Venice, Sandusky county, though in very limited numbers; and perhaps on less reliable authority that they have been seen in Fairfield and Pickaway counties. It seems not impossible that they may be now on the increase after having once been nearly exterminated or driven from the State."

Having never found the nest of this *Grouse*, and having no record of its time of nesting in Ohio, nor any particulars in regard to its breeding habits, I have been compelled to compile the following from observations made in the Western States, where these birds are still quite plentiful. The nest is built the last of April or the first of May; but one brood being generally reared by a single pair during the season.

LOCALITY:

Tall grass in open prairie is usually selected for the site of the nest.

POSITION:

It is carelessly placed upon the ground or upon the dead vegetation covering the site, either in a tuft of grass or at the foot of a small bush.

MATERIALS:

Dried grasses, leaves, and straws interwoven and matted together compose the bulk of the nest.

EGGS:

The complement of eggs varies from eight to twelve. They measure from 1.65 to 1.75 in long-diameter, and from 1.20 to 1.30 in short-diameter. The ground-color of shell varies from a light clay-color to a rather dark, brownish olive-green; some eggs are almost unmarked, others are uniformly speckled, more or less plentifully with brown. They are said to be incubated in twenty days.

DIFFERENTIAL POINTS:

The eggs under consideration are so characteristic in size, shape, ground-color, and markings, that identification is easy. When compared with the eggs of the Ruffed Grouse, they are seen to be larger, darker in ground-color, and generally more or less speckled; differences which are material and striking.

REMARKS:

The three eggs illustrated, Fig. 3, PLATE LXIII, were taken in Indian Territory. They are said to represent the average sizes, shapes, ground-colors, and markings.

The following is copied from "North American Birds," page 444. "The young broods when come upon suddenly and taken by surprise, instantly scatter and squat close to the ground, so that, without a dog, it is impossible to find them. The mother gives a single loud chuck as a signal of danger, and the young birds rise on the wing and fly a few yards in different directions, and then keep themselves perfectly still and quiet until the mother recalls them by a signal, indicating that the peril has passed. In the meanwhile she resorts to various devices to draw the intruder away from the place.

"The Pinnated Grouse is said to be easily tamed, and may be readily domesticated, though I do not know that the experiment has been thoroughly tried. Mr. Audubon once kept sixty of them in a garden near Henderson, Kentucky. Within a week they became tame enough to allow him to approach them without being frightened. He supplied them with abundance of corn and other food. In the course of the winter they became so gentle as to feed from his hand, and walked about his garden like so many tame fowl, mingling occasionally with the poultry. In the spring they strutted, 'tootted,' and fought as if in their wild state. Many eggs were deposited, and a number of young birds were hatched out; but they proved so destructive to the vegetables that the experiment was given up and the Grouse were killed. The male birds were conspicuous for their courage, and would engage in contest with the Turkey cocks, and even with the dunghill cock, rather than yield the ground."

PLATE LXIII.

Fig. 4. *DYTES AURITUS*—Horned Grebe.

The Horned Grebe is quite common on some of our ponds and rivers, making its appearance early in the spring. Few, however, remain to build nests, preferring more northern waters. In the fall it is again common. In Western New York it is one of the first migratory birds to be seen on the small lakes with which that section of country abounds. I have several times found in the Montezuma marshes, in June, nests containing fresh eggs. Audubon says it breeds in Northern Ohio, and Dr. Langdon speaks of two supposed nests of this bird from Ottawa County.

LOCALITY:

Like all the Grebes, this bird during the breeding season confines itself to the marshes, seldom, at this time, being seen far from shore. It prefers some pond with reedy borders, though no doubt building also along the river bottoms. Nests which I have found at the foot of Cayuga Lake, Central New York, were invariably some distance within the marsh and always not far from the edge of some quiet pool of water.

POSITION:

The nest is generally found floating upon the surface of the water, or at least the nest proper is placed upon some floating mass of dead reed-stalks, roots, etc., and is extremely difficult to find, owing to the habit the birds have of covering up their eggs whenever they leave the nest, so that one may pass within a few feet of it without seeing more than a mass of floating debris. I once actually sat down upon a nest of this bird; it was placed upon a rather large amount of floating rubbish and completely covered over, there being not the slightest indication of a nest visible, for I examined the mass carefully to see if it was likely to bear my weight. I did not discover my mistake until the seat began to sink with me, when, getting up rather hastily, I disturbed the covering enough to expose the eggs, three in number, but two of them quite naturally were broken.

MATERIALS:

The nest has little of interest so far as materials of construction are concerned, as it is only a heap of reeds, grass, and such coarse vegetable material as is common to the locality. The whole forms a rude mass, always water-soaked and looking like the conventional "last year's bird's nest."

EGGS:

There seems to be some discrepancy among authors as to the number of eggs this bird is in the habit of laying. Mr. Maynard says from four to six is the complement, this I think is too many. Dr. Langdon is inclined to the opinion that two eggs make a full set, this I am sure is too few. According

to my observation either three or four eggs constitute a full set, three being the commonest number. They are long and pointed in outline, measuring from 1.75 to 1.95 in long-diameter, and from 1.16 to 1.19 in short-diameter. A common size is about 1.18 x 1.90. The shell is moderately rough, and greenish-yellow in tint. It is unmarked except occasionally by a few dots of neutral tint, barring of course the stains of mud and of wet vegetation.

DIFFERENTIAL POINTS:

But two species of Grebes have been positively identified as summer residents of Ohio—the Thick-billed Grebe and the Horned Grebe. Their nests and eggs are very similar, but I believe it is generally possible to tell, by careful measurements of the eggs and inspection of the tints of the shell, to which species a given nest and eggs belong.

REMARKS:

The eggs illustrated, Fig. 4, PLATE LXIII, were selected from three sets, one of which came from Ottawa County, the remaining two from New York State. They show the common sizes, shapes, and tints of shell.

This odd little bird is familiar to most boys living in the neighborhood of a pond, lake, or stream, but usually is not distinguished by them from the Thick-billed Grebe. It has the same faculty of disappearing beneath the surface of the water when fired at or frightened in any way, and the same power of inflating itself with air, thus riding lightly on the water or by contracting its skin and feathers sinking at will to any desired depth. I have repeatedly shot at them, both with rifle and shot-gun, when they were watching me, and often at quite close range, yet they invariably disappear before the shot strikes the water. There is a common impression that these birds never take wing, in fact that they are unable to fly, this is of course an error. I have often killed them when on the wing, and even forced them to rise from the water, which they do with comparative ease, flying with considerable rapidity when once fully under headway.

Dr. Langdon, of Cincinnati, found a few years since in the Ottawa County marshes, a number of nests which he believes were the property of the Horned Grebe, the birds themselves he was never able to find upon the nests. He says: "These eggs are chalky-white, with a faint though definite tinge of pale bluish-green, much like the tint of the Least Bittern's egg, and very unlike the pale whitey-brown of the eggs of *P. podiceps* observed by us; they are also more elongated in shape than the ordinary egg of *P. podiceps*, and taper nearly equally toward both ends, which are decidedly pointed, rather more so than the eggs of *P. podiceps*; another important point of distinction is the number in a full set which is apparently but two, the complement of *P. podiceps* being from four to eight. That our sets were probably full is indicated by the fact that one of them contained fully developed young, which *swam*, and *even attempted to dive*, on being placed in water after removal from the egg, . . . they presented slight, but constant differences in the head and neck markings, and the size of the bill, as compared with the young of *P. podiceps*, obtained in the same manner, those supposed to be *P. cornutus* being smaller, with more slender bills, less blotching about the head and neck, and none in the median line of the throat." In regard to the complement of eggs, it may be remarked, that the nests referred to above were taken in July. This makes it probable that they were all second sets; hence, the small number of eggs in each.

PLATE LXIII.

Fig. 5. *BARTRAMIA LONGICAUDA*—*Bartram's Sandpiper*.

The Bartram's Sandpiper, or Upland Plover, is often met with in large numbers during the migratory time in spring and fall, and in the summer time it is by no means rare, though not near so common as some Ohio authors have stated it to be.

It nests in May or June, rearing but a single brood during the season.

LOCALITY:

Upland fields of clover, grass, or wheat, in the neighborhood of a pond or marshy piece of land are usually selected by these birds for their summer home. I have found them most frequently in clover fields adjoining the Ohio canal.

POSITION:

The nest rests upon the ground in a little depression and is concealed by the vegetation surrounding it. Frequently an open space a foot or two in diameter and almost free from any living thing is the chosen site.

MATERIALS:

A few blades of grass or stalks of clover or wheat are carelessly placed in the depression after it has been properly cleared by the bird, and upon this as a suitable resting place the mother-bird lays her eggs. There is not enough of the nest to give it any importance or character.

EGGS:

The complement of eggs consists of three or four, usually the latter number. They are quite blunt at one end and pointed at the other. In long-diameter they measure from 1.75 to 1.90; and in short-diameter, from 1.25 to 1.38. A common size is about 1.30 x 1.85. The ground-color of the shell varies in different specimens from light drab to yellowish-brown. A little Vandyke-brown and raw sienna gives the ordinary tint. The markings consist of blotches, spots, and speckles, distributed in various proportions over the entire shell. Some eggs contain a number of bold blotches, others are entirely speckled, but whatever the combination of blotches, spots, and speckles, the shell is pretty uniformly covered. The surface marks are usually Vandyke-brown, laid on boldly and distinctly. The deep shell marks appear Payne's grey or neutral tint, and are seldom abundant.

DIFFERENTIAL POINTS:

The size and shape of the eggs under consideration are sufficient to identify them, as they are considerably larger than any other eggs which bear a close resemblance in shell tints and markings.

REMARKS:

Fig. 5, PLATE LXIII, represents three eggs of the Bartram's Sandpiper, found near Circleville in 1880 and 1882. They have been selected from three sets as representative in size, shape, ground-color, and markings.

About Circleville the Bartram's Sandpiper nests in certain localities every year. It is by no means difficult to find a field containing a pair or two of these birds, but to find their nest is an entirely different matter. I have spent hours and days looking for it, and have resorted to all manner of devices to discover it, but have invariably failed, until accident came to my relief. As soon as a pair of these birds have reason to suspect that you are about their premises for no good purpose, they begin to mislead you from their nest. If you are in the opposite side of the field from their treasure they wheel and circle about your head as if you were about to tramp on it. Now the male perches upon some adjoining fence post and you almost forget about his nest in watching his performance. He will balance himself upon his toes, and, with extended wings, utter a mellow thrilling note that is incomparable. Now he bows and gesticulates with his wings. Now he straightens up and draws his feathers close till he appears but half his former size, and observes you as if frightened. About the time you think he is really scared he comes at you in a fury, and then perhaps alights closer by, as if to assure you the whole thing is a hoax. When on the ground the female stealthily steps through the grass, peering on every side with her black eyes; and with young ones following after, she always reminds me of a poor old Turkey hen with her brood. This Plover, during the mating and nesting season, is very fond of perching upon a fence post or tree top, and uttering a loud pleasing whistle, interspersed now and then with the tremulous scream referred to above. Both notes are very pleasing and weird, and on a still day in May or June, form a fitting accompaniment to the dreamy thoughts of the ornithologist, as stretched upon the sod under the shade of some friendly tree, he rests his weary limbs. When disturbed near her nest or with young the female feigns lameness, and resorts to the many other tricks so often related of birds to draw attention to themselves instead of having it bestowed upon their eggs or little ones.

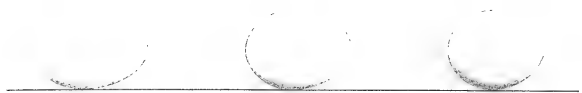


Fig. 1 PICUS VILLOSUS
HAIRY WOODPECKER.



Fig. 2. CENTURUS CAROLINUS.
RED-BELLIED WOODPECKER.



Fig. 3 PORZANA CAROLINA.
SORA RAIL.

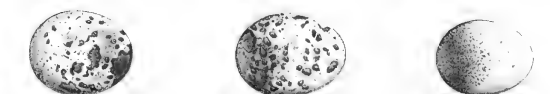


Fig. 4. MIMUS POLYGLOTTUS.
MOCKINGBIRD.



Fig. 5. ECTOPISTES MIGRATORIA.
PASSENGER PIGEON.

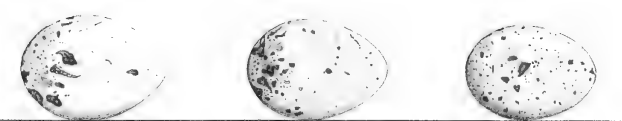


Fig. 6 RALLUS VIRGINIANUS.
VIRGINIA RAIL.

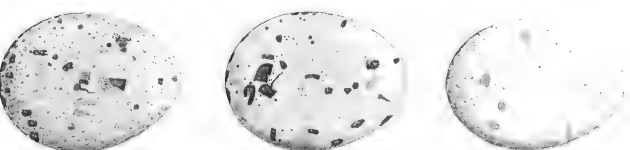


Fig. 7 RALLUS ELEGANS.
RED-BREASTED RAIL.



Fig. 8. SCOPS ASIO
LITTLE SCREECH OWL.

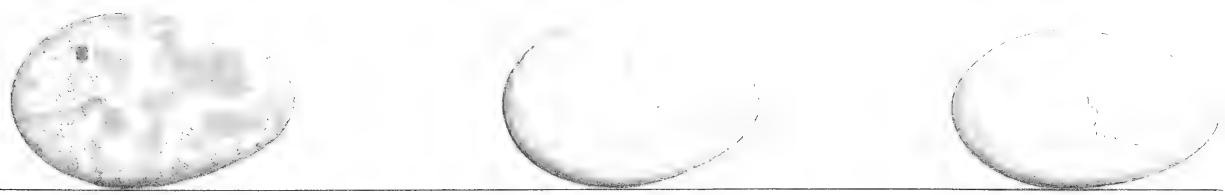


Fig. 9. PHALACROCORAX DILOPHUS FLORIDANUS.
FLORIDA CORMORANT.

PLATE L₄XIV.

Fig. 1. PICUS VILLOSUS—Hairy Woodpecker.

The Hairy Woodpecker is not a very common summer resident, though at times in late spring it is quite numerous. In the fall also it is more plentiful than in summer, and even in the coldest winter weather a few are usually to be seen about orchards or town trees. The nest is made in May or early in June, and but a single brood is generally reared during the season.

LOCALITY:

The nest of this species is commonly built in an orchard or about the edge of woods, but sometimes it is found in a shade tree in an open field or near a farm-house, or even in a gate-post or fence-post. Being less shy than others of the family a pair of these birds occasionally come into a large town and go to house-keeping in some dead branch of a tree growing on the most frequented thoroughfare. The Downy Woodpecker also comes into town to nest, but not as frequently as the Hairy Woodpecker considering the relative abundance of the two.

POSITION:

The nest consists of an excavation in wood, generally, if not always dead wood, at various heights from the ground according to the locality. It may be in the perpendicular trunk of a tree or in a horizontally inclined limb. If in the latter situation, the entrance is on the under side of the branch. The usual distance from the ground is between ten and twenty feet, but it often is much lower, or even in the topmost branch of suitable size of the tallest forest tree.

MATERIALS:

No materials are carried into the cavity, the fine chips made during the excavating being considered sufficiently soft for the eggs to rest upon. The same general plan of carpenter work is adopted by this Woodpecker as by the Downy Woodpecker, heretofore described, but upon a larger scale. The diameter of the entrance is about two inches. This extends horizontally four to eight inches, and then turns nearly at right angles and is enlarged to two and one-half to three inches in diameter and continues to the depth of ten to twenty inches. Sometimes, though rarely, a natural cavity is chosen for the home, in this case the birds are not particular about proportions.

EGGS:

The complement of eggs varies from four to six, five is probably the most frequent number. They are pure, pearly white, like all eggs of the family, and about the same shape. They measure from .87 to 1.05 in long-diameter, and from .68 to .75 in short-diameter. A common size is about .69 x 1.00 inch.

DIFFERENTIAL POINTS:

See Red-bellied Woodpecker.

REMARKS:

PLATE LXIV, Fig. 1, shows three eggs of the Hairy Woodpecker; they are of the common sizes and shapes. On account of the slight difference, except in size, between the nest under consideration and that of the Downy Woodpecker, it has not seemed necessary to figure but the one.

In regard to the general habits of this species not much need be said. It is one of the most widely distributed species and is subject to innumerable local variations of plumage. Audubon encountered it wherever he went as did also Wilson. While not numerous in Ohio during the summer, yet a few are to be met with in every part of the State. It seldom associates with other birds, and always appears busy and dignified. It feeds chiefly upon insect food, much of which it procures by probing the crevices of the bark of trees, and by excavating into small cavities which contain eggs or larvæ; on this account it has been called the "Sapsucker." While this name is certainly misapplied, it is no more incorrect than the majority of common and scientific(?) names which are attached to objects in natural history.

PLATE LXIV.

Fig. 2. *CENTURUS CAROLINUS*—Red-bellied Woodpecker.

The Red-bellied Woodpecker, or Chow Chow as the country boys call this bird, is frequently seen in Central Ohio in the fall, winter, and spring, but I have never been able to find its nest. Dr. Langdon speaks of the species as a common resident near Madisonville, and Dr. Wheaton says, "common resident, breeds." He further adds: "Mr. Kirkpatrick, as the result of his observations near Cleveland, suggests that it may be a summer resident only in Northern Ohio, which would account for their greater abundance, apparently in other parts of the State in winter." There is no question about it being a resident north of the dividing line, and it is probable that occasionally a pair may nest in even the extreme southern part of the State. It seems singular, that a bird so decidedly southern should be with us in the colder months and almost absent, except in the coolest part of the State, during the summer. One would naturally expect that from the distribution of the species, that if found breeding at all it would be in the southern counties, and I am entirely unable to explain why this is not the case.

The nest is built in May, and but a single brood is reared.

LOCALITY:

This species is probably the most retiring of the family, preferring dense, tall timber to the more open wood frequented by the Red-headed Woodpecker and others, and its nest is generally made in a large dead tree about the outskirts of such timberland. Some writers state that it generally excavates its nest in living wood, some, that it selects a hollow limb and bores an entrance to it, others, that it usually selects a dead trunk and penetrates it near a limb, but all agree that it prefers a secluded locality. Occasionally a pair departs from the ordinary custom and builds a home in an orchard tree, or shade tree in a country lawn. I have never seen the species in town, even in the fall.

POSITION:

The nest is high up as a rule, forty or fifty feet from the ground, and is located in a perpendicular trunk or in a limb forming an angle with the horizon. In the latter position the opening is always on the under side.

MATERIALS:

No materials are carried into the excavation, a few fine chips being left in the bottom for the eggs to rest upon. According to Maynard, the diameter of the entrance is two inches; beyond the turn the cavity becomes gourd-shaped, its greatest diameter being about five inches, and its depth about fourteen inches. If there is as much variation in the size of the excavation as there is in nests of others of the family, the above dimensions will vary somewhat for every nest. The most constant part of any Woodpecker's nest is the size of the entrance. This seldom varies for a given species more than one-eighth of an inch from a fixed diameter.

EGGS:

The complement of eggs is four or five. They are pure, pearly white, with a fine polish, and measure from .90 to 1.00 in long-diameter, by from .70 to .78 in short-diameter. A common size is about .72 x .95. Maynard gives the dimensions as follows: "1.04 x .80 to .95 x .75." "North American Birds" says: "The eggs vary from an oblong to a somewhat rounded oval shape, are of a bright crystalline whiteness, and their measurements average 1.02 inches in length by .88 of an inch in breadth."

DIFFERENTIAL POINTS:

The eggs of the five Woodpeckers known to be summer residents differ from each other only in size and shape. All are pure white, and almost all have highly polished, pearly shells. The largest are the eggs of the Golden-winged Woodpecker, the smallest those of the Downy Woodpecker. In the following list they occur according to their size:

C. auratus—	long-diameter, .93 to 1.19; short-diameter, .79 to .90.
M. erythrocephalus—	" .90 to 1.10; " .70 to .85.
C. carolinus—	" .90 to 1.00; " .70 to .78.
P. villosus—	" .87 to 1.05; " .68 to .75.
P. pubescens—	" .78 to .88; " .57 to .67.

The Pileated Woodpecker is possibly a summer resident in certain sections of the State, but I have been unable to obtain an undoubted record of its occurrence.

It will be seen from the above dimensions that it is not possible to differentiate eggs of the first four species with any degree of certainty unless a large number of specimens are considered.

REMARKS:

Fig. 2, PLATE LXIV, represents three eggs of the Red-bellied Woodpecker of the common sizes and shapes. They were selected for me from a number of sets in the possession of Mr. F. T. Jenks, of Providence, R. I.

I frequently see this handsome Woodpecker along the country roads in Central Ohio, but never in the nesting season. It is always alone, and usually not very wild. I hope yet to be able to find its nest in Pickaway County, and thus add one more of the family to my local list.

PLATE LXIV.

Fig. 3. PORZANA CAROLINA—Sora Rail.

The Sora Rail, or Carolina Rail as it is more commonly called, begins to arrive from the south the last of March or first of April, and by the latter part of the last named month every piece of wet grass-land and reedy pond contains many representatives of this species. Suddenly late in May, about the time to expect them to begin building, they nearly all disappear from the southern and central portions of the State, but in the northern marshes they still remain in large numbers and are soon busily engaged with the cares of nidification. They raise but a single brood during the season, and as soon as the young are well able to fly, they begin their journey southward, arriving about Circleville in September and October, where, at this time, they again fairly swarm about all suitable swamps. As cold approaches they become less plentiful, but a few individuals often remain far into the winter months.

LOCALITY:

As stated, the northern marshes are the great breeding grounds, but in other sections of the State a nest is sometimes built in a small pond, or even in an open field where a spring and some slight depression in the ground have combined to form a permanently moist spot. Such places the birds seem to like, although they may be of very small extent, probably they enjoy the open meadow around them.

POSITION:

The nest is either placed upon the ground, or upon some rubbish, the top of which is slightly above the water level, with but little effort at concealment.

MATERIALS:

At best the nest is a poor affair, loosely and poorly constructed, but considering the fact that the young run about as soon as hatched, it is sufficient. It is composed of grasses, weeds, strips of flags, rushes, and such other bits of vegetable material as come handy. It bears a close resemblance to the other aquatic nests.

EGGS:

The number of eggs in a set varies from six to ten. They measure in long-diameter from 1.20 to 1.30 and in short-diameter from .80 to .90. A common size is .85 x 1.25. The ground-color of the shell is brown shading toward olive, or brownish-buff, and the markings consist of dark blotches, spots, and speckles of the same color. The markings are not very numerous and are well distributed over the shell. Deep shell-marks are often wanting, but when they occur, are of good size and bluish-gray in appearance.

DIFFERENTIAL POINTS:

See Virginia Rail, page 275.

REMARKS:

The three eggs of the Carolina Rail figured on PLATE LXIV, Fig. 3, were taken from a set of eight found in Ross County in 1879. They show the coloring after the lapse of six years. The nest was on the ground near a spring branch running through wet grass land. It was about eight inches in diameter, and rather bulky and well built for this species.

The Carolina Rail is by far the commonest of the five Rails that visit Ohio, and in the fall affords fair sport to some hunters. They fly slowly, and are about as easy to kill as butterflies, when the loads are proportioned to their bodies. The chief difficulty experienced by the gunner is in making them take wing, a thing which they avoid as much as possible, either by running through the weeds like mice, or by hiding like quail. A dog properly trained will flush enough birds, however, in an afternoon to afford fair shooting, provided of course the ground is such as to permit of a dog hunting at all. When forced to fly the Rail flutters along just above the tops of the weeds, hardly clearing the taller stems, and the chances are will tumble as if shot before far enough off for the hunter to shoot. If once flushed it is next to impossible to make them rise a second time, and they are such consummate adepts at hiding that I would about as soon look for a needle in a hay-stack as for a Rail in tall grass. Just before dusk they are much easier put on wing than at any other time during the day. Often while shooting Duck at dusk the report of the gun is sufficient to scare up dozens of Rail, and every few steps one is routed, when half an hour before you could with difficulty start a single bird. While waiting for the coming of Ducks, I have often been amused by the confiding nature of this Rail, and also by its curiosity. I have had them come up to me and peck my gum boots, and play with the gun barrel as a bantam rooster does when teased. One instance in particular I remember, I was having such sport playing with one of these birds that I refrained several times from shooting at Wood Duck.

I have frequently captured them alive, and have kept them for months. They do well in confinement, soon becoming very tame. I kept one all winter some years ago, and fed it chiefly upon minnows. They are adept fishermen, resorting to the same tactics for their capture as do the Herons.

PLATE LXIV.

Fig. 4. *MIMUS POLYGLOTTUS*—Mockingbird.

The Mockingbird, although a southern species, occasionally breeds in Central and Southern Ohio. I have never found its nest but once, but I frequently hear of instances of its occurrence. It can safely be classed as a constant though rare summer resident. It arrives in April or May, and builds its nest the last of May or early in June, and probably with us rears but a single brood.

LOCALITY:

In its favorite breeding grounds of the South, this species has acquired a liking for the habitations of man, and is to be found in greater abundance about dwellings than in dense woods. Even in the wilds of Florida, according to Maynard, it lives in "little hummocks and clumps of bushes that grow in the open pine barrens," rather than in thickly wooded sections. The pair which I observed in 1880, made their home in a little thicket of two or three acres, on the bluff bank of the Scioto river, four miles north of Circleville. A few large oak trees were still standing among the undergrowth and from the top of one of them the male stood on guard and sang to his mate through most of the day.

POSITION:

The nest is usually in a low tree or bush, its distance from the ground being from two or three feet to eight or ten feet. It is situated in a crotch or upon interlacing stems after the manner of the nest of the Wood Thrush or the Cardinal Redbird.

MATERIALS:

The foundation and superstructure are composed of weed-stems, roots, straws, bits of leaves and pieces of twigs, in various proportions, the twigs generally predominating and forming the exterior, and the finer and more pliable material going to make the superstructure. The cavity is lined with small dark rootlets, or more rarely with weed-fibres, horse-hairs, strings, or such other soft material as is accessible. According to "Birds of North America," page 17, its external diameter is about 6.00 inches; internal diameter, 3.50 inches; external depth, 2.00 inches; internal, 1.50 inches.

EGGS:

The number of eggs in a set is usually four or five. The ground-color is pale greenish-blue, on some very faint, on others quite decided. The markings consist of blotches, spots, and speckles of brown-madder or reddish-brown. The deep shell-marks appear lilac. I have before me three eggs, representative of the various styles of markings: No. 1. At smaller end, ground-color largely obscured by the confluence of four or five large surface blotches, around these are smaller blotches, and as the equator of the egg is approached the blotches give place to spots and the spots to speckles, so that the basal half

of egg is unmarked except by speckles and deep shell-blotches. Speckles are also scattered over the smaller end, between and upon the blotches and spots. No. 2. At larger end are an abundance of blotches, occasionally confluent, about the size of the letter o of this type. The equator of egg is comparatively free from blotches, but the smaller half is blotched quite abundantly. Between the blotches are spots and speckles, and occasionally deep shell-marks of lilac. No. 3. Pointed half entirely unmarked; basal half thickly speckled with reddish brown; no blotches or spots anywhere. The speckles, although covering the entire base, are so distributed that they form a wreath of almost solid color. The eggs vary in size from .87 to 1.00 in long-diameter, and from .69 to .79 in short-diameter. A common size is about .74 x .96 of an inch.

DIFFERENTIAL POINTS:

Of the seven Thrushes known to build in Ohio, five lay blue or greenish-blue eggs, but they can generally be distinguished from each other by their size and tint. The nests of these species are more readily recognized than their eggs, being easily identified by their size and material of construction. The eggs of the remaining species, the Brown Thrush and the Mockingbird, are entirely different from each other and from the eggs of the other Thrushes, in fact the eggs of *M. polyglottus* are so distinctive in their ground-color and markings, that they bear little resemblance to any other Ohio eggs of the same size.

REMARKS:

Fig. 4, PLATE LXIV, represents three eggs of the Mockingbird; one of them was taken in Ohio in 1880, the other two came from the South. They show the variations in size, shape, ground-color, and markings usually met with.

The Mockingbird visits this State so rarely that little is known about its habits in this climate, and whether it will ever become a common summer resident is open to discussion. As a rule I suppose the tendency is for the northern birds to become more southern, rather than the reverse, yet it is a fact that some southern species have in recent years become common, which formerly were unknown in this latitude, or were rare. It is said by some of the older ornithologists that thirty or forty years ago the Mockingbird was more plentiful here than at present, this seems to indicate that the time is not far ahead when it will be unknown except as a cage-bird.

PLATE LXIV.

Fig. 5. ECTOPISTES MIGRATORIA—Passenger Pigeon.

The history of the Passenger Pigeon, or Wild Pigeon as it is more commonly called, as it is found in Ohio to-day, will consume but little space. Once it summered here in countless thousands, now it is only occasionally that a nest is to be seen, and the birds themselves are met with only in small straggling bands. About ten years ago I found a small colony nesting in a large oak woods, about five miles west of Circleville, but since then I have only encountered these birds in the spring and fall. In October, 1884, I saw a flock of about fifty birds, and in the following spring I saw two feeding in a cattle-yard.

Two broods are commonly reared by a single pair during the summer.

LOCALITY:

The nest is placed in a tall tree in a forest. The locality being selected chiefly with reference to food and water supply.

POSITION:

It is usually situated in a perpendicular or horizontal fork, and may be at any distance from the ground, from the lowest to the highest suitable branches.

MATERIALS:

The principal materials are sticks and straws, arranged crosswise, and interlaced so that they form a platform slightly concave on top. The structure is held in position by the interweaving of the sticks with the branches of support, or by resting upon a large limb.

EGGS:

The eggs are two in number, elliptical in shape, white, unmarked, and measure from 1.35 to 1.55 in long-diameter, by from .98 to 1.08 in short-diameter. A common size is about 1.00 x 1.50.

DIFFERENTIAL POINTS:

See Table.

REMARKS:

Fig. 5, PLATE LXIV, represents three eggs of the Passenger Pigeon, of the ordinary shapes and sizes. It was impossible to obtain a fresh nest in position for illustrating.

Civilization has made marked changes in the habits and numbers of the resident, migratory, and summer-resident birds of Ohio, but in no instance is this change more marked than in the case of the

Passenger Pigeon. As the forests have been cut away these birds have gradually diminished in numbers, until in Central Ohio, a section where formerly the most numerous, they are seldom seen. I have within my easy recollection seen the sky darkened by them during their morning flights to their feeding grounds, and have seen several thousands taken in a single day in a spring-net. But at the present writing, the words occasional visitor and possibly summer resident, describe their numerical position in the bird-list of the State.

In contrast with these few words I shall quote from Audubon. He writes as follows, page 320, "American Ornithological Biography": "The multitude of Wild Pigeons in our woods are astonishing. Indeed, after having viewed them so often, and under so many circumstances, I even now feel inclined to pause, and assure myself that what I am going to relate is fact. Yet I have seen it all, and that, too, in the company of persons who, like myself, were struck with amazement.

"In the autumn of 1813, I left my house at Henderson, on the banks of the Ohio, on my way to Louisville. In passing over the barrens a few miles beyond Hardensburg, I observed the Pigeons flying from north-east to south-west, in greater numbers than I thought I had ever seen them before, and feeling an inclination to count the flocks that might pass within reach of my eye in one hour, I dismounted, seated myself on an eminence, and began to mark with my pencil, making a dot for every flock that passed. In a short time finding the task which I had undertaken impracticable, as the birds poured in in countless multitudes, I rose, and counting the dots then put down, found that 163 had been made in twenty-one minutes. I travelled on, and still met more the farther I proceeded. The air was literally filled with Pigeons; the light of noon-day was obscured as by an eclipse; the dung fell in spots, not unlike melting flakes of snow; and the continued buzz of wings had a tendency to lull my senses to repose. . . .

"Before sunset I reached Louisville, distant from Hardensburg fifty-five miles. The Pigeons were still passing in undiminished numbers, and continued to do so for three days in succession. The people were all in arms. The banks of the Ohio were crowded with men and boys, incessantly shooting at the pilgrims, which there flew lower as they passed the river. Multitudes were thus destroyed. For a week or more, the population fed on no other flesh than that of Pigeons, and talked of nothing but Pigeons. The atmosphere, during this time, was strongly impregnated with the peculiar odor which emanates from the species. . . .

"Let us now inspect their place of nightly rendezvous. One of these curious roosting-places, on the banks of the Green River in Kentucky, I repeatedly visited. It was, as is always the case, in a portion of the forest, where the trees were of great magnitude, and where there was little underwood. I rode through it upward of forty miles, and crossing it in different parts, found its average breadth to be more than three miles. . . . The dung lay several inches deep, covering the whole extent of the roosting-place, like a bed of snow. Many trees two feet in diameter, I observed, were broken off at no great distance from the ground; and the branches of many of the largest and tallest had given way, as if the forest had been swept by a tornado. Every thing proved to me that the number of birds resorting to this part of the forest must be immense beyond conception. . . .

"The breeding of the Wild Pigeons, and the places chosen for that purpose, are points of great interest. The time is not much influenced by season, and the place selected is where food is most plentiful and most attainable, and always at a convenient distance from water. Forest-trees of great height are those in which the Pigeons form their nest. Thither the countless myriads resort and prepare to fulfil one of the great laws of nature. . . . On the same tree from fifty to a hundred nests may frequently be seen:—I might say a much greater number, were I not anxious, kind reader, that however wonderful my account of the Wild Pigeon is, you may not feel disposed to refer it to the marvellous."

PLATE LXIV.

Fig. 6. RALLUS VIRGINIANUS—Virginia Rail.

The Virginia Rail, though not as common as the Carolina Rail, is still quite plentiful throughout Ohio during the periods of its migration, and even during the summer it may be found in suitable localities from the central portions of the state northward, while to the south it occurs with less regularity. At Circleville it arrives in March and April, and is common until late in May; at this time it mostly disappears. The few remaining begin nesting early in June, and rear but a single brood during the season. In September it begins to arrive from the north, and by October is again common. A few cold nights at this season hurries it southward, but stragglers are occasionally found as late as December.

LOCALITY:

Large, bushy swamps, and wet meadows overgrown with rank grass, and dotted occasionally with clumps of rushes, flags, and shrubbery, are the favorite nesting places; but not infrequently a pair of these Rails will choose for their summer home a site bordering a little pond, or even a boggy bit of ground but a few feet in diameter at the source of some neglected spring.

POSITION:

The nest is built either upon a little spot of ground or upon a little mat of rubbish which is slightly above the water level, and not much if any effort is made at concealment.

MATERIALS:

The materials of construction consist of grass, weeds, bits of flag, and strips of rushes loosely and poorly matted together. It resembles closely the nest of the Sora Rail, and is built upon the same plan as the nests of the allied aquatic birds.

EGGS:

The complement of eggs varies from six to ten, eight or nine being the usual number. They measure in long-diameter from 1.15 to 1.30, and in short-diameter from .83 to .93. A common size is .88 by 1.24. The ground-color of the shell is faint yellow-brown, fading somewhat after the eggs are blown. The markings consist of reddish-brown, almost pure burnt-umber, blotches, spots, and speckles. They are distributed chiefly about the larger end, the pointed half of the egg being comparatively immaculate. Exceptionally an egg is quite uniformly marked from point to base. Generally there are a number of deep shell-marks, they are violet-grey in appearance, and often have surface marks superposed on them.

DIFFERENTIAL POINTS:

The Virginia Rail, the Carolina Rail, and the Red-breasted Rail are the only species of the family

that have been found breeding in Ohio. It is probable that the Yellow Rail, and possibly the Black Rail, may yet be discovered nesting in this State. The eggs of the summer-resident species bear a general resemblance to each other, yet the difference in size, ground-color, and markings is quite sufficient to make identification easy. The eggs of the Red-breasted Rail may be known by their size, ground-color, and markings, and the remaining two species may readily be recognized by the ground-color and markings, although in size and shape they are very similar.

REMARKS:

The three eggs illustrated, Fig. 6, PLATE XLIV, show the sizes, shapes, ground-colors, and markings of the eggs of the Virginia Rail. The coloring is that of eggs which have been blown about two years.

The Virginia Rail is a very interesting bird, whether in its wild state or in captivity. I have several times reared young birds of this species and have been much entertained with them. Mr. Maynard has written so accurately of their habits that I can not do better than to copy his text. On page 420, "North American Birds," he says: "The Virginia Rails inhabit the wet, fresh water marshes from Canada to Florida, but appear to prefer those which are partly grown up to bushes. This propensity I could not explain, until I saw one in the aviary of Mr. August Koch, who has fitted up an abode for captive birds with great care, having a fountain, miniature pond, rock work with grottos, all embellished with numerous plants, among which are some vines that twine up to the ceiling. One of the most attractive birds, among many which lived in this enclosure, was the Rail mentioned, which was quite tame, and which evidently behaved much as it would have in its native swamp. It fed readily, waded about in the water, and when slightly alarmed, would take refuge among the surrounding ferns, etc.; but what surprised me most, was to see it climb up the vines, which it did with the utmost ease, clinging to the branches with its long claws, and in this way it often reached the top, some ten feet from the ground. The bird was evidently hunting for insects, and this habit was probably acquired when among the bushes in the meadows.

"When only slightly alarmed, the Virginia Rails utter a chuckling sound, but if badly frightened or greatly annoyed, especially during the nesting season, when they have young, they will emit a sharp squeak, but their regular notes are harsh screams, usually given at night. These Rails breed early in June, building on some slightly elevated spot, either in the grass or among the bushes, and when their domiciles are approached the birds quietly leave them. The young leave the nest as soon as hatched, and run nimbly through the grass. They become scattered somewhat during the day, but toward night they will utter sharp cries, in order that the adults may know of their whereabouts, and then the entire brood will gather beneath the parent for warmth. I have, on several occasions, captured these little black Rails in the evening, having ascertained where they were by hearing them peeping. When taken young they become very tame, feeding readily upon bits of meat or insects, behaving much like young chickens. They are, however, very delicate and difficult to rear, as they require considerable attention, especially at night, when they should be kept warm."

PLATE LXIV.

Fig. 7. *RALLUS ELEGANS*.—Red-breasted Rail.

The Red-breasted Rail is not an uncommon migrant in the spring and fall, at which times it is found about marshes and ponds. In the summer it is less numerous by far than during the migrating periods, but it breeds regularly throughout the State, in suitable swamps. I have several times found the young in July nearly grown, and from this I infer the nesting time is June. But one brood is probably reared during a season.

LOCALITY:

About Circleville this Rail builds in the small swampy ponds, places overgrown with saw-grass, cat-tails, rushes, white lilies, and other aquatic plants, and presumably is to be found in similar localities in other parts of the State.

POSITION:

I have never found this nest containing eggs, but I have twice discovered nests which, identifying by exclusion, undoubtedly belonged to the Red-breasted Rail. These nests were situated on the ground a little above the water level, and in every respect except size were like the nest of the Carolina Rail.

MATERIALS:

The nests referred to were composed of blades of grass, stalks of smart-weed, and bits of leaves and fibres from neighboring plants. They were loosely put together, the materials being matted rather than woven. Mr. Maynard, in "Birds of North America," says of the nest and eggs of this species: "*Nests*, placed on the ground in marshy places, composed of grass, weeds, etc. *Eggs*, from eight to ten in number, oval in form, bluish-white or creamy in color, dotted and spotted sparsely with reddish-brown and lilac. Dimensions from 1.15 x 1.55 to 1.25 x 1.75."

EGGS:

It will be seen from the quotation above that eight to ten eggs constitute a full set. Six young birds are the most I have seen in any one brood. Eggs in my possession measure from 1.58 to 1.63 in long-diameter, by from 1.18 to 1.25 in short-diameter. The common size is about 1.20 x 1.60. The ground-color of the shell varies from bluish- or yellowish-white to a decided reddish or flesh tint. The markings consist of blotches, spots, and speckles of umber, inclining to brown-madder or burnt sienna. Many of the markings are beneath the surface, the color of these appearing of different tints, according to their depth. The marks are never very numerous. Sometimes they are confined to the base chiefly, sometimes to the point, but more frequently they are quite regularly distributed over the surface. In the majority of eggs the ground-color is not very different from that of the egg of the Virginia Rail.

DIFFERENTIAL POINTS:

The size of the eggs under consideration is sufficient to distinguished them from the eggs of the other summer-residents of the family, and their size and markings together make a combination so distinctive that there is no difficulty in identifying them, although thrown among eggs of every other summer-resident species of the State.

REMARKS:

The three eggs illustrated, Fig. 7, PLATE LXIV, show the common sizes and the extremes in coloring of the eggs of the Red-breasted Rail, or King Rail. The egg at the left is by far the commonest in size, shape, ground-color, and marking. The one at the right the next most frequent type, while the middle egg represents an unusually highly colored specimen.

The King Rail is frequently mistaken for the Clapper Rail. The latter species is exclusively a salt water bird, and probably has never been seen, if it has ever occurred in Ohio. Of the two, the King Rail is a little the larger and a little brighter colored in plumage, but these differences are so slight that it is not to be wondered at that those persons ambitious to find something new should occasionally encounter the salt water species. I have observed very little difference in the habits of this Rail from those of the more diminutive species. It inhabits the same swamps, feeds upon the same kind of food, and is as difficult to make fly, though easier to shoot when once on the wing, on account of its larger size. Its flesh is especially delicate, in this respect excelling all others of the family. The first of these birds I ever saw my dog brought me, he having captured it in the tall grass bordering a small pond. It was a young bird, certainly not sufficiently feathered to fly. Since then I have killed a good many, and several times have found half-grown young following their parents. A few years since, while standing in mud and water hip-deep, waiting for Wood Ducks to come into a small pond to roost, I had an opportunity of observing a Red-breasted Rail feeding and playing in its natural home. I was first attracted by the bird swimming toward me from a bunch of rushes; it sat upon the water like a Duck and leisurely propelled itself along, occasionally picking at something upon or beneath the surface. Considering the anatomy of its feet I was surprised how swiftly at times it could swim. Having approached within ten feet of me, it walked onto some submerged rubbish and began pluming itself. After this act was satisfactorily performed, during which time it repeatedly stretched its wings and long legs, it climbed among the roots of some aquatic bushes and rested, until the report of my gun frightened it away.

PLATE LXIV.

Fig. 8. SCOPS ASIO—Little Screech Owl.

The Little Screech Owl, or Mottled Owl, is one of the commonest of its tribe, not only in the State of Ohio, but throughout the United States generally. It is a permanent resident here as elsewhere, caring nothing for extremes of heat or cold as long as mice and other small game abound.

It builds its nest early, as do all other Owls, the time being from the last of February to the last of April. But one brood is generally reared during the year.

LOCALITY:

The nest is placed in a hollow trunk or limb of a tree in retired woods, or in an orchard. Sometimes a shade tree about a country dwelling or even in town is the selected site. Next to the thickly wooded islands of rivers this Owl prefers an old and deserted orchard for its home, choosing for the nest a hole in a gnarled and weather-beaten trunk.

POSITION:

The nest rests upon the bottom of the cavity, whether in a perpendicular or horizontal limb. It is seldom nearer the opening than a foot or two and often is eight or ten feet distant. Its height from the ground is very variable, sometimes it is within five feet, and then again it is well toward the top of the tallest tree. Usually it is not higher than fifteen feet.

MATERIALS:

Sometimes the eggs are laid upon the rotten wood in the bottom of the chosen cavity, but usually grass, dried leaves, a few feathers, and like materials are loosely matted together on its floor. The same hole is often occupied for a series of years by a pair of these Owls, in this case there is frequently quite an accumulation of rubbish.

EGGS:

The number of eggs in a set varies from four to six. They are nearly spherical in form, have smooth shells, and are pure white. They measure in long-diameter from 1.34 to 1.58 inches, and in short-diameter from 1.18 to 1.25. A common size is about 1.23 x 1.48.

DIFFERENTIAL POINTS:

See page 216.

REMARKS:

Fig. 8, PLATE LXIV, represents three eggs of the Little Screech Owl, of the common sizes and shapes.

They were selected from a number of sets found in various parts of the State. The middle egg is more oval than usual, the others while ordinary in shape show the variations in size.

Throughout Ohio this species is plentiful, seeming to delight in the gloomy woods along the river banks and in the numerous well wooded districts with which the State abounds, but its occurrence is by no means limited to such localities. It is frequently seen about the trees and barns of the country houses, and it also makes its residence in the smaller towns, where at certain seasons it annoys the restless sleeper with its weird and tremulous notes. For a number of years a pair of these birds have lived in a large oak-tree, which is standing within twenty feet of a dwelling, in a town of six thousand inhabitants. They have always been treated well, and consequently are quite tame, often perching within a few feet of the folks of the house.

In the late summer and fall this otherwise well behaved Owl often catches the unlucky cage-bird that happens to be left out after dark. It will alight upon the cage and frighten its occupant until, in its endeavor to escape, the little captive flutters into the clutches of the Owl, when it is summarily dragged between the wires, leaving the gilded prison with scarcely a feather to indicate the terrible tragedy of the night. Many poor canaries, roosting without the reach of the prowling cat, have thus lost their lives to the wonder and grief of their owners.

As soon as the young become feathered the old birds conduct them from the nest to some suitable limb and there they sit during the day, seldom moving unless disturbed. I have often run across broods of them perched upon some low limb, and occasionally I have taken one or more home and made pets of them. Although timid and stubborn by nature they soon learn to know the hand that feeds them, and soon abandon the habit of ruffling their feathers and snapping their bills except at strangers. They possess the same variations in plumage as do adults, ranging from a very decided red through all shades of gray and brown, and even young from the same nest I have seen having these various colors.

The food of the Screech Owl is varied, consisting principally of small birds, mice and insects, of the last they eat large quantities, nor do they despise a frog or fish. They are essentially a home bird, seldom going far from their abode and remaining in the same place many years, as proven by the pair alluded to above, which has dwelt so long in the oak-tree.

Many writers state this Owl can see but little in the day time, an assertion entirely devoid of any facts to support it. Their eyes are unquestionably intended to see with by night, but it does not follow from this that they are blind or nearly so during daylight. Any one who will take the trouble to investigate the matter will learn that the vision of this owl on the brightest day is fully equal to that of a man.

The notes of the Screech Owl are of considerable variety. Mr. Maynard says, writing of this species, page 282, "Birds of North America:" "The alarm note is, as related, a kind of croak but is quite melodious and is given high or low, depending upon the proximity of the object which frightens the bird. . . . "Another of Scopsie's* notes, or rather a series of them, indicates anger or dislike, for when a stranger approaches his box, especially if he be sitting outside of it, he will raise his ear tufts, wink his eyes slowly, at the same time uttering a rattling, guttural sound. This is merely indicative of antipathy, for when handled by any one whom he does not fancy, he will give the same sound, much louder and in a higher key, frequently ending in a kind of scream." . . .

Besides these sounds this Owl possesses a love song, consisting of a few simple notes of varying loudness, uttered sometimes slowly, sometimes rapidly, and upon the whole not unpleasing to the ear.

*Scopsie was Mr. Maynard's pet Owl.

PLATE LXIV.

Fig. 9. PHALAGROCORAX DILOPHUS FLORIDANUS—Florida Cormorant.

The Florida Cormorant is properly an inhabitant of the South Atlantic and Gulf States, coming north however to the Ohio, and perhaps somewhat farther. Dr. Wheaton says, speaking of this species: "Spring and fall migrant in Western Ohio, summer resident in some localities. Breeds."

It probably arrives here along with other aquatic birds about April, building its nest in May or early June. It is certainly a rare bird now; I have myself never seen its nest.

LOCALITY:

Cormorants are found in the greatest abundance in the neighborhood of some permanent body of water, such for instance, as some of the State reservoirs; they are also found occasionally along any of the larger rivers. The nest is usually built in a tree, or, in places where trees are not available, upon a rocky cliff. The latter would seem to be the more natural locality, but at the reservoirs a dead tree partially submerged seems to be the favorite nesting site.

POSITION:

When in a tree, the nest rests in a fork formed by several large branches at no great distance from the ground. When on a rocky cliff, it is placed upon a bare horizontal shelf. In the building season the birds form rookeries, a great many nests often being within a small space.

MATERIALS:

The materials of construction are very simple, consisting merely of a few dry sticks, loosely laid together in the fork of some convenient dead branch, or of marsh grass, or something of that nature, when the nest is built on a rock. But in either case it is a rude affair and entirely exposed.

EGGS:

The complement of eggs is three or four. They are ovoid in form, greenish-blue in color, and are covered with a peculiar deposit of dirty white lime. They measure in long-diameter from 2.25 to 2.50, and in short-diameter from 1.38 to 1.60. A common size is about 1.50 x 2.35.

DIFFERENTIAL POINTS:

The eggs are altogether unique in appearance, certainly a partial compensation for their extreme homeliness. Usually there is some small spot upon the shell where the greenish-blue background shows through the outer calcareous deposit, but if this does not exist the lime covering can easily be scraped off with a knife, so as to show the true shell.

REMARKS:

Fig. 9, PLATE LXIV, represents three eggs of the Florida Cormorant, of the common sizes and shapes. The egg at the left shows a very rough deposit of lime on the shell; the one to the right shows the color of the true shell, through a break in the outer covering made with a knife.

The Florida Cormorant is merely a localized variety of the common Black Cormorant. Dr. Wheaton says: "Simply a localized southern race of *dilophus*, smaller in general dimensions, with relatively larger bills, as usual in such cases; the sac seems to be more extensively denuded."

It is at present but a rare bird in Ohio, although not many years ago it would seem to have been quite abundant, as Dr. Langdon, quoting from an account furnished him by Mr. Chas. Dury, of Cincinnati, says: "On the south side of the reservoir, about seven miles from Celina, was the 'Water Turkey' rookery. Here I used to go to shoot them, with the natives who wanted them for their feathers; I have helped kill a boat load.

"One season I climbed up to their nests and got a cap full of eggs. The nests were made of sticks and built in the forks of the branches. The trees (which were all dead) were mostly oaks, and covered with excrement. I found from two to four eggs or young to a nest. The young were queer little creatures—looked and felt like India rubber. The old birds flew around in clouds, and made their croaking notes, indicative of their displeasure at my presence. Some of the trees had ten or twelve nests on them. As the timber has rotted and blown down, the birds have become less and less numerous."

The above circumstances occurred in June, 1867, since when, as Mr. Dury states, these birds have rapidly decreased in numbers.

Dr. Langdon notes its capture, in June, at Sandusky Bay, but says: "My own observation of the species in Ohio is confined to a single specimen found floating in the reservoir late in October, 1874, when its comrades had probably migrated. It has also been identified on both the Miamis during its migrations."

The Cormorant is extremely abundant in Florida, frequenting all the rivers as well as the sea coast, their ungainly forms being seen perched upon the top of almost any stake or piece of brush sticking out of the water. They are fierce, pugnacious birds when cornered or wounded, but very shy withal. Being so little acquainted with the bird myself, I shall quote from Maynard's excellent account of the Black Cormorant, which applies equally well to the bird now before us, it being only a variety of the black species. He says: "The collector in Florida soon learns the position of every stake or buoy that stands in the water, for they are generally ornamented by a Cormorant, but these wary birds know how to take care of themselves, and it is seldom that one can be approached near enough to be shot.

"Even while nesting they are very shy, and whenever a rookery is approached, all the birds rise, circle about in confusion for a short time, then retreat a few hundred yards and settle down in a compact body upon the water. Nor will they return until they are sure that the intruder has departed.

"I found the eggs of the Black Cormorant freshly deposited on the Florida Keys, about the twentieth of March, and the birds continued to lay from that time till the middle of April. Late in May the black, downy young are nearly fully grown, but still remain in the nest as they are comparatively helpless, being unable to fly, and are regularly fed by the parents. When approached at this season, however, they display all the wariness of the old birds, for after disgorging the contents of their stomachs, as is the custom with the young of many fish-eating birds when disturbed, they will drop from the nests or limbs on which they are perched into the water, for the bases of the trees in which their homes are placed are nearly always submerged, after which it is almost impossible to secure one, as they dive and swim both beneath and on the surface of the water with the greatest ease."



PL. LV
SUIRUS AURICAPILLUS
GOLDEN-CROWNED THRUSH.



PLATE LXV.

SIURUS AURICAPILLUS—Golden-crowned Thrush.

The Golden-crowned Thrush, or Ovenbird, as this species is sometimes called, from the resemblance of its nest to an old-fashioned oven, arrives the last of April or the first of May, and, during the summer is a common resident. It departs for its southern home about the first week in September, unless the weather is exceptionally fine, in which case it may remain several weeks later. During its residence here, each pair usually rears but a single brood of young, but if the first set of eggs should be destroyed a second nest is soon built. This fact accounts for many of the late nests, but it is probable that two broods are occasionally hatched by a single pair of birds. Ordinarily oviposition is completed by the 20th of May, and early in June the young are hatched.

LOCALITY:

The nest is built in dense, solitary woods, old timberland, in which there are little ravines, prostrate, decayed trunks of trees, and considerable underbrush being preferred; but these birds are so plentiful that the nest may be found in almost any upland wood not cleared for pasture.

POSITION:

The nest is placed on the ground at the foot of a bush or sapling, beside a log, or among the leaves and grass in a thicket of bushes.

MATERIALS:

Leaves, leaf-stems, grass, twigs, hair, lichens, moss, and fibres and shreds from various plants compose the materials of construction. Externally the nest is chiefly leaves, while within it is lined with grass, and sometimes horse-hair and fibres. Between these two layers may be found in various proportions any or all of the materials mentioned above. The whole is loosely interwoven and matted into a somewhat egg-shaped mass, with an entrance to its interior at the larger end, somewhat above its axis. Its external diameter is from five to seven inches. Within, the cavity is globular, and from three to three and one-half inches in diameter, while the doorway is from one and one-half to two inches in diameter. After the nest becomes a few days old the entrance becomes oval, the shortest diameter being perpendicular, this is due to the weight of the roof; rarely a nest is built without the domed roof.

EGGS:

The complement of eggs is four or five. When blown the shell is white, fairly well polished and of firm texture. They measure in long-diameter from .76 to .84 of an inch, and in short-diameter, from .50 to .60. A common size is .55 x .80. The markings consist of blotches, spots, and speckles of different shades of reddish-brown, those beneath the surface appear grey. Usually they are limited to the larger

end, and sometimes are confluent, or form a wreath. Occasionally an egg is spotted regularly from point to base.

DIFFERENTIAL POINTS:

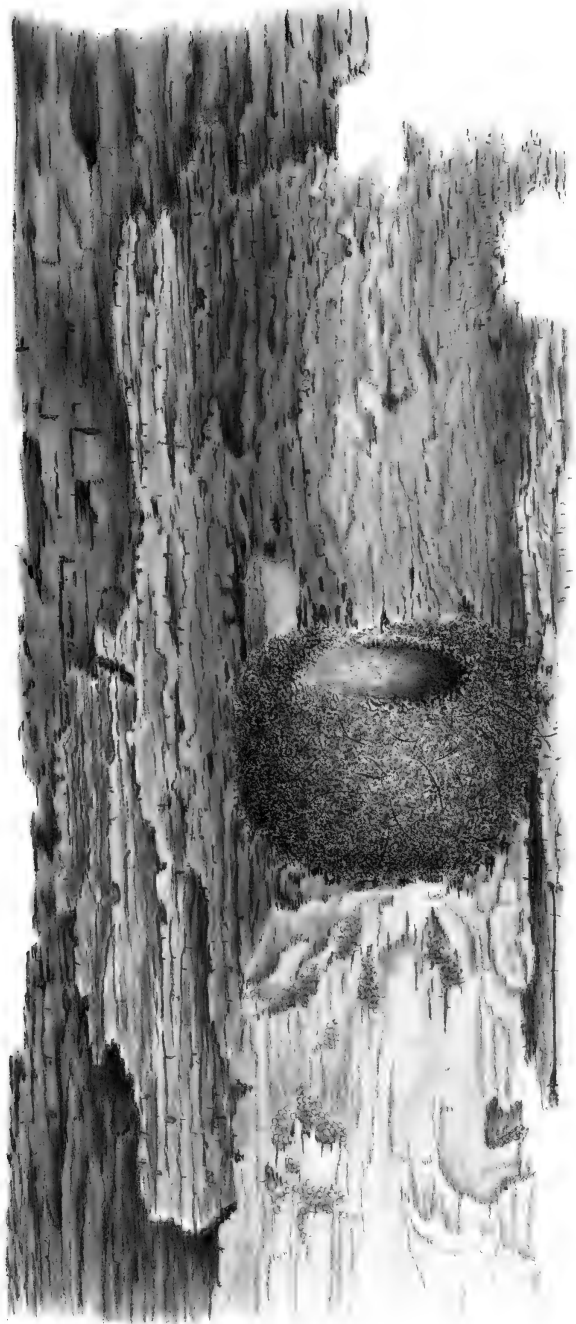
The nest is sufficiently characteristic in style of architecture and dimensions to make identification easy and certain. The eggs are less readily known. See table.

REMARKS:

PLATE LXV represents a nest and three eggs of the Golden-crowned Thrush. The former was built in May, 1885; the latter were taken from three sets found during the past ten years. The nest is typical in size, shape, and materials of construction, and the eggs are of the ordinary size, shape, and markings, the one at the left being perhaps the most typical.

Any visitor to the woods during the months of May and June, must be startled by the shrill *te cha, te cha, te cha*, of the Golden-crowned Thrush, at first uttered so low as to sound at a distance in the bush, and then becoming louder and louder with each utterance, and also more rapid, until it becomes so loud that it is painful to the ear, when suddenly, having reached its climax, it ceases. While wondering how vocal chords so small as a bird's, for the notes are evidently from a bird, can make such a volume of sound, it again begins, soft, slow, and low, and terminates as before. The author of these notes is difficult to discover, but a little quiet search may perhaps reveal a spotted-breasted little bird perched on some low limb or stepping about upon the ground. He is a home body, seldom going far from his mate, to whom he repeats his cheering song at intervals. The nest of every Ovenbird in the woods may be located within a few yards by observing the singing male, but they are very difficult to actually find on account of their situation and protective covering. Dilligent search about every log, and at the foot of every sapling and bush is the surest and quickest way to discover them.

The Golden-crowned Thrush spends most of its time on the ground, searching for food among the decayed leaves. It walks about and scratches in the soft loam like a chicken, instead of hopping like others of its family. It is very attentive to its young, caring for them long after they can fly.



PLXVI
PARUS ATROCAPILLUS
BLACK-CAPPED CHICKADEE

PLATE LXVI.

PARUS ATRICAPILLUS—Black-capped Chickadee.

The Black-capped Chickadee or Common Titmouse is known generally over the greater part of the United States, and by mutual consent is looked upon as the typical representative of its family. It crosses the line of the summer habitation of *P. carolinensis* in Ohio, and at such places both species are found together. Dr. Wheaton says, Vol. IV, Geological Survey of Ohio: "Abundant resident in Northern and probably Eastern Ohio. Twenty-five years ago the Black-capped Titmouse was as abundant in Central Ohio, as the Tufted. Since that time it has become quite rare, and a winter visitor only in the vicinity of Columbus. In some seasons none are seen. I have seen but two or three individuals in the city limits within ten years."

Occasionally I have found this species in Central Ohio in the summer. It nests early in May. Two broods are frequently reared during a season.

LOCALITY:

"While it seems to prefer the edges of woods as best affording the means of food and shelter, it by no means confines itself to these localities, not only appearing familiarly around the dwellings in the winter season, but also occasionally breeding in open and exposed places. A hollow post of a fence in the midst of open cultivated fields, a decayed stump near the side of a public highway, a hollow log in a frequented farm-yard, and even the side of an inhabited dwelling, are localities these birds have been known to select in which to rear their young. On one occasion a pair had built its nest over a covered well, which connects with the dwelling by a side door, through which water was drawn at all hours of the day by means of buckets and a rope, the wheel for which was in close proximity to their nest. They manifested no uneasiness, however, and even after the young were ready to fly, the whole family would return to the place for shelter at night and during inclement weather."

Sparcely timbered borders of streams, and ravines about creeks and springs it also frequents for nesting sites, usually excavating a cavity in a dead limb, trunk, stump, or even a prostrate log. Some individuals either incompetent or hurried build in a deserted Woodpecker's hole, or a natural cavity.

POSITION:

As a rule the nest is over four and under twenty feet from the ground. When an excavation is made the birds commonly select a piece of dead timber of considerable size, and, having made a round hole for the doorway, this is projected into the wood for an inch or more, and then turning downwards enlarges into a cavity about three inches in diameter at its widest part, by five or six inches in depth. The excavation is often as well and accurately formed as that made by any of the Woodpeckers.

MATERIALS:

Differing from most birds that excavate a home in decayed or dead timber, the Black-capped Chickadee

carries an abundance of soft material into the cavity, and forms a soft felt-like nest, in which the mother-bird lays her eggs and rears her young. Fine vegetable fibres, vegetable down, wool, moss, and fine, short hairs from various animals compose the bulk of the nest. Soft fur and downy feathers are also sometimes found in the lining. When a natural cavity is chosen the sight is often much too large and a great deal more material is demanded than when the builders do their own carpentry, but the internal dimensions of the nest are always about the same. In shape the structure is globular or purse-like, from two and one-half to three inches in diameter, by from one and one-half to two and one-half deep externally. Within it measures about an inch and five-eighths each way. The mouth of the nest is usually contracted so that it measures from an inch and one-eighth to an inch and three-eighths. The diameter of the hole into the cavity is about an inch and one-eighth.

EGGS:

The complement of eggs varies from five to eight, six being probably the most frequent number. They measure in long-diameter from .58 to .65, and in short-diameter from .47 to .52. A common size is about .48 x .60 of an inch. "North American Birds" gives the average size as .58 x .47. Maynard's "Birds of North America" gives their dimensions as .45 to .50 in short-diameter, by .50 to .60 in long-diameter. Minot gives .50 x .63 as the average size. The ground-color of the shell is white. The markings consist of blotches, spots, and speckles of light reddish-brown; at times almost pure burnt sienna. Deep shell-marks are infrequent.

DIFFERENTIAL POINTS:

The nests of *P. carolinensis* and *P. atricapillus* are alike in materials of construction and size as well as in location. The eggs are also remarkably similar, yet a large series of each make apparent certain differences. The latter, according to eggs in my possession, average a little more in short-diameter, and a little less in long-diameter; this makes them the nearer spherical in shape. There are, however, a number of eggs of each which measure .48 x .60, or within .01 of this. The former contain not only the most marks, but they are upon the whole larger. The color is the same for each. I do not believe it is possible to distinguish with certainty the nests and eggs of the two species.

REMARKS:

PLATE LXVI represents a nest and three eggs of *Parus atricapillus*. The former was taken in Northern Ohio in 1885, the latter were selected from three sets, only one of which is from this State. The nest was three feet from the ground in a decayed stump, and the cavity was made by the Chickadees. It is composed entirely of moss and very fine downy fibres, the lining being similar to the exterior except that the fibres are more numerous within. For differences between the two species see page 228.



Pl. LXVII.
OPORORNIS FORMOSA
KENTUCKY WARBLER

PLATE LXVII.

OPORORNIS FORMOSA—Kentucky Warbler.

The Kentucky Warbler is a rare summer resident, occurring in particular localities in the southern and western parts of the State. Dr. Kirtland found its nest at Cleveland, Audubon notes it in South-western Ohio, and Dr. Langdon writes of it as a well known summer bird of this same district. I have never seen the species in Central Ohio, although I have made diligent search for it, and these nests are all that I can hear of as being found in the State; but others certainly must have been taken. It arrives in the vicinity of Cincinnati about the first of May, and remains until September, during which time it rears a single brood.

LOCALITY:

Dr. Langdon, writing of a nest of this species which he found near Madisonville, says: "The locality chosen for this nest was a gentle slope, well wooded and covered with undergrowth, situated within a short distance of a small woodland stream on the border of an open glade."

POSITION:

"The nest, which was placed on the ground at the root of a small elm sapling, was concealed by a sparse growth of weeds." Dr. Gearhardt of Georgia, found several nests of this Warbler, all of which were on the ground, usually under a tuft of grass in a dry place. It is said, that sometimes it is placed in a bush, or in a bunch of rank weeds or grass.

MATERIALS:

Continuing, Dr. Langdon says: "The foundation was a saucer-shaped mass of beech and maple leaves loosely interwoven with a few weed-stems and retained its shape sufficiently well to permit careful handling without injury; surmounting this basal portion was the nest proper, a rather bulky and inelegant structure, elliptical in shape, composed of dark brown rootlets and weed-stems, with which were interwoven a few dried leaves. There was also a trace of an effort at horse-hair lining, a half-dozen hairs perhaps being dispersed around its interior. Its measurements are as follows: Internal long-diameter, $2\frac{1}{2}$ inches; internal short-diameter, 2 inches; depth of cavity, $1\frac{1}{4}$ inches; average thickness of nest proper, about $\frac{3}{4}$ inch; ditto of foundation, about 1 inch."

Page 294, "North American Birds," says: "Nearly all nests met were made externally of a loose aggregation of dry oak and chestnut leaves, so rudely thrown together as hardly to possess any coherence, and requiring to be sewed to be kept in place. The interior or inner nests were more compactly interwoven, usually composed of fine dark-brown roots. Instead of being small, they are large for the bird, and are inelegantly and clumsily made. They measure four inches in their diameter, three in height, and two in the depth of their cavity. One nest, is large and peculiar in its construction.

It is nearly spherical in shape, with an entrance partially on one side and nearly arched over. The periphery of this nest is composed exclusively of partially decayed deciduous leaves, impacted together, yet somewhat loosely. Within this outer covering is a fine framework of stems, twigs, and rootlets, and within this a snug, compact lining of hair and fine rootlets and fibres. This nest is six inches in diameter and five in height. It contained four eggs."

EGGS:

"These eggs have an average length of .69 of an inch, and a breadth of .56 of an inch. They have an oblong-oval shape, a crystalline-white ground, and the entire surface is sprinkled over with fine dots of red and reddish-brown. These, though most abundant about the larger end, are nowhere confluent, and do not form a crown." The nest taken near Madisonville referred to above, contained four eggs, exclusive of a Cowbird's egg. They were "spotted and speckled every-where with reddish-brown and lilac on a glossy white ground, the markings on two specimens being massed at the larger end, while those on the other two form a distinct 'wreath' around the rather blunt apex. They were far advanced in incubation (May 28), and measure respectively, .72 x .54, .73 x .56, .75 x .56, .73 x .55."

By the kindness of Prof. Baird and Dr. Bendire, I have had access to the collection of eggs of this species in the National Museum, and I have carefully measured them, and have selected typical and extreme specimens in shape, size, and markings for the illustration accompanying. The egg to the left upon the line is of the most ordinary pattern, while the other two are more unusual in size and markings. The average of all the specimens in the museum is .76 x .54 of an inch. In long-diameter they vary from .72 to .80 and in short-diameter, from .55 to .58. The ground-color of all is white, and the markings consist of blotches, spots, and speckles of reddish-brown, with but few deep shell-marks. One pattern of egg is speckled from point to base, sparingly at the point and base, but becoming more and more heavily marked as the equator of the egg is approached, to the basal side of which they become so numerous as to form a heavy wreath of confluent marks. Another is blotched about the base with a deep shade of reddish-brown, and between the blotches and over the remainder of the shell are numerous speckles of the same color, while here and there are blotches and spots beneath the surface, which appear lilac. A third pattern, and this perhaps is the commonest form of all, is blotched, spotted, and speckled over the entire surface, heaviest, however, about the base. All the marks are subdued in tint and have irregular and indistinct outlines, like color which is laid on damp, porous paper. While I have endeavored to give the three types of eggs, a typical and two extremes, it must be remarked that none of these are so extreme as to be uncommon. Indeed, in eggs of this size and style of marking, it is difficult to select any one or even three patterns which may be said to be representative.

DIFFERENTIAL POINTS:

See Table.

REMARKS:

PLATE LXVII represents a nest and eggs of the Kentucky Warbler. The nest was found on the 20th of May, 1882, in the State of Kentucky, near the Ohio line. It was built in a piece of thickly timbered bottom woods on the ground near an elm sapling, and was unprotected by grass or weeds.

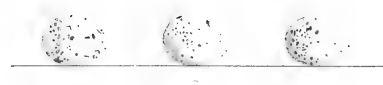
Its foundation is composed of dead leaves of elm and oak and leaf-stems. Within this is a superstructure of leaf-stems, pieces of slender vine, and rootlets, and this is lined with a compact layer of fine dark rootlets and a few horse-hairs. The cavity is round and measures about 2 inches in diameter by $1\frac{5}{8}$ inches in depth. The external diameter of the structure is about five inches. By an accident the eggs to this nest were broken before measurements were taken. The eggs are colored from cabinet specimens.



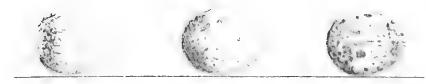
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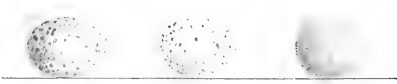
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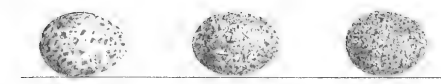
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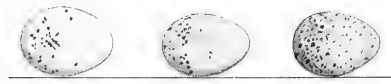
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6



7



8



9



10



11



12



13

Fig. 13 RHYACOPHILUS SOLITARIUS
SOLITARY SANDPIPER

- Fig. 1 TACHYCINETA BICOLOR
WHITE-BELLIED SWALLOW
- Fig. 2 DENDROICA MACULOSA
BLACK-AND YELLOW WARBLER
- Fig. 3 PARULA AMERICANA
BLUE YELLOW-BACKED WARBLER
- Fig. 4 SIURUS MOTACILLA
LARGE-BILLED WATER THRUSH
- Fig. 5 LOPHOPHANES BICOLOR
TUFTED TITMOUSE
- Fig. 6 SITTA CAROLINENSIS
WHITE-BELLIED NUTHATCH

- Fig. 7 PASSERCULUS SANDWICHENSIS SAVANNA
SAVANNAH SPARROW
- Fig. 8 CARPODACUS PURPUREUS
PURPLE FINCH
- Fig. 9 MNIOTILTA VARIA
BLACK-AND-WHITE CREEPER
- Fig. 10 HYLLOCICHLA UNALASCÆ PALLASII
HERMIT THRUSH
- Fig. 11 ZAMELODIA LUDOVICIANA
ROSE-BREADED GROSBEAK
- Fig. 12 DOLICHONYX ORYZIVORUS
BOBOLINK

PLATE LXVIII.

Fig. 1. *TACHYCINETA BICOLOR*—White-bellied Swallow.

This beautiful Swallow is a common summer resident, but is irregularly distributed. It arrives about the first week in April and remains until September or October. It usually nests the last of May and commonly rears but a single brood during the season.

LOCALITY:

The natural desire of the White-bellied Swallow is for sluggish moving rivers and large ponds of stagnant water, and so far as my observation extends, they frequent such places entirely, in company with the Rough-winged and Bank Swallows. In the Eastern States, and, according to Dr. Wheaton, also in Northern Ohio, its habits have materially changed. Capen says: The nest "is usually placed in boxes and the like, put up for its accommodation. In sparsely settled districts it nests in hollow trees." Page 288, "Geological Survey of Ohio," Vol. IV, is the following: "The White-bellied Swallow is, in the vicinity of Columbus, rather rare except during the migrations; formerly, they were abundant, and nested in the holes of dead trees along the river banks; as these trees disappeared, the Swallows removed to some more suitable locality. I have never known them to breed in bird-boxes in this vicinity, though they sometimes do so in Northern Ohio." Along the Scioto and its tributaries, this Swallow still builds in its primitive way, selecting for the nest a natural cavity or an abandoned nest of a Woodpecker in some dead tree upon the bank. Just above Circleville, along the river, there are a number of large dead sycamores, many of the limbs of which are fairly honeycombed with Woodpecker's holes. Here every year these Swallows build, but most of the nests are inaccessible.

POSITION:

The nest rests upon the bottom of the cavity, being supported solely from below. Its distance from the ground varies from ten to forty feet; perhaps sometimes it is even higher, but generally it is within thirty feet of the surface.

MATERIALS:

The chief materials of the nest are grass, straws, and leaves for a foundation, and upon these an abundance of feathers from chickens, geese, ducks, or other birds is placed for a soft lining.

One nest taken in 1882, was composed of a few old grass-stems, and four large, soft goose feathers, arranged with their soft ends to the center. Another taken in 1879, had a foundation of blue grass, and upon this was placed a large handful of white goose feathers. The average nest is between these extremes in quantity of material.

EGGS:

The complement of eggs consists of four, five, or six, five being perhaps the most frequent number. They are pure white, with shell so thin that the yolk shows through, giving a pinkish cast to fresh specimens. In long-diameter they vary from .68 to .84, and in short-diameter, from .51 to .58; a common size is about .74 x .52.

DIFFERENTIAL POINTS:

The eggs of the Rough-winged Swallow, the Bank Swallow, and of the species being considered, measure as follows, the order in which they are named being preserved:

Long-diameter, .68 to .76;	short-diameter, .50 to .54;	common size, .52 x .69.
“ .60 to .72;	“ .47 to .51;	“ .49 x .68.
“ .68 to .84;	“ .51 to .58;	“ .52 x .74.

From this it will be seen that it is difficult if not impossible to identify eggs alone of these Swallows with any degree of certainty. Other data, such as locality, position, and materials of the nest must accompany them in order to be certain of the species.

REMARKS:

PLATE LXVIII, Fig. 1, represents three eggs of the White-bellied Swallow, the middle one being the common size, the others the extremes.

Nearly all our Swallows show the influence of the civilization of this country, and even the White-bellied Swallow is not exempt. The Barn Swallow has entirely deserted its former haunts for the beams and rafters of barns; the Cliff Swallow has abandoned the caves and rocky ledges for the protecting eaves of our out-buildings. The Purple Martin now takes advantage of the bird-boxes of the town and country, while the Rough-winged Swallow nests in crevices about masonry and frame buildings.

In the East, where the country has been long settled, according to "North American Birds," the White-bellied Swallow is most numerous in the towns and cities, and is seldom found building except in some box arranged for the purpose. It is to be presumed that before many years the same influences which have worked such a change there, will also domesticate here our wild and nature-loving Swallow, whose white and silvery breast is now only seen along the most uninhabitable banks of our streams. Then there will remain only the little Bank Swallow to be converted to the ways of man. Just what changes may yet take place in the nidification of this species it is impossible to predict, but that it will escape the influence of civilization entirely, is improbable.

PLATE LXVIII.

Fig. 2. *DENDRÆCA MACULOSA*—Black and Yellow Warbler.

The Black and Yellow Warbler is a rare summer resident in the northern part of Ohio. Over the rest of the State it usually occurs only as a migrant. In Central Ohio it is a plentiful species in May, and also in the fall. Dr. Wheaton has seen it the first week in June in the neighborhood of Columbus. This "indicates its breeding at no great distance." It builds in June, and rears but a single brood during the season.

LOCALITY:

It prefers low, heavily timbered woods for its home, selecting for the site a bush or sapling. Audubon found its nest among the horizontal twigs of a low fir tree; Mr. Kennicott found one in a similar position in a spruce tree near Great Slave Lake; and Mr. R. Dean met with a nest near Lake Umbagog in the fork of a low spruce. Many other nests have been taken, all of which are in a like locality.

POSITION:

It is placed in a horizontal or perpendicular fork from two to ten feet from the ground.

MATERIALS:

A nest before me is a frail affair, resembling very much that of a Chipping Sparrow or Field Sparrow in material and mode of construction. Externally is a foundation of light colored tendrils of a slender trailing vine. Within this basket work is a thicker layer of still more slender, brown-madder-colored vegetable threads of vine, and within this is a lining of hair-like fibres of black moss. The diameter of the cavity is one and seven-eighths inches; the depth is one and one-eighth inches. The wall in the thickest place is three-quarters of an inch, but the whole structure is so loosely woven that even here it can be readily seen through when held up to the light. This nest was found in 1884, at Grand Menan, N. B., in a fork of a low spruce, three and a half feet high. One of the nests referred to above "was only one and a half inches deep, with a diameter of three and a half inches; the cavity only one inch deep, with a diameter of two and a half inches. It was made almost entirely of fine stems of plants and slender grasses and a few mosses. The cavity was lined with finer stems, and fine black roots of herbaceous plants." Capen says, page 25: "Of nine nests I have examined, all are similar in construction. They are composed of fine dry grass, weed-stalks, twigs, and fine rootlets, with a small amount of plant-down here and there attached to the outside, thinly lined with horse-hair and black fibres of some variety of moss. They are lightly though strongly made, and the bottoms of all were so slightly built as to present a sieve-like appearance." Page 29, "Nests and Eggs of North American Birds," Mr. Davie says:

"It is a light structure, resembling that of the Chestnut-sided Warbler, composed of twigs, weed-stalks and grasses, lined either with horse-hair or fine rootlets."

EGGS:

The complement of eggs is four or five. Davie describes them as follows: "Creamy white, blotched sparingly over with large spots of lilac and amber, and wreathed about the larger end with brown, clouded with lilac spots and blotches; usually four and sometimes five, and measure from .62 to .65 by .46 to .50." Dr. Brewer, in "North American Birds," writes: "The eggs of this Warbler are, in shape, a rounded oval, one end being but slightly more pointed than the other. They measure .62 of an inch in length, and .49 in breadth. Their ground-color is a light ashen hue or a dull white, and this is more or less sprinkled with fine dots and blotches of a light brown. For the most part, these are grouped in a ring about the larger end." Eggs in my possession average about .49 x .65. Some are pretty heavily blotched and speckled, others less so, while still others are entirely and uniformly speckled. The color of surface-marks is nearly brown-madder in tint, never very decided in tone; deep shell-marks appear gray. Some eggs look as if most of the color had been washed off, or had been applied very wet and had soaked in.

DIFFERENTIAL POINTS:

See table.

REMARKS:

PLATE LXVIII, Fig. 2, represents three eggs of the common size and markings of the Black and Yellow Warbler. I am satisfied these Warblers regularly build about Circleville, but I have never found their nest. I have, however, seen a pair of old birds feeding their young. So far as I am aware, this nest has yet to be discovered in Ohio. There are a number of birds which regularly or irregularly breed in the State, that I have searched for in vain. Some of these, like the Cerulean Warbler, are common, but there are so many obstacles in the way of finding their homes, that search is almost useless unless favored by accident.

PLATE LXVIII.

Fig. 3. *PARULA AMERICANA*—Blue Yellow-backed Warbler.

The Blue Yellow-backed Warbler is inserted here as a summer resident of Ohio on the authority of Dr. Wheaton, "Geological Survey of Ohio," Vol. IV, page 239: "Not common, spring and fall migrant in Southern and Middle, summer resident in Northern Ohio. Mr. Read notes it as 'common in the spring, a few spend the summer.' Dr. Kirtland says: 'I have repeatedly seen them feeding their young in July.' It may breed in the vicinity of Columbus, as I saw a specimen in my garden June 30, 1879. Mr. Ridgway says it breeds in Southern Illinois." It arrives in the neighborhood of Circleville about the first week in May on its way to northern breeding grounds, and returns in September. When it occurs as a summer resident, it probably builds in June, and rears but a single brood during a season.

LOCALITY:

Page 209, "North American Birds," says: "Even where most common it is not an abundant species, and is to be found only in certain localities, somewhat open and swampy thickets, usually not of great extent, and prefers those well covered with the long grey lichens known as Spanish moss. In such localities only, so far as I know, do they breed. . . . Mr. Audubon speaks of this species as breeding in Louisiana, but his description of the nest differs so entirely from such as are met with in Massachusetts as to suggest doubts as to the correctness of the identification. He describes them as flitting over damp places, the edges of ponds and streams, and pursuing their prey with great activity. They resort to the woods as soon as the foliage appears on the forest trees, and glean among the leaves for the smaller winged insects."

POSITION:

"The nests are sometimes constructed on the sides of trunks of trees, when covered with the long grey lichens, but are more frequently found hanging from branches, usually not more than six or eight feet from the ground."

MATERIALS:

All authors give very similar descriptions of this nest. In fact, I know of no species that builds a more uniform structure, so far as shape and materials are concerned. Maynard says: "Some beautiful specimens of these nests are composed of long gray moss, but differ from that described above in being perfect little purses, with the entrance hole on the side. There is no other material used for lining than that of which the structures are made." Davie says: "Nests in my collection are beautiful structures. They are pensive, with an entrance on one side. They are composed of long greenish or gray Spanish moss. As a whole, the nest is one of the most curious specimens of bird architecture; the long pieces of moss are woven and twined together in a large, purse-shaped mass." Minot says: "The nest is globular,

with an entrance on the side, and is composed principally of hanging mosses." Capen says: "Nests are purse-shaped, having a small hole for entrance at the top or side. They are composed of hanging mosses and lichens, with a slight lining of pine grasses and a few hairs, occasionally without any lining whatever. They are usually placed near the end of a branch in a hemlock, cedar, oak, or old orchard tree, from ten to fifty feet from the ground."

EGGS:

The same writer continues: "Eggs are four in number, and rarely five. They are white in ground-color, finely spotted with light reddish-brown, intermingled with lilac, chiefly about the crown; others quite heavily blotched, and often tending to form a ring about the crown. They are usually laid the first week in June, and measure about .62 by .48 of an inch." Davie gives their size from .62 to .65 in long-diameter by .49 to .52 in breadth. Maynard gives the same dimensions as from .66 to .70 and .48 to .50 of an inch. A set of four eggs before me measures as follows: .62 x .51, .63 x .52, .63 x .50, and .62 x .48. The ground-color of the shell is pure, glossy white. About the base, two of the eggs are spotted and speckled plentifully with very dark brown, almost black; about two-thirds of these marks are beneath the surface, some deeply, others but slightly, so that there are several shades of brown, becoming lilac in the deepest laid marks, the balance of the eggs being but very sparingly speckled. The other two eggs contain several blotches at the crown; otherwise they are similar.

REMARKS:

PLATE LXVIII, Fig. 3, represents three eggs of the Blue Yellow-backed Warbler, from Eastern New York. They are of the common sizes, shapes, and markings. There is but little doubt that this Warbler builds in Ohio, though I can find no nest and eggs in any of the local cabinets. It has been seen in late June in the central part of the State, and I have in my possession a nest and two eggs from near Mt. Sterling which probably belong to this species, though the materials of construction are very dissimilar from that of the eastern nests. It contains a few threads of long gray lichen or tree moss of some kind, and numerous wiry threads of vegetable fibre. In appearance it resembles a Baltimore Oriole's nest, but is much smaller.

PLATE LXVIII.

Fig. 4. *SIURUS MOTACILLA*—Large-billed Water Thrush.

“Common summer resident, but of irregular distribution. Arrives about the middle of April or earlier, and departs in August.

“The Large-billed Water Thrush is one of the birds which is not uniformly distributed, either when migrating or breeding. In general, it may be said that as we approach the northern limit of the range of a species, the individuals representing it become fewer, and, during the breeding season, are only to be found in such localities as are pre-eminently suited to their taste and wants. This appears to be true in this State of the present species, the Yellow-throated, Prairie, and Pine-creeping Warblers, White-eyed Vireo, Whip-poor-will, and perhaps others. When on their migrations they seem to pass rapidly from one breeding locality to another, seldom making a stop at intermediate points.

“In the immediate vicinity of this city, I know the Large-billed Water Thrush only as a rare migrant, appearing sometimes as early as April 13th, and with the Yellow-throated Warblers, the first of the family to arrive. They are then found in wet woodlands and along the muddy wooded banks of streams, never in open places, as is the frequent habit of the Small-billed Water Thrush, nor are they as silent as that species.

“The Large-billed Water Thrush was first introduced as an Ohio bird in my list of 1861, on the authority of Mr. John Kirkpatrick, who informed me that it was found in the vicinity of Cleveland. Dr. Kirtland and Mr. Read had confounded the two species. Mr. Langdon gives it as a rather common summer resident in the vicinity of Cincinnati, and I have seen specimens from Sandusky. My first acquaintance with the bird in the breeding season was made June 19, 1875, in the ‘glen’ at Yellow Springs. Here I found them abundant, and busily engaged in feeding half-grown Cowbirds. I afterwards found them in the ravines above Worthington, in this county, where they were equally abundant, and making preparations for nesting. Here they were indiscriminately in trees, on the ground, or wading on the level slaty bottoms of the shallow brooks. Frequently they mounted to the upper branches of high trees overhanging the ravines, whence their loud and mellow song echoed along the winding banks with surpassing sweetness.”

The above is quoted from Vol. IV of “Geological Survey of Ohio.”

LOCALITY:

Mr. Brewster describes a nest of this species as follows: “The nest taken with the female parent, May 6th, contained six eggs, which had been incubated a few days. The locality was the edge of a lonely forest pool in the depths of a cypress swamp near White River (Indiana). A large tree had fallen into the shallow water, and the earth adhering to the roots, formed a nearly vertical, but somewhat irregular wall, about six feet in height and ten or twelve in width. Near the upper edge of this, in a cavity among the finer roots, was placed the nest, which, but for the situation and peculiar character of its

composition, would have been exceedingly conspicuous." Often the nest is placed beside a log, among the roots of a tree, or at the foot of a sapling, usually in the deepest, dampest woods, along streams, about the border of ponds, and in similar places.

POSITION:

It is generally placed in a little depression on the ground, but sometimes, as when among the roots of an overturned tree, it is several feet high.

MATERIALS:

The materials of construction are leaves, grasses, weed-stems, and similar coarse vegetable materials for the foundation and superstructure, and fine fibrous roots for a lining. The nest referred to above, taken by Mr. Wm. Brewster, is described as follows: "The nest which is before me, is exceedingly large and bulky, measuring externally 3.50 inches in diameter by 8 inches in length, and 3.50 inches in depth. Its outer wall, a solid mass of soggy dead leaves, plastered tightly together by the mud adhering to their surfaces, rises in the form of a rounded parapet, the outer edge of which was nicely graduated to conform to the edge of the earthy bank in which it was placed. In one corner of this mass, and well back, is the nest proper, a neatly rounded, cup-shaped hollow, measuring 2.50 inches in depth. The inner nest is composed of small twigs and green mosses, with a lining of dry grasses and a few hairs of squirrels or other animals arranged circularly."

EGGS:

The complement of eggs is four or five, usually the former number. They are white, blotched, spotted, and speckled with faint reddish-brown; deep shell-marks appearing blue-gray. The commonest type of these eggs is blotched, spotted, and speckled with faint reddish-brown chiefly about the basal third of the shell; the remaining two-thirds being sparingly spotted and speckled. Another pattern has a well defined wreath about the crown composed of confluent blotches, spots, and speckles of a darker shade of the same brown, while the remainder of the egg is blotched or speckled here and there with a much lighter shade. A third egg is irregularly marked from point to base with bold blotches, spots, and speckles. In long-diameter they measure from .69 to .79, and in short-diameter from .58 to .62; a common size is about .75 x .60.

DIFFERENTIAL POINTS:

See table.

REMARKS:

PLATE LXVIII, Fig. 4, represents three eggs of the Large-billed Water Thrush. They were selected from the specimens in National Museum, and are believed to represent the common variations which occur, the middle egg being the pattern most frequently seen.

I have never seen the Large-billed Water Thrush except in the spring, and therefore have been compelled to compile this article from the writings of those who have been more fortunate.

PLATE LXVIII.

Fig. 5. *LOPHOPHANES BICOLOR*—Tufted Titmouse.

The Tufted Titmouse is a common resident, inhabiting both town and country. It builds its nest in May or June, and occasionally a second brood is hatched the latter part of July.

LOCALITY:

The nest of this species occurs in nearly every locality, from the shade-tree along the busiest street of a town, to the densest and dreariest woodland; but the favorite place is a tall tree along a river-bank or on a river-island, situations where the soil is continually damp and overgrown with the rankest vegetation. Here this bird selects a natural cavity or the abandoned home of a Woodpecker in a part of the tree so high that it rears its young in absolute security from man.

POSITION:

The nest rests upon the floor of the cavity, generally a considerable distance from the opening. Its height from the ground is usually forty or fifty feet; occasionally it is as low as eight or ten feet.

MATERIALS:

The amount of material in the nest depends largely upon the size and condition of the chosen cavity. Commonly there is only sufficient to make a warm, soft lining upon which the eggs are placed. The chief substances employed are bits of leaves, grasses, lichens, moss, and often a few feathers and hairs. Dr. Wheaton has found the eggs resting on the bare floor of the cavity.

EGGS:

The complement of eggs is five or six. They measure in long-diameter from .66 to .74, and in short-diameter from .53 to .57; a common size being about .54 x .70. The ground-color is pure white. The markings are made up of spots and speckles, rarely blotches, of brown-madder. On some specimens the color is deep and the spots large and confluent at the base. Others are thickly spotted and speckled from point to base, but most abundantly at the base, with a very light shade of color. Others, and this is perhaps the most frequent type, are sparingly spotted and speckled from point to base, with a slight tendency to the formation of a wreath about the crown. Deep shell-marks are not numerous.

DIFFERENTIAL POINTS:

See Table.

REMARKS:

Fig. 5, PLATE LXVIII, illustrates three eggs of the Tufted Titmouse, of the usual shapes, sizes, and

markings, the middle egg being perhaps the nearest the average in every respect. The specimens from which the drawings were made were kindly loaned for the purpose from the National Museum.

I have often found trees in which this Titmouse was building, but never but once an accessible nest; this contained young. I know of a giant sycamore along the Scioto River, which has a hollow limb about an hundred feet above the ground; this limb has been broken off so that the cavity can be entered from the free end. Here for years the Tufted Titmouse has built and probably safely reared its young. Nearly all the nests of this bird which have come under my observation have been in some such place, where none but the most reckless climber would dare venture.

Dr. Wheaton of Columbus, O., writing of this species, says: "I have seen them in this city throughout the breeding season, carrying materials for building, and feeding their scarcely fledged young. Its ordinary note is a monotonous *dee, dee, dee*, often repeated, as if from habit. Its song is a loud whistle, resembling the syllables *peto, peto, peto*, in addition to which it has numerous and varied notes, some of which are modifications, both of the ordinary notes and of the song, others appear to be an attempt to imitate other birds, the notes of the Blue Jay being frequently recognized.

"I do not think it is generally known that the Crested Titmouse has the singular habit of amusing itself somewhat as the House Wren is said to do. On two occasions I have found them employed in filling holes in trees with flowers of forest trees. In the first instance I watched the birds, apparently a pair, for several days, and saw them carry for a considerable distance the blossoms of the ash, and deposit them in a hole in an ash tree about twenty feet from the ground. At length, tired of waiting, I mounted the tree and found a dark hole only, a stick was thrust into it for a distance of four or five feet, and met no resistance. On the second occasion I met with a similar experience, except that disappointment was not unlooked for. A lady friend complained to me that a pair of the birds vexed her much by picking to pieces and carrying away the moss from her hanging baskets. A gas-post had been put in position in the vicinity, but no lantern or gas-pipe had been attached. Into the cavity of this the birds carried the moss and any other articles which they found portable. Conjecture fails to account for such freaks."

Many birds busy themselves during the time when their partners are sitting, and also later after the brood has been reared, in performing pretty much the same labor as in the construction of their nests. Mark Twain records a fact (?) about the Blue Jay, which occurs to me in this connection, which I believe is not generally known by ornithologists. The reader is referred to page 38 of "A Tramp Abroad."

PLATE LXVIII.

Fig. 6. *SITTA CAROLINENSIS*—White-bellied Nuthatch.

The White-bellied Nuthatch is a common resident, more plentiful in winter than in summer. It builds the last of April or the first of May, and usually rears but one brood.

LOCALITY:

The nest is generally in woods, in the dead trunk or branch of a tall tree; both uplands and lowlands are frequented. Sometimes it builds in a town, selecting an orchard or shade tree for its home. At Geneva, N. Y., a pair built several years in a large oak tree within a few feet of a dwelling. At Gambier, it has been known "to build in a crevice in the wall of a stone building."

POSITION:

The nest is placed in a hole, excavated by the birds, as a rule, from twenty to forty feet from the ground, and rests upon the bottom of the cavity. A natural cavity is said to be occasionally selected for the site. Commonly the nest is in a perpendicular trunk or limb.

MATERIALS:

Audubon found the eggs of this species resting on the bare floor of the excavation; this is certainly exceptional. All later observers agree that the cavity is lined with hair, feathers, down, fur, grasses, and the like, thrown carelessly together and pressed down by the weight of the birds, so as to form a warm, soft resting place for the eggs and young. I have at hand no measurements of the door and interior of the excavation, but as I remember them they are about the same in dimensions as in the nest of the Downy Woodpecker.

EGGS:

The complement of eggs varies according to different writers from four to nine. Two sets before me contain five and six each. The ground-color of the shell is white when blown, marked with blotches, spots, and speckles of brown-madder, usually of light tint. The marks beneath the surface are grayish in appearance. One egg from the two sets mentioned is marked at its base with confluent blotches, spots, and speckles; the remainder of the shell is quite thickly spotted and speckled, but the marks are seldom confluent. Another egg is boldly blotched at its base with a dark shade of color, but the blotches seldom coalesce; the balance of the shell is blotched and spotted more sparingly, but in the same clear-cut, decided way. Another specimen is uniformly speckled from point to base with the minutest dots of color, so that eighteen inches away it appears like a pink egg with here and there a spot. The first egg described is the most ordinary type, but each of the three is common. Of eleven eggs in my possession, the greatest long-diameter is .73, the least long-diameter is .70. The greatest short-diameter

is .61, the least short-diameter is .53. A common size is about .71 x .54. The eggs of this species in the National Museum measure from .68 to .78 in long-diameter, by .52 to .58 in short-diameter. A common size is about .73 x .52. The average size of eggs of this species, as given by many authors, is greater than the largest egg in the National Museum or in my collection. "North American Birds" gives their size at .80 x .62 of an inch. "Birds of the North-west," .78 x .59. "Nests and Eggs of North American Birds," Davie, .80 x .60. "Land and Game Birds of New England," Minot, .80 x .60. "Life Histories of Birds," Gentry, .80 x .62. "Oology of New England," Capen, .80 x .60.

DIFFERENTIAL POINTS:

There is a number of eggs that resemble so closely those of the White-bellied Nuthatch that identification is uncertain, without full data accompany the specimens. See Table.

REMARKS:

Fig. 6, PLATE LXVIII, represents three eggs of the White-bellied Nuthatch of the common sizes, shapes, and patterns of markings. The egg to the right is the least common in size and markings. The drawings were made from specimens in the National Museum, as my Ohio eggs were at the time mislaid. They have since been found, and from the measurements given it will be seen they are somewhat more obtuse than those shown on the plate.

The White-bellied Nuthatch is the only one of its family that breeds in Ohio, and it is by far the commonest species, even during spring, fall, and winter; in fact, in some parts of the State, it is the only representative of the family even in winter. It feeds upon insects and their eggs, and is usually busily engaged climbing around the trunks and larger limbs of trees in search of them. Its habits in this respect are similar to the smaller Woodpeckers', but it differs in its climbing ability from its red-headed friends, being able while clinging to a tree to turn around and descend, head downward, a feat impossible to our Woodpeckers.

The following is from "North American Birds," page 115: "The habits of this and the other species of Nuthatches partake somewhat of the smaller Woodpeckers and of the Titmice. Without the noisy and restless activity of the latter, they seek their food in a similar manner, and not unfrequently do so in their company, moving up or down the trunks and over or under the branches of trees, searching every crack or crevice of the bark for insects, larvæ, or eggs. Like the Woodpeckers, they dig industriously into decayed branches for the hidden grub, and like both Woodpeckers and Chickadees, they industriously excavate for themselves a place for their nests in the decayed trunks of forest trees. . . . The European Nuthatch is said to plaster up the entrance to its nest, to contract its opening, and lessen the dangers of unfriendly intrusion. This habit has never been observed in any of the American species.

"All our ornithological writers have noticed the assiduities of the male bird to his sitting mate, and the attention with which he supplies her with food. He keeps ever in the vicinity of the nest, calls her from time to time to come to the mouth of the hole to take her food, or else to receive his endearments and caresses, and at the approach of danger fearlessly intervenes to warn her of it. When feeding together, the male bird keeps up his peculiar nasal cry of *honk-honk*, repeating it from time to time, as he moves around the trunk or over the branches."

PLATE LXVIII.

Fig. 7. *PASSERCULUS SANDWICHENSIS SAVANNA*—*Savannah Sparrow*.

The Savannah Sparrow is a common migrant, but a rare summer resident. I have never found its nest, and never but once have I seen it in summer. It has, however, been found breeding at Gambier by Mr. H. C. Benson. It arrives in April and remains until about the time for it to build, and then disappears to return again in the fall. It probably rears two broods each year.

LOCALITY:

The nest is placed on the ground in open land, especially fields of grass and weeds in the neighborhood of water.

POSITION:

It is generally situated in a little depression, without attempt at concealment further than that afforded by its similarity to its surroundings.

MATERIALS:

The foundation and superstructure are composed of coarse grasses; the lining of finer grasses and sometimes horse-hairs. According to Maynard, "Birds of North America," page 99, it measures as follows: "External diameter, 4.00; internal, 2.75. External depth, 2.50; internal, 1.75."

EGGS:

The same author says in regard to the eggs: "Four or five in number, oval in form, bluish-white in color, spotted, blotched, and dotted with reddish-brown and lilac. Dimensions, from .80 x .60 to .90 x .65." Dr. Brewer in "North American Birds," page 536, says: "The eggs, five or six in number, vary considerably in their appearance. In shape they are a rounded oval, one end being much more pointed than the other. They measure .68 x .55 of an inch. In some, the ground-color, which is of a greenish-white, is plainly visible, being only partially covered by blotches of brown, shaded with red and purple. These blotches are more numerous about the larger end, becoming confluent and forming a corona. In others, the ground-color is entirely concealed by confluent ferruginous fine dots, over which are darker markings of brown and purple, and a still darker ring of the same about the larger end."

"Oölogy of New England" gives the usual number of eggs as four, with dimensions varying from .52 to .60 of an inch in short-diameter, by .63 to .83 in long-diameter. Eggs in my possession measure from .54 to .59 in short-diameter, by from .73 to .80 in long-diameter. The ground-color is dirty white or greenish-white, and the markings are reddish-brown. Some eggs are chiefly speckled, others are plentifully blotched, spotted, and speckled, while others are mainly spotted. The same diversity of coloring exists with these eggs as with the eggs of the Song Sparrow.

DIFFERENTIAL POINTS:

See Table.

REMARKS:

Fig. 7, PLATE LXVIII, represents three eggs of the Savannah Sparrow, of the common sizes, shapes, and markings. They were selected from eggs furnished by Mr. Jenks, of Providence, R. I.

Mr. Maynard has written so pleasantly of the southern home of this species, that I take pleasure in quoting him. He says: "The Savannahs of Florida are wide spread plains, either fresh or salt. The former are covered with a luxuriant growth of grass, often six feet high, while on the latter the herbage is shorter, and consists of several species of plants, among which is the peculiar sea purslane (*sesurium portulacastrum*). This creeping herb quite covers the ground in many localities, and the red, succulent leaves yield a peculiar spicy scent when crushed beneath the feet. This aromatic odor always reminds me of the marshes of Indian River, for it was there that I first saw the plant growing to perfection. These salt plains are the resorts of many birds, but none are more abundant there than the little Sparrows which I have under consideration, and which derive their common and specific names from their habit of frequenting savannahs. Many other species of the family are arboreal, but none among them are so fond of open, grassy sections as the Savannah Sparrows. In Florida, they are abundant in the marshy country along the sea board, or rivers of the interior, and are common on the plantations of Georgia and the Carolinas. In Pennsylvania, they are found in the rich interval lands; in Massachusetts and Maine they swarm along the sand hills and marshes of the coast, and I have even found them on the grassy hillsides of the Magdalen Islands, Gulf of St. Lawrence. They are retiring in habits, often running a long distance before flying. The males, however, are fond of perching on a low limb of a tree or fence top, to give their peculiar lay, which consists of a few lisping notes terminating in a faint warble; the whole performance being rather an unsatisfactory apology for a song.

"The nests are built on the ground in open fields, along the edges of the sand hills, or on the marshes. There is very little attempt at concealment, but as the females sit closely it is exceedingly difficult to flush them, and when forced to leave they will frequently run some distance before rising, often feigning lameness in order to attract attention from the nests. The eggs are deposited about the first of June, and a second litter in July. They breed a little later on the Magdalen Islands, where I should judge that they only rear one brood. They leave Florida early in March, arriving in New England about the middle of April, and remain until the first of November."

PLATE LXVIII.

Fig. 8. *CARPODACUS PURPUREUS*—Purple Finch.

This beautiful representative of the family of *Fringillidae* is found in summer only in the north-eastern part of the State, and then in limited numbers. In other sections it is occasionally seen in the spring and fall, and in the extreme southern counties, even in winter. It builds in May, or early June for the first brood, and late in July for the second.

LOCALITY:

At Geneva, N. Y., where the Purple Finch is one of the commonest summer residents, it builds almost exclusively in evergreen trees about town and country lawns. I have also known it to build in a pear tree. During its migrations in spring it usually frequents woods, where it feeds upon the buds of the trees and seeds; but later, when the foliage is fully started, it chooses more open ground. In the campus of Hobart College, I have taken numbers of their nests from the ornamental pines, cedars, and firs, which adorn the grounds.

POSITION:

These nests were invariably near the top of the trees, no matter how low or tall they happened to be, and were usually situated upon a small branch or two, close to the main trunk. Dr. Brewer has known this nest to be placed not more than five feet from the ground, and at other times near the top of a lofty fir tree. The majority of nests are probably within fifteen feet of the ground.

MATERIALS:

Dr. Brewer says: "The nests are, for the most part, somewhat flat and shallow structures, not more than two and a half inches in height, and about three and a half in breadth. The walls of the nest average less than an inch, and the cavity corresponds to its general shape and form. The frame-work of the nest is usually made of small denuded vegetable fibers, stems of grasses, strips of bark, and woody fragments. The upper rim of the nest is often a curious intertwining of dry herbaceous stems, the ends of which project above the nest itself, in the manner of a low palisade. The inner nest is made up of minute vegetable fibers, closely interwoven. There is usually no other lining than this. At other times, these nests are largely made up of small, dark colored rootlets of wooded plants, lined with finer materials of the same, occasionally mingled with the down of birds and the fur of small animals."

A nest before me, a fair representative of the species, is composed of a foundation and superstructure of brown roots, the coarsest being in the foundation; many of these are one-sixteenth of an inch in diameter by six or eight inches in length. They are arranged circularly and form a ragged looking exterior, about five inches in diameter outside of the loosest rootlets. Within the superstructure is a beautifully wrought lining, with walls about three-eighths of an inch thick, of the very finest, light

brown rootlets. These are so curly and curved, and interlaced and twisted together at the rim, that the inner nest suggests a piece of silver filigree work. The diameter of the cavity is about two inches; the depth, one inch. Another nest is very similar in size and shape, but has in its foundation a few weed-stems, and in the interior nest or lining a few horse-hairs. Upon the whole, these nests resemble closely nests of the Sparrows which build upon the ground, being much flatter than is usual with nests built in trees.

EGGS:

The complement of eggs is four, five, or six, seldom the last number. The ground-color is beautiful greenish-blue when first blown, but as with all eggs of this color, they soon fade to dull, light blue. The markings consist of blotches, spots, and speckles, and occasionally lines and scrawls of very dark brown, almost black. The deep shell-marks appear gray or lilac, according to their depth. As a rule, the eggs are sparingly spotted and speckled, chiefly about the base. Occasionally an egg is spotted from point to base rather plentifully, with here and there a blotch or scrawl and a few speckles, and also occasionally an egg nearly unmarked is seen. Three sets show variations in long-diameter, from .78 to .84; and in short-diameter, from .56 to .63. A common size is about .59 x .79. "North American Birds" gives their length from .81 to .92 of an inch, and their breadth from .60 to .70 of an inch. Davie gives their average at .65 x .85 of an inch, and Capen in "Oology of New England," says: "They vary in dimensions from .72 to .80 in length by .53 to .62 of an inch in breadth."

DIFFERENTIAL POINTS:

The nest and eggs of the Purple Finch resemble the nest and eggs of the Chipping Sparrow in many respects, but there is so much difference in size that they can be easily distinguished, the one from the other. There are no other nests and eggs with which this species can be confounded, by even a casual observer, if attention is paid to measurements.

REMARKS:

PLATE LXVIII, Fig. 8, illustrates three eggs of the Purple Finch, of the common sizes, shapes, and markings. They are colored from cabinet specimens. There is a number of nests which the limits of this work will not permit of illustrating. We regret this in every instance, but especially when a nest as beautiful as the one under consideration must be omitted. This work was promised to be completed in twenty-three parts, containing sixty-nine plates; that number has now been reached, and rather than continue it through another year or two, it seems best to leave out the nests of many species, and group a number of eggs upon one plate; by so doing, the eggs of all known summer residents can be figured, but many nests will be left, possibly for illustration in the future as an appendix, at which time the birds can also be added.

PLATE LXVIII.

Fig. 9. *MNIOTILTA VARIA*—*Black and White Creeper*.

The Black and White Creeper is a regular summer resident in suitable localities throughout the State, arriving in the spring, the last of April or the first of May, and remaining till September, during which time it usually rears but one brood.

LOCALITY:

It frequents woodlands generally in the early part of the season, but as the time for nesting approaches it is only found in retired pieces of timber with underbrush, according to Dr. Wheaton, "preferably second growth, mixed woodland." The nest is built on the ground at the foot of a stump, a sapling, or some such place, with but little effort at concealment other than that afforded by the general similarity of its materials to the surroundings.

POSITION:

A slight depression in the ground, or among the leaves and debris of the site, is chosen as a suitable position, and thus, supported from below and about its circumference, the nest is snugly and safely located.

MATERIALS:

The foundation usually consists of rather coarse weed-stems, strips of bark, leaves, leaf-stems, and the like, arranged circularly and criss-cross, and compactly pressed together. Finer material of the same kind, and in addition grasses and tendrils, compose the superstructure, and within this is a lining made up of very fine grasses, hairs, and frequently plant down. Nests have been found that were roofed, like the nest of the Golden Crowned Thrush, and it is said that occasionally, instead of building on the ground, this Warbler nests in a hole in a tree or a crevice in the bark, after the manner of the Tufted Titmouse.

EGGS:

The complement of eggs is four or five. The ground-color is white, and the markings, which consist chiefly of blotches, spots, and speckles, are reddish-brown, the same color as the marks on the eggs of *L. bicolor*. Eggs before me measure in long-diameter from .65 to .74, and in short-diameter from .50 to .55. A common size is about .53 x .70. The following measurements are given for these eggs by different writers: .69 to .75 of an inch in length, and from .50 to .53 of an inch in breadth, .70 to .75 in length, and from .50 to .52 in breadth, .65 x .55 of an inch, .70 x .50 to .80 x .55, and .65 x .54 of an inch. The markings are generally most plentiful about the base, often forming a more or less confluent ring. As with most eggs of this size and color of markings, specimens are frequently found without

blotches or spots, being, instead of blotched and spotted, entirely and evenly speckled, so that a little way off the shell appears pink.

DIFFERENTIAL POINTS:

There is a number of birds whose eggs resemble closely those of the Black and White Creeper, some of them so closely that differentiation is impossible. These will be considered in the tables, and whenever possible, points of difference will be designated. If, however, the nest and eggs of these various species are considered together, and the locality and position of each is stated, then no trouble will occur in identification, as each has some characteristic noted in the text, which is sufficient to insure its recognition.

REMARKS:

The three eggs figured, PLATE LXVIII, Fig. 9, represent the common sizes, shapes, color, and patterns of markings. The specimens illustrated were selected from three sets, all of which were taken in Ohio, and one of them in Pickaway county.

The Black and White Creeper is a bird easily recognized by its black and white streaked back, and by its habit of climbing the trunks and limbs of trees after the manner of the Nuthatches and Chickadees. When seen in the woods, it is generally busily engaged creeping about the trees in search of insects or their eggs and larvæ, upon which it feeds almost entirely. It often utters its alarm note if disturbed, or if unmolested repeats to itself its apology for a song. I have found the young birds of this species in the nest, but have never taken a set of fresh eggs. The parents are very solicitous for their young when they are disturbed, and show signs of anger and valor usual to the smaller birds.

PLATE LXVIII.

Fig. 10. HYLOCICHLA UNALASCAE PALLASI—Hermit Thrush.

The Hermit Thrush is not an uncommon migrant in April and October, and in limited parts of the State it is an occasional summer resident. Dr. Brewer says: "The present species is found throughout Eastern North America to the Mississippi, and breeds from Massachusetts to high Arctic regions. It is only occasionally found breeding so far south as Massachusetts; through which State it passes in its spring migrations, sometimes as early as the 10th of April; usually reaching Calais, Maine, by the 15th of the same month.

"It is a very abundant bird throughout Maine, where it begins to breed during the last week of May, and where it also probably has two broods in a season.

"The greater number appear to pass the winter in the Southern States; it being common in Florida, and even occasionally seen during that season as far north as latitude 38° in Southern Illinois, according to Ridgway."

Mr. Chas. Dury, of Cincinnati, notes a nest and eggs of the Hermit Thrush taken near said city on May 10, 1877, by Mr. G. Holterhoff.

LOCALITY:

Minot, writing about this species in "Land and Game Birds of New England," says: "In the woods about Boston (and of course in other woods), whether swampy or dry, and also along the wooded roadsides, from the middle of April until the first of May, one may see a great number of Hermit Thrushes. During their stay here, these birds, often in pairs, and sometimes in small parties (a fact which shows that their name is not altogether an appropriate one), spend their time for the most part in silence, busied among the dead leaves and underbrush, occasionally resting on a low perch, and rarely flying far when disturbed. They are quiet birds, and, though often easily approached, prefer those places where they are not likely to be intruded upon. On leaving this State in the spring, they pass on to Northern New England and to Canada, where they spend the summer and rear their young, being in some localities the most common Thrushes. In October, they return to Massachusetts in the course of their journey to their winter homes in the south, and a few linger until November is well advanced. During their sojourn here in autumn, they frequent the ground much less than in spring, and feed largely on various kinds of berries, many of which they find in swamps.

"These birds are to be associated with October, when the roads, hardened by frost, are neither muddy nor dusty; when the paths through the woods are strewn with the soft fallen leaves, which rustle pleasantly beneath one's feet; when the clear, cold, exhilarating weather is well adapted to exercise; when the maples are in the utmost splendor of their brilliant coloring; and finally when the hills, covered with the oaks of low growth, where once forests stood, glow with the rich crimson, which at last becomes a dull brown, showing winter to be near at hand.

"The nest of the Hermit Thrush, which has been rarely found in Massachusetts, is placed almost invariably upon the ground, occasionally in swamps, but more often on sunny, sloping, and shrubby banks near them. It is much like that of the Wilson's Thrush, though usually rather larger, coarser, and more loosely constructed."

POSITION:

The nest rests in a little concavity, usually under overhanging branches of low trees or bushes.

MATERIALS:

It is made of leaves, twigs, strips of bark, roots, grasses, and frequently hairs occur in the lining. According to Brewer, it is three inches high, and five in diameter, with a cavity three and one-fourth inches wide, and three-fourths deep. Maynard gives its external diameter at five inches, and its internal diameter at two and one-half inches, and its external depth at three inches, and its internal depth at two inches. The coarser materials mentioned are used in the foundation and superstructure, and grasses, fine roots, and hair are used for the lining.

EGGS:

The eggs in a set are usually four; they are pale bluish-green in color, unspotted, and measure in long-diameter from .82 to .93, and in short-diameter from .63 to .68. A common size is .66 x .88. Maynard gives their dimensions as follows: "From .88 x .60 to .92 x .65."

DIFFERENTIAL POINTS:

See Table.

REMARKS:

Fig. 10, PLATE LXVIII, shows three eggs of the Hermit Thrush, of the common sizes and shapes. They were selected for illustration from the collection in the National Museum. The color is like cabinet specimens a year old, and consequently less brilliant than that of fresh specimens.

I have no knowledge of the Hermit Thrush breeding in Ohio other than stated, though I have heard of it being seen at various parts of the State in the summer. It is more than possible that in most, if not all of these instances, Wilson's Thrush has been mistaken for it.

PLATE LXVIII.

Fig. 11. ZAMELODIA LUDOVICIANA—Rose-breasted Grosbeak.

The Rose-breasted Grosbeak is one of our most beautiful birds in song as well as in plumage. It arrives the last of April or the first of May, and remains until September or later. In Southern and Central Ohio it seldom breeds, and is not a very common migrant, but in the northern counties it is a common summer resident. Dr. Wheaton once found its nest on the bank of the Olentangy River, near Columbus; Audubon states that he discovered its nest and eggs in the vicinity of Cincinnati; and Dr. Kirtland and Mr. Read speak of its nest as plentiful about Cleveland. But one brood is usually reared during a season.

LOCALITY:

The nest is placed in a tree or tall bush, either in high or low woodland, though the preference is decidedly in favor of the wooded bank of a stream. A cranberry marsh or a thicket among sycamore trees is said to be a common locality for the nest in Northern Ohio.

POSITION:

It is usually from six to twenty feet from the ground, and is supported by a number of small branches or twigs near the center of the tree. Dr. Hoy, of Racine, found six out of seven nests between six and ten feet from the ground, in the central portion of the tops of thorn-trees. Other observers have also noticed a liking on the part of this bird for the thorn-tree as a place for nesting.

MATERIALS:

Dr. Brewer describes the nest as follows: "Their nests are coarsely built, with a base composed of waste stubble, fragments of leaves, and stems of plants. These are intermingled with and strengthened by twigs and coarser stems. They have a diameter of eight inches, and a height of three and a half. The upper portion of the nest is usually composed of dry *usnea* mosses, mingled with a few twigs, and lined with finer twigs. Its cavity is three inches in diameter, and one in depth, being quite shallow for so large a nest." Dr. Coues, in "Birds of the North-west," says: "I have nowhere found this beautiful bird more abundant than along the Red River of the North, and there may be no locality where its nidification and breeding habits can be studied to greater advantage. On entering the belt of noble timber that borders the river, in June, we are almost sure to be saluted with the rich, rolling song of the rose-breasted male, and as we penetrate into the deeper recesses, pressing through the stubborn luxuriance of vegetation into the little shady glades that the bird loves so well, we may catch a glimpse of the shy and retiring female, darting into concealment, disturbed by our approach. She is almost sure to be followed the next moment by her ardent spouse, solicitous for her safety, bent on reassuring her by his presence and caresses. Sometimes during this month, as we enter a grove of saplings, and glance care-

fully overhead, we may see the nest placed but a few feet from the ground, in the fork of a limb. The female alarmed, will flutter away stealthily, and we may not catch another glimpse of her, nor of her mate, even though we hear them both anxiously consulting together at a little distance. The nest is not such an elegant affair as might be desired; it is, in fact, bulky and rude, if not actually slovenly. It is formed entirely of the long, slender, tortuous stems of woody climbers, and similar stunt rootlets; the base and outer walls being very loosely interlaced, the inner more compactly woven, with a tolerably firm brim of circularly-disposed fibers. Sometimes there is a little horse-hair lining, oftener not. A very complete nest before me is difficult to measure, from its loose outward construction, but may be called six inches across outside by four deep; the cavity three inches wide by one and a half deep.

EGGS:

"The nest contained three eggs, which I think is the usual number in this latitude; four I have only found once. The eggs are usually rather elongate, but obtuse at the smaller end. Different specimens measure 1.00 x 0.75, 1.08 x 0.70, 1.03 x 0.75, 1.02 x 0.72, 0.96 x 0.76; by which dimensions the variation in shape is denoted. The average is about that of the first measurement given. They are of a light and rather pale green color, profusely speckled with dull, reddish-brown, usually in small and also rather diffuse pattern, but sometimes quite sharply marked; the sharper markings are usually the smallest. There is sometimes much confluence, or at least aggregation, about the greater end, but the whole surface is always marked." Maynard places the complement of eggs at four in number. He says they are oval in form, bluish-green in color, spotted and blotched with brown and lilac, and measure from .68 x .92 to .75 x 1.00. Capen writes about the eggs under consideration as follows: "Usually four in number, often three, and seldom five, are bluish-green, or dull, greenish-gray, spotted all over with obscure lilac, pale, reddish, and purplish-browns of varying intensity. In others, the markings are darker and more sharply defined." Three eggs before me taken from a nest built near Cleveland, measure respectively, 1.04 x .67, .99 x .69, and .98 x .66."

DIFFERENTIAL POINTS:

There is a general similarity between the nest and eggs of the Rose-breasted Grosbeak, and the nest and eggs of the Summer Redbird, and the Scarlet Tanager, but the difference in size suffices for easy differentiation. See Table.

REMARKS:

The three eggs illustrated on PLATE LXVIII, Fig. 11, show the common sizes and patterns of markings of the eggs of the Rose-breasted Grosbeak. The specimens were selected from two sets from Northern Ohio.

PLATE LXVIII.

Fig. 12. *DOLICHONYX ORYZIVORUS*—Bobolink.

The Bobolink, or Reed-bird of the South, is a common summer-resident in suitable localities throughout Ohio. About Circleville, there are a number of fields in different directions, where they can be found every year, yet there are few citizens who know the bird, or knowing it, have ever seen it here. They arrive about the first of May and remain until September, during which time but one brood is usually reared

LOCALITY:

The Bobolink builds its nest in damp meadow-lands, and also in clover- and timothy-fields in dry uplands. It prefers for its nest a field containing a mixture of blue-grass and red-clover, with here and there small trees and bushes, and especially is such a locality desirable, if it contains a little ditch, or several low spots of ground which are continually damp.

POSITION:

The nest rests on the ground in a little natural depression, and is well concealed by the luxuriant clover or grass surrounding it.

MATERIALS:

The chief materials of construction are grass and clover stalks arranged circularly and crosswise, the finest material being used for a lining. Externally, it measures from four to four and a half inches; internally, its diameter is about three inches, and its depth about two inches. There is not much of interest about this nest. It is well built for its position, and is composed of the materials which answer best for its concealment.

EGGS:

The complement of eggs is four or five. They measure in long-diameter from .70 to .90, and in short-diameter from .55 to .65. A common size is about .60 x .84. The ground-color is gray; the marks consist of large blotches, spots, and speckles, and occasionally scrawls of warm, rich brown, or a darker and heavier brown, which, when laid on thickly, appears nearly black. The deep shell-marks are frequently numerous, and vary in tint according to depth, from a darker shade of the ground-color to purplish-gray. One egg before me is thickly marked with large, irregular, and sometimes confluent blotches of Vandyke brown from point to base, and the parts of the shell which have escaped the blotches are thickly speckled with the same brown. Deep shell-marks are inconspicuous. Another egg is spotted and speckled with sepia about the base, the pointed half of the shell being only speckled slightly with the same color; no deep shell-marks. Another specimen is blotched and spotted moderately from point to base with rich brown, and also speckled and marked with a scrawl or two. There are a number of deep shell-marks, and these give a purplish cast to the egg. Other eggs differ in pattern through numerous combinations, as varied in extent as the markings on the eggs of the Song Sparrow.

DIFFERENTIAL POINTS:

See Table.

REMARKS:

Fig. 12, PLATE LXVIII, represents three eggs of the Bobolink, of the common shapes, sizes, and patterns of markings. The nest of the Bobolink is very difficult to find, owing to its position, and also to the fact that the female will not flush from her nest, but will run off through the grass when alarmed. It is therefore impossible to locate the nest by the place from which the female is scared up, and also equally impossible to locate it by the place at which she alights when going to her eggs, as she resorts to the same tactics upon her entrance to her home as upon her departure. Diligent search through the grass over the locality suspected to contain the nest is the quickest and surest way of finding it.

The most remarkable thing about the Bobolink is its song. It has been celebrated in prose and verse until even those persons who have never heard the bird sing must have some familiarity with its notes. But to those individuals who in early June have listened to the sweet music poured forth by the Bobolink, while perched upon some swaying bough or tall blade of grass, or like a Sparrow Hawk balanced in the air, there must ever occur pleasant memories at the mere suggestion of the songster's name. In 1879, the Rev. C. S. Percival, after a long residence in the West, met for the first time in years the Bobolink. The following verse, handed to me a few days after, seems so truthful and so fine in thought that I take the liberty of reproducing it here:

How are you, old fellow? You know me, Though 't is many a year since we met. I knew you the moment I heard you; That melody who can forget? That rollicking, jubilant whistle, That rolls like a brooklet along— That sweet flageolet of the meadows, Your bubble-ing, bobolink song!		"Only think!"—with your eye cocked upon me— "That a chap without voice, ear, or wings, "Should think he can mimic the singing "Of a fellow that flies as he sings! "Oh go 'long. Give it up? You can't come it! "Chee, chee!—what a figure he makes, "Who apes, with his hiccupping quavers, "My bubble-ing, bobolink shakes!"
In the beautiful vales of Oneida I first heard that sweet roundelay, Which, afar on the Iowa prairies, I've pined for through many a May. But here are the fields of Ohio; And you've come from those valleys half way, To meet me and greet me, still singing Your bubble-ing, bobolink lay!		But Bobbie, how is it?—I'm puzzled. Come to think, it is wonderful strange That you look and sing as you used to, While I—have you noticed the change? Your plumage still wears the old colors, While mine like a badger's has grown, My songs are sung out, while yours echo The same bubble-ing, bobolink tone?
'T was kind of you, Bobbie, to do it, For here I must linger awhile; And hence to that home of my childhood Still stretches full many a mile. And, ere I had reached you, the autumn Had banished you far to the South; And the snow and the storm-wind had silenced That bubble-ing, bobolink mouth!		Did your mother, the first time she saw you, Dip you, heels and all, into the Styx; And thus, on her musical wonder, A long immortality fix? Or, down in that South, did you drink of The fount Ponce sought for in vain— And thence is the fresh juvenescence Of your bubble-ing, bobolink strain?
Then sing once again the sweet ditty, My boyhood delighted to hear; And my laugh, though a tear must spring with it, Will ring out in spite of the tear. And the long-silent voices of loved ones, And the forms on which memory dotes, All shall live in the magical echoes Of those bubble-ing, bobolink notes!		I know not, dear Bobbie, and care not; For in fact I'm as young as yourself, For all of your juvenile antics— You jubilant, rollicking elf! The heart that possesses the power Beneath your wild music to thrill, Is as young as the heart that produces Your bubble-ing, bobolink trill!
Do you mind, my dear Bobbie, how often I tried to poke fun as you sang, And mimicked your musical nasals With my hoarse "Okelang, okelang?" But I mind how you commonly taught me That the poked is the fellow that pokes; For, somehow, you always got round me With these bubble-ing, bobolink jokes!		But the heart, Bobbie, never gets older; And that's the one musical thing— The only thing here or in Heaven, That ever could, can, or will sing! And that is the reason I've lingered To-day in this meadow so long; And joined my old base to the treble Of your bubble-ing, bobolink song!

PLATE LXVIII.

Fig. 13. *RHYACOPHILUS SOLITARIUS*—Solitary Sandpiper.

The Solitary Sandpiper is a rather common migrant, but an irregular and rather rare summer-resident. I have several times found young birds in July, and have also seen old birds in May and June. The eggs are probably laid in April or May, and but one brood reared during a season.

LOCALITY:

This Sandpiper is very retired in its habits, frequenting little muddy ponds in lonely woods, shady nooks, and sloughs along rivers and creeks, and similar damp, mucky places. The nest is supposed to be placed generally in an open field adjoining or neighboring its feeding grounds. Few nests have ever been taken, and little is actually known regarding its breeding habits.

POSITION:

The eggs, according to authorities, are placed on the ground in a little depression, the nest being similar to that of the Spotted Sandpiper. Mr. Ridgway informs me that he believes the eggs are often deposited in abandoned nests of the Wood Thrush. Such nests, when they occur, as they frequently do in the neighborhood of the summer home of this Sandpiper, should certainly be examined.

MATERIALS:

Very little attempt at constructing a nest is probably made; either the eggs are placed directly upon the ground, or a little rubbish, such as is used by the Spotted Sandpiper or the Killdeer, is carried to the site and carelessly deposited in the bottom of the chosen depression.

EGGS:

Dr. Wheaton, some years since, sent to the Smithsonian Institution an egg collected by Oliver Davie in an open field bordering the Scioto River, near Columbus, which, though without any positive claims, possessed characters that at the time seemed to entitle it to consideration as possibly belonging to *R. Solitarius*. Dr. Coues, in "Birds of the North-west," speaks of two eggs of this species from Cleveland, belonging formerly to the collection of Dr. Kirtland, as the only ones he had ever seen. They measured 1.50 x 1.05. The ground was clay-colored; the markings were heavy and numerous on the larger half of the egg, smaller and fewer elsewhere. They were blackish-brown and lacked the slightest shade of chocolate.

The collection of the National Museum contains five specimens, supposed to belong to the species being considered. One of these is the egg sent by Dr. Wheaton, referred to above, and the remaining four belong to a set taken in the East. The single egg is the one figured; the others are entirely different in markings. Their ground-color is drab, finely spotted with dark brown, with many deep shell-marks,

having a slate-color. They average about 1.30 x .90. Mr. Jenness Richardson, in a letter to Mr. Capen, describes the finding of a set of these eggs as follows: "At Lako Bombazine, Castleton, Vt., near what is known as 'Birch Point,' there is a small stream emptying into the lake, at the mouth of which is a large swampy tract, covering several acres, and having a dense growth of alders. The swamp at this time of the year is partially flooded. Here the Woodcock, Snipe, and Solitary Sandpiper are very abundant. A search was at once commenced to find the nest of the last bird. One morning, about twenty feet from me, as I was about to enter the swamp, I flushed one of these birds, which displayed considerable anxiety. I immediately began hunting for its nest, which I soon discovered, concealed, and partly sheltered, by a thicket of small hemlocks. The nest was a mere depression on the ground, without any vestige of a lining whatever, and contained only one egg. The bird was shot, and, upon dissection, two eggs were found, which would probably have been laid in a few days. This egg was found May 28, 1878."

Maynard, in "North American Birds," says: "There are few birds, the eggs of which have remained so long unknown, as the present species. At first ornithologists were inclined to believe the birds would be found breeding in the deserted nests of Crows or Hawks, after the manner of the closely allied European species, and such may be the case at times. I am inclined to think, however, that these Solitary Tattlers generally place their eggs on the ground. . . . They are from two to four in number, varying from creamy to pale buff in color, spotted and blotched with umber-brown of varying shades, with the usual pale shell markings. Dimensions from .95 x 1.35 to 1.00 x 1.40. . . . The eggs from which I have taken my description came from Utah, and as I have every reason to believe, are authentic."

DIFFERENTIAL POINTS:

See Table.

REMARKS:

Fig. 13, PLATE LXVIII, represents an egg now in the National Museum, supposed to be that of the Solitary Sandpiper. It is the one referred to above, which was found by Oliver Davie, of Columbus. It measures 1.83 x .94.

ETYMOLOGICAL KEY.

COMPILED FROM THE AUTHORITIES AND ARRANGED FOR THIS WORK BY REV. S. H. McMULLIN, A. M.

- A**
- Accipiter cooperi.*
accipiter, subs. L.,=hawk.
cooperi,—of (W.) Cooper.
- Accipiter fuscus.*
accipiter, subs. L.,=hawk.
fuscus, adj. L.,=swarthy.
- Agelaius phoeniceus.*
agelaius, adj. Gr. from ἀγέλας,=gregarious.
phoeniceus, adj. L.,=purple red.
- Aix sponsa.*
aix, subs. Gr. (αἴξ),=a water-fowl mentioned by Aristotle.
sponsa, subs. L.,=a bride.
- Ampelis cedrorum.*
ampelis, subs. Gr.,=the ἀμπελίς or ἀμπελών, a bird mentioned by Aristophanes in *The Birds*.
cedrorum, subs. L.,=of the cedars.
- Anas boschas.*
anas, subs. L.,=duck.
boschas, subs. Gr. (βουσάδ),=duck.
- Ardetta exilis.*
ardetta, Italian diminutive from *ardea*, subs. L.,=heron.
 Latin dimin.,=ardeola.
exilis, adj. L.,=small.
- Ardea virescens.*
ardea, subs. L.,=heron.
virescens, adj. L.,=greenish.
 A participle of inchoative verb *viresco*,=I become green.
- Ardea herodias.*
ardea subs. L.,=heron.
herodias, subs. Gr. Ἡρώδης,=heron.
- Asio americanus.**
asio, subs. L.,=horned owl.
americanus, adj. L.,=American.
- Asio accipitrinus.*
asio, subs. L.,=horned owl.
accipitrinus, adj. L.,=hawk-like.
- Astragalinus tristis.*
astragalinus, subs. Gr.,=goldfinch.
tristis, adj. L.,=sad (voiced).
- B**
- Bartramia longicauda.*
bartramia, adj. L.,=of (W.) Bartram.
longicauda, adj. L.,=long-tailed.
 comp. of *longus*,=long.
cauda,=tail.
- Bonasa umbellus.*
bonasa (properly *bonasus*), subs. Gr. (βουασός),=bison.
umbellus (properly *umbella*), subs. L.,=umbrella.
- Botaurus lentiginosus.*
botaurus, subs. L.,=bittern.
lentiginosus, adj., L.,=freckled.
- Bubo virginianus.*
bubo, subs. L.,=horned owl.
virginianus, adj. L.,=Virginian.
- Buteo lineatus.*
buteo, subs. L.,=falcon.
lineatus, adj. L.,=striped.
- Buteo borealis.*
buteo, subs. L.,=falcon.
borealis, adj. L.,=northern.
- Buteo pennsylvanicus.*
buteo, subs. L.,=falcon.
pennsylvanicus, adj. L.,=Pennsylvanian.
- C**
- Cardinalis virginianus.*
cardinalis, adj. L.,=cardinal red.
virginianus, adj. L.,=of Virginia.
- Caprimulgus vociferus.*
caprimulgus, subs. L.,=goat-sucker.
 comp. of *caper*,=goat.
mulgo,=I milk.
vociferus, adj. late L.,=vociferous.
- Carpodacus purpureus.*
carpodacus, subs. Gr.,=fruit-eater.
 comp. of καρπός,=fruit.
 ὄξυς,=I bite.
purpureus, adj. L.,=purple.
- Cathartes aura.*
cathartes, subs. Gr.,=purifier.
aura, subs. L.,=in the air.
- Ceryle alcyon.*
ceryle, subs. Gr.,=a sea-bird of the halcyon kind.
alcyon, subs. Gr.,=king-fisher.
- Centurus carolinus.*
centurus, adj. Gr.,=prickle-tailed.
 comp. of ζέστρον,=a goad.
 ὀπά,=a tail.
carolinus, adj. L.,=(improperly) of Carolina.
- Chaetura pelagica.*
chaetura, adj. Gr.,=hair-tailed.
 comp. of χαιτή,=hair.
 ὀπά,=tail.
pelagica, adj. Gr.,=wandering.
- Chondestes grammica.*
chondestes, subs. Gr.,=groundling.
 Formed from γῶς, ground.
grammica, adj. Gr.,=striped.
 From γράμμα, a line.

- Chordeiles popetue*.
chordeiles, subs. Gr.,=chord of evening.
popetue (perhaps from ποποποζ,=cry of the hoopoe).
- Circus cyaneus*, var. *Hudsonius*.
circus, subs., Gr. (κίρκος),=hawk.
cyaneus, adj. L.,=deep blue.
hudsonius, adj. L.,=Hudsonian, i. e., of Hudson's Bay.
- Colaptes auratus*.
colaptes subs. Gr. (κολαπτής),=hammer.
auratus, adj. L.,=golden gilded.
- Coccyzus americanus*.
coccyzus, subs. Gr. (κοκκύζ),=cuckoo.
americanus, adj. L.,=American.
- Coccyzus erythrophthalmus*.
coccyzus, subs. Gr. (κοκκύζ),=cuckoo.
erythrophthalmus, adj. Gr.,=red-eyed.
 comp. of ἐρυθρόφως,=red.
 ὄφθαλμός,=eye.
- Collurio ludovicianus*.
collurio, subs. Gr. (κολυρίων),=a bird of the thrush family mentioned by Aristophanes.
ludovicianus, adj. L.,=pertaining to Louisiana. Formed from Ludovicus,=Louis.
- Contopus virens*.
contopus, subs. Gr.,=short-footed.
 comp. of κοντός,=short.
 πούς,=foot.
virens, adj. L.,=greenish.
- Corvus frugivorus*.
corvus, subs. L.,=a raven.
frugivorus, adj. L.,=fruit-eating.
 comp. of *fruges*,=pulse.
 voro,=I eat greedily.
- Cotile riparia*.
cotile, subs. Gr. (κοτίλη),=swallow.
riparia, adj. L.,=frequenting banks of rivers.
- Coturniculus passerinus*.
coturniculus, subs. L.,=little quail.
 Formed from *coturnix*.
passerinus, adj. L.,=sparrow-like.
- Cupidonia cupido*.
cupidonia, adj. L.,=Cupid-like.
 Irregularly formed from
- cupido*, subs. L.,=Cupid.
 With probable allusion to the small wing-like tufts on the neck.
- Cyanospiza cyanea*.
cyanospiza, subs. Gr.,=blue chaffinch.
 comp. of κυανός,=dark blue.
 σπίζα, chaffinch.
cyanea, adj. Gr.,=dark blue.
- Cyanurus cristatus*.
cyanurus, subs. Gr.,=blue-tail.
 comp. of κυανός,=dark blue.
 ὄψις,=tail.
cristata, adj. L.,=tufted.
- D**
- Dendroeca maculosa*.
dendroeca, subs. Gr.,=tree dweller.
 comp. of δένδροον,=a tree.
 ἄξω,=I dwell.
maculosa, adj. L.,=parti-colored.
- Dendroeca aestiva*.
dendroeca, subs. Gr.,=tree dweller.
aestiva, adj. L.,=of the summer.
- Dendroeca pennsylvanica*.
dendroeca, subs. Gr.,=tree dweller.
pennsylvanica, adj. L.,=of Pennsylvania.
- Dolichonyx oryzivorus*.
dolichonyx, subs. Gr.,=long-nail.
 comp. of δολχός,=long.
 ὄνυξ,=nail, claw.
oryzivorus, adj. L.,=rice eating.
 comp. of *oryza*,=rice.
 voro, I eat greedily.
- Dytes auritus*.
dytes, subs. Gr. (δύτης),=diver.
auritus, adj. L.,=furnished with ears.
- E**
- Ectopistes migratoria*.
ectopistes, subs. Gr. (ἐκτοπίστης),=wanderer.
migratoria, adj. L.,=wandering.
- Empidonax acadicus*.
empidonax, subs. Gr.,=mosquito king.
 comp. of ἐπιτικός,=mosquito.
 ἄναξ, king.
acadicus, adj. L.,=Acadian.
- Empidonax traillii*.
empidonax, subs. Gr.,=mosquito king.
traillii, adj. L.,=of Traill (Mr. T. S. Traill, of Edinburgh.)
- Euspiza americana*.
euspiza, subs. Gr.,=great chaffinch.
 comp. of εὖς,=well.
 σπίζα,=chaffinch.
americana, adj. L.,=American.
- F**
- Fulica americana*.
fulica, subs. L.,=a coot.
americana, adj. L.,=American.
- G**
- Geothlypis trichas*.
geothlypis, adj. Gr.,=earth-thlypis.
 comp. of γῆ,=the earth.
 θήπις,=proper name.
trichas, subs. Gr. (τρικυδής),=thrush.
- H**
- Harporhynchus rufus*.
harporhynchus, subs. Gr.,=hawk-bill.
 comp. of ἄρπη,=the Egyptian kite.
 ῥύγχος,=a bill or beak.
rufus, adj. L.,=reddish brown.
- Helminthophaga pinus*.
helminthophaga, subs. Gr.,=worm-eater.
 comp. of ἕλμινξ,=worm.
 φαγῆναι,=to eat.
pinus, subs. L.,=of the pine.
- Helminthophaga chrysoptera*.
helminthophaga, subs. Gr.,=worm-eater.
chrysoptera, adj. Gr.,=golden-winged.
 comp. of χρυσός,=gold.
 πτερόν,=belly.
- Hirundo erythrogaster*.
hirundo, subs. L.,=swallow.
erythrogaster, adj. Gr.,=red-bellied.
 comp. of ἐρυθρόστος,=red.
 γαστήρ, belly.
- Hydrochelidon lariformis surinamensis*.
hydrochelidon, subs. Gr.,=water swallow.
 comp. of ὕδωρ,=water.
 χελιδόν,=swallow.

lariformis, adj. L.,=gull-shaped.
comp. of *larus*,=a sea bird.
forma,=form, shape.
surinamensis, adj. L.,=pertaining to Surinam.

Hyalocichla fuscescens.
hyalocichla, subs. Gr.,=wood thrush.
comp. of *ὕαλ*,=wood.
χιμνί,=thrush.
fuscescens, adj. L.,=somewhat swarthy.

Hyalocichla unalascae pallasi.
hyalocichla, subs. Gr.,=wood thrush.
unalascae, subs. L.,=of Unalaska.
pallasi, subs. L.,=Pallas'.

I

Icterus baltimore.
icterus, subs. Gr.,=a yellow bird.
baltimore, Eug. adj.,=Baltimore.

Icterus spurius.
icterus, subs. Gr.,=a yellow bird.
spurius, adj. L.,=spurious, bastard.

Icteria viridis.
icteria, subs. Gr.,=jaundice color.
viridis, adj. L.,=greenish.

L

Lanius flavifrons.
lanivireo, subs. L.,=butcher vireo.
comp. of *lanius*,=a butcher.
vireo,=a greenlet.
flavifrons, adj. L.,=yellow-throated.
comp. of *flavus*,=yellow.
frons,=front.

Lophophanes bicolor.
lophophanes, subs. Gr.,=crest displayer.
comp. of *λόφος*,=crest.
φανέ,=displaying.
bicolor, adj. L., of two colors.
comp. of *bis*,=twice.
color,=color.

M

Melospiza melodia.
melospiza, subs. Gr.,=singing finch.
comp. of *μέλος*,=song.
σιντίζα,=chaffinch.
melodia (properly *meloda*), adj. L.,=melodious.

Meleagris gallopavo americana.
meleagris, subs. Gr.,=guinea-fowl.
Named from Meleager.
gallopavo, subs. L.,=cock pea-fowl.
comp. of *gallus*,=cock.
pavo,=pea-fowl.
americana, adj. L.,=American.

Melanerpes erythrocephalus.
melanerpes, subs. Gr.,=black creeper.
comp. of *μέλας*,=black.
ἐρυθρός,=creeper.
erythrocephalus, adj. Gr.,=red-headed.
comp. of *ἐρυθρός*,=red.
κεφαλή,=head.

Melospiza palustris.
melospiza, subs. Gr.,=singing finch.
comp. of *μέλος*,=song.
σιντίζα,=finch.
palustris, adj. Gr.,=of the marsh.

Mimus carolinensis.
mimus, subs. L.,=mimic.
carolinensis, adj. L.,=of Carolina.
Mimus polyglottus.
mimus, subs. L.,=mimic.
polyglottus, adj. Gr.,=many-tongued.
comp. of *πολύ*,=many.
γλῶσσαν,=tongue.

Molothrus ater.
molothrus, subs. Gr.,=parasite.
μολοθρός, =μολοθρός.
ater, adj. L.,=black.

Mniotilta varia.
mniotilta, subs. Gr.,=moss-plucking.
comp. of *μνίον*,=moss.
τίλλω,=I pluck.
varia, adj. L., =parti-colored.

Myiarchus cinerascens.
myiarchus, subs. Gr.,=fly-catcher.
For *μυιάρχος*,=maime of an Elean God.
cinerascens, adj. L.,=hairy.

O

Oryzopsis virginianus.
oryzopsis, subs. Gr. (ὄρυζος),=quail.
virginianus, adj. L.,=Virginian.

Oryzopsis vociferus.
oryzopsis, subs. Gr.,=high sounding one.

comp. of *ὄξύς*,=sharp.
ὄρυξ,=sound.
vociferus, adj. L.,=vociferous.

P

Pandion haliaetus carolinensis.
pandion,=Πανδάριον, a Greek proper name.
haliaetus, subs. Gr.,=sea eagle.
ἀλιεῦτος.

Parula americana.
parula, subs. L.,=a little tit.
americana, adj. L.,=American.

Parus carolinensis.
parus, subs. L. (*parvus*),=the tit.
carolinensis, adj. L.,=belonging to Carolina.

Parus atricapillus.
parus, subs. L.,=the tit.
atricapillus, adj. L.,=black-haired.
comp. of *ατρός*,=black.
capillus,=a hair.

Passer domesticus.
passer, subs. L.,=a sparrow.
domesticus, adj. L.,=of the house.

Passerculus sandwichensis savanna.
passerculus, subs. L.,=little sparrow.
sandwichensis (properly *sandvicensis*),
adj. L.,=of the Sandwich (one of the Aleutian Islands).
savanna, subs. Hispan.,=meadow.

Petrochelidon lunifrons.
petrochelidon, subs. Gr.,=cliff swallow.
comp. of *πέτρα*,=a rock.
χελιδών,=a swallow.
lunifrons, subs. L.,=crescent-face.
comp. of *λίνα*,=moon.
frons,=forehead, face.

Philohela minor.
philohela, subs. Gr.,=loving low ground.
comp. of *φίλος*,=loving.
ἔλος,=marshes.
minor, adj. L.,=less.

Phalacrocorax dilophus floridanus.
phalacrocorax, subs. Gr.,=bald raven.
comp. of *φαλακρός*,=bald.
κόραξ,=raven.

- dilophus*, adj. Gr.,=double-crested.
comp. of *δίς*,=twice.
λόφος, =crest.
floridanus, adj. L., =of Florida.
- Picus pubescens*.
picus, subs. L.,=a woodpecker.
pubescens, adj. L.,=hairy.
- Picus villosus*.
picus, subs. L.,=a woodpecker.
villosus, adj. L.,=shaggy.
- Pipilo erythrophthalmus*.
pipilo (for *pipilo*), subs. L., =a chirping bird.
erythrophthalmus, adj. Gr.,=red-eyed.
comp. of *ἐρυθρός*,=red.
ὄφθαλμός,=eye.
- Poæcetes gramineus*.
poæcetes, subs. Gr.,=grass-dweller.
comp. of *πόα*, =grass.
ὄαυτος,=inhabitant.
gramineus, adj. L.,=grassy.
- Polioptila œrulea*.
polioptila, subs. Gr.,=gray-wing.
comp. of *πολιός*,=gray.
πίλον,=feather, wing.
œrulea, adj. L.,=blue.
- Podilymbus podiceps*.
podilymbus, subs. Gr.,=rump-footed swimmer, diver.
comp. of *podiceps*, adj. L.,=rump-footed (*podex*=rump, *pes*=foot).
colymbus, subs. Gr. (*κόλυμβος*)=diver.
podī(ceps)(col)ymbus.
podiceps, adj. L.,=rump-footed.
- Porzana carolina*.
porzana, subs. Ital.,=a crane.
carolina, adj.,=of Carolina.
- Progne purpurea*.
progne, Gr. prop. name,=swallow.
purpurea, adj. L.,=purple.
- Protonotaria citrea*.
protonotaria, subs. L.,=prothonotary.
citrea, adj. L.,=yellow.
- Pyrranga ruba*.
pyrranga,=native Indian name.
ruba, adj. L.,=red.
- Pyrranga aestiva*.
pyrranga,=native Indian name.
aestiva, adj.,=of the summer.
- Q
- Querquedula discors*.
querquedula, subs. L.,=a teal.
Same as *ζεφωργίς*.
discors, adj. L.,=discordant.
- Quiscalus purpureus*, var. *Aeneus*.
quiscalus, subs. L.,=*Quiscal*, a proper name.
purpureus, adj. L.,=purple.
aeneus, adj. L.,=brassy.
- R
- Rhyacophilus solitarius*.
rhyacophilus, subs. Gr.,=a lover of brooks.
comp. of *ῥυαξός*,=of a brook.
φίλος,=a friend.
solitarius, adj. L.,=solitary.
- S
- Sayornis fuscus*.
sayornis, subs. L. and Gr.,=Say's bird.
comp. of *sayis*,=gen. of (Thos.) Say.
ὄρνις,=bird.
fuscus, adj. L.,=stawny.
- Setophaga ruticilla*.
setophaga, subs. Gr.,=moth-eater.
comp. of *σῆς*,=moth.
εἶσθιον,=I ate (*ἔσθιω*).
ruticilla,=adj. L.,=reddish.
- Sialia sialis*.
sialia, adj. Gr.,=slavering.
Perhaps of *σιαλός*,=a slavering noise.
sialis, subs. Gr.,=name of some bird.
- Sitta carolinensis*.
sitta, subs. Gr. (*σίτη*),=nuthatch.
carolinensis, adj. L.,=of Carolina.
- Seiurus auricapillus*.
seiurus, subs. Gr.,=tail-shaker.
comp. of *σείω*,=I shake.
ὄψις,=the tail.
auricapillus, adj. L.,=golden-crested.
comp. of *aurum*,=gold.
capillus,=the hair.
- Seiurus motacilla*.
seiurus, subs. Gr.,=tail-shaker.
motacilla,=subs. L.,=water wag-tail.
- Spizella pusilla*.
spizella, Ital. subs.,=little finch.
Formed from *σπίτα*,=finch.
pusilla, adj. L.,=very little.
- Spizella socialis*.
spizella, Ital. subs.,=little finch.
socialis, adj. L.,=companionable.
- Stelgidopteryx serripennis*.
stelgidopteryx, subs. Gr.,=rough-wing.
comp. of *στειγίς*=*στεργίς*,=strigil.
πτερόξ,=wing.
serripennis, subs. L.,=rough-wing.
comp. of *serra*,=a saw.
penna,=a wing.
- Strix nebulosa*.
strix, subs. L.,=screech owl.
nebulosa, adj. L.,=clouded.
- Sturnella magna*.
sturnella, subs. L.,=little starling.
magna, adj. L.,=great.
- T
- Tachycineta bicolor*.
tachycineta, adj. Gr.,=quickly moving.
comp. of *ταχός*,=quick.
κινῆτος,=movable.
bicolor, subs. L.,=two-colored.
comp. of *bis*,=twice.
color,=color.
- Telmatodytes palustris*.
telmatodytes, adj. Gr.,=swamp-dweller.
comp. of *τέλμα*,=swamp.
ὄαυτος,=inhabitant.
palustris, adj. L.,=marshy.
- Thryomanes bewicki*.
thryomanes, subs. Gr.,=rush dweller.
comp. of *θύρον*,=a rush.
μάνης,=an inhabitant.
bewicki, subs. L.,=Bewick's.
- Thryothorus ludovicianus*.
thryothorus, adj. Gr.,=brush-leaping.
comp. of *θύρον*,=a rush, a reed.
θροῦν,=to leap upon.
ludovicianus, adj. L.,=Louisianian.

Tinnunculus sparverius.
tinnunculus, subs. L.,=kestrel.
sparverius, adj. L.,=like a sparrower.

Tringoides macularius.
tringoides, adj. Gr.,=sandpiper-like.
comp. of *τρογγας*,=a sort of wagtail.
σιδης,=like.
macularius, adj. L.,=spotted.

Trochilus colubris.
trochilus, subs. Gr.,=a bird of the sand-
piper species.
From *τροχλω*,=I run.
colubris, subs. irregularly formed from
the South American name of the
humming-bird,—*colibri*.

Troglodytes aedon.
troglodytes, subs. Gr.,=cave dweller.
comp. of *τρογκη*,=a hollow.
αιδων,=I enter.
aedon, subs. Gr. (*αιδων*),=singer.

Turdus mustelinus.
turdus, subs. L.,=thrush.
mustelinus, adj. L.,=weasel-like.
mustela,=weasel.

Turdus migratorius.
turdus, subs. L.,=thrush.
migratorius, adj. L.,=migratory.

Tyrannus carolinensis.
tyrannus, subs. L.,=tyrant (king-
bird).
carolinensis, adj. L.,=of Carolina.

V

Vireo gilvus.
vireo, subs. L.,=greenlet.
gilvus, adj. L.,=pale yellow.

Vireo olivaceus.
vireo, subs. L.,=greenlet.
olivaceus, adj. L.,=olive-colored.

Vireo noveboracensis.
vireo, subs. L.,=a greenlet.
noveboracensis, adj. L.,=of New York.

Z

Zenaidura carolinensis.
zenaidura, subs.,=Zenaide-tail.
comp. of *Zenaide*,=proper name.
ουρα,=tail.
carolinensis, adj. L.,=of Carolina.

Zamelodia ludoviciana.
zamelodia, subs. Gr.,=much singing.
comp. of *ζα*,=very.
μελωδια,=melody (perhaps
for *μελωδης*,=melodious).
ludoviciana, adj. L.,=of Louisiana.
From Ludovicus,=Louis.

NOTE.—The above key gives the names as they are in the text and upon the plates. Coues' "Check List" of 1873 was used for the first few parts, afterward the nomenclature of the United States National Museum, edition of 1881, was exclusively employed.

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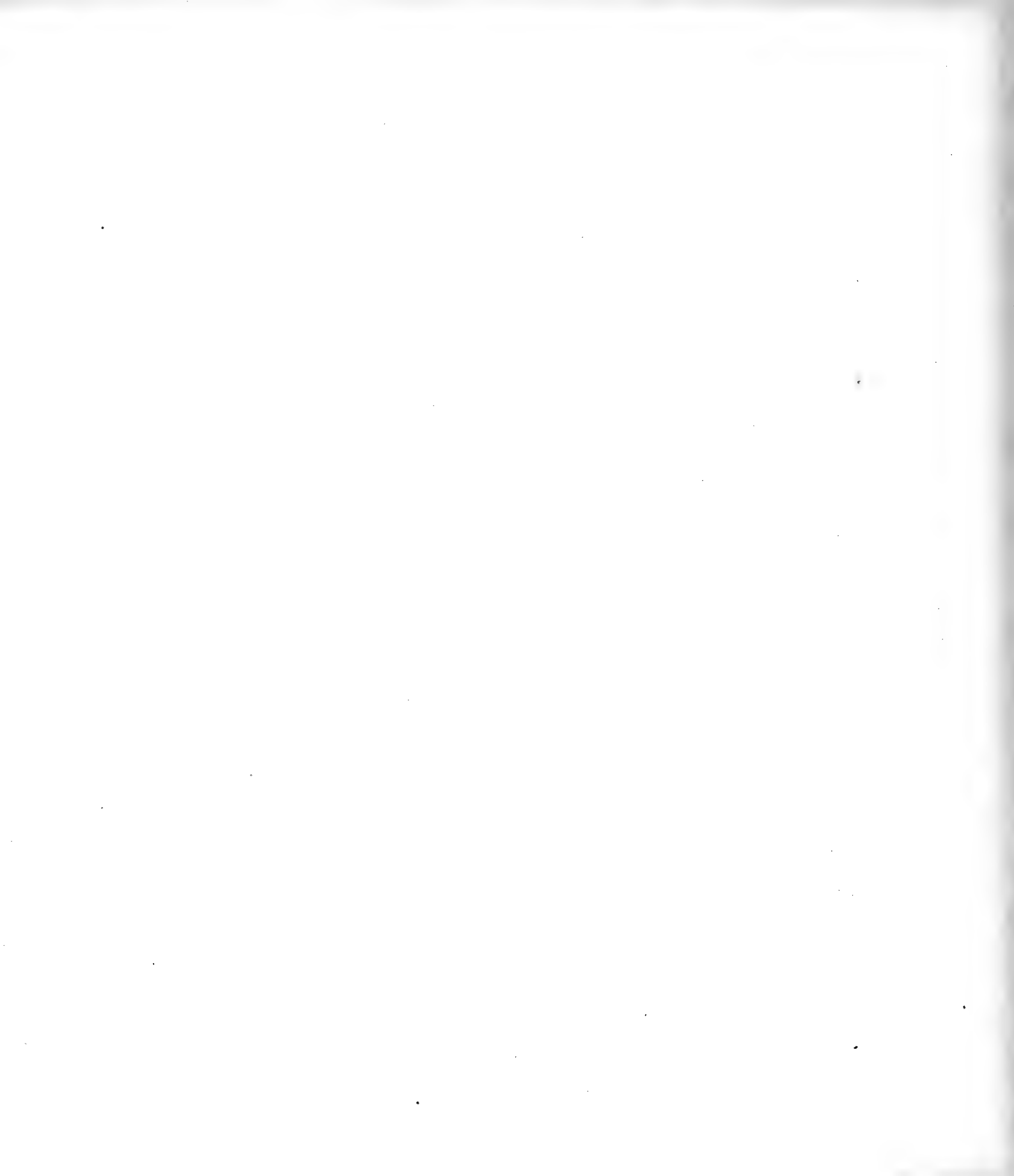
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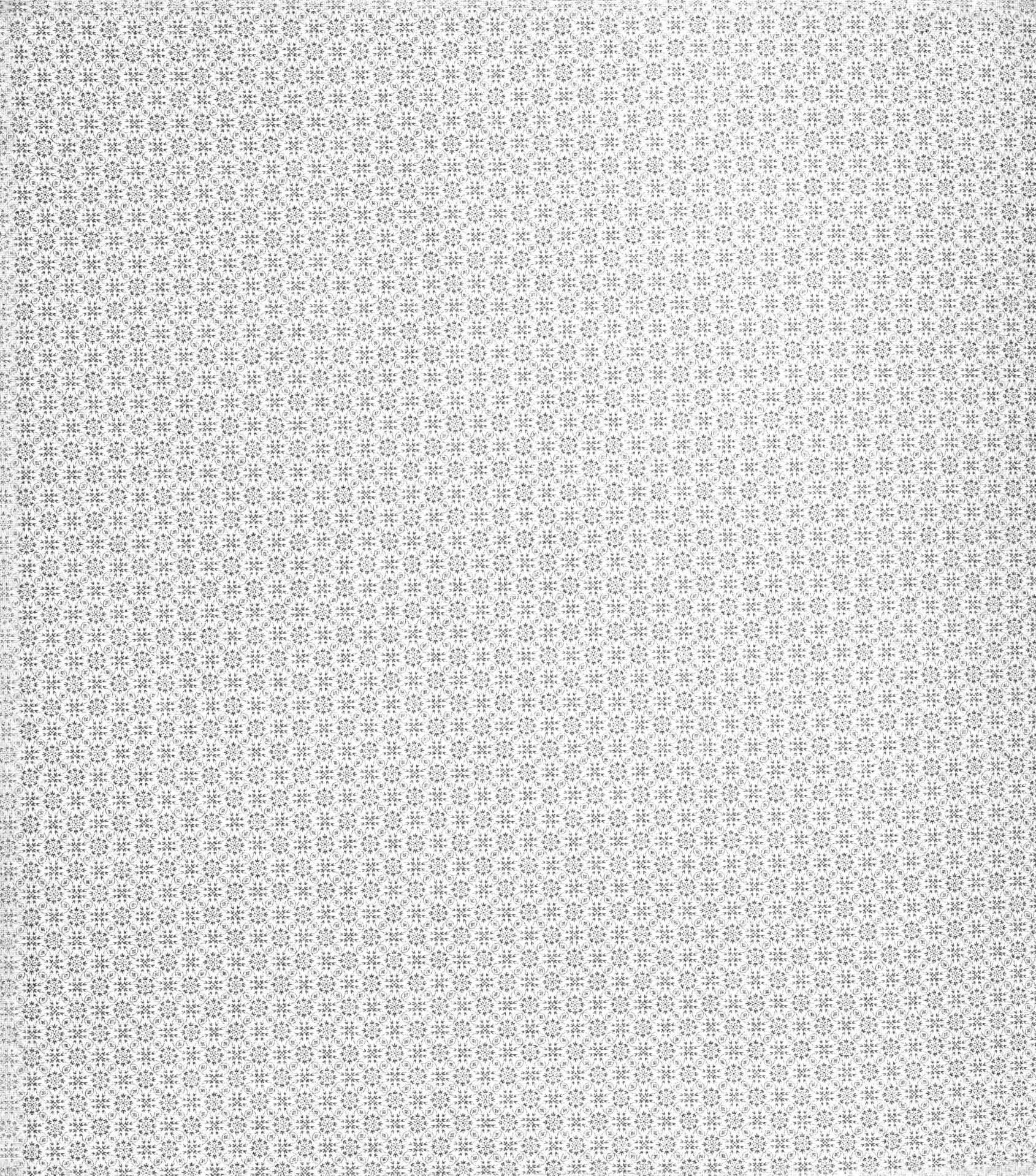
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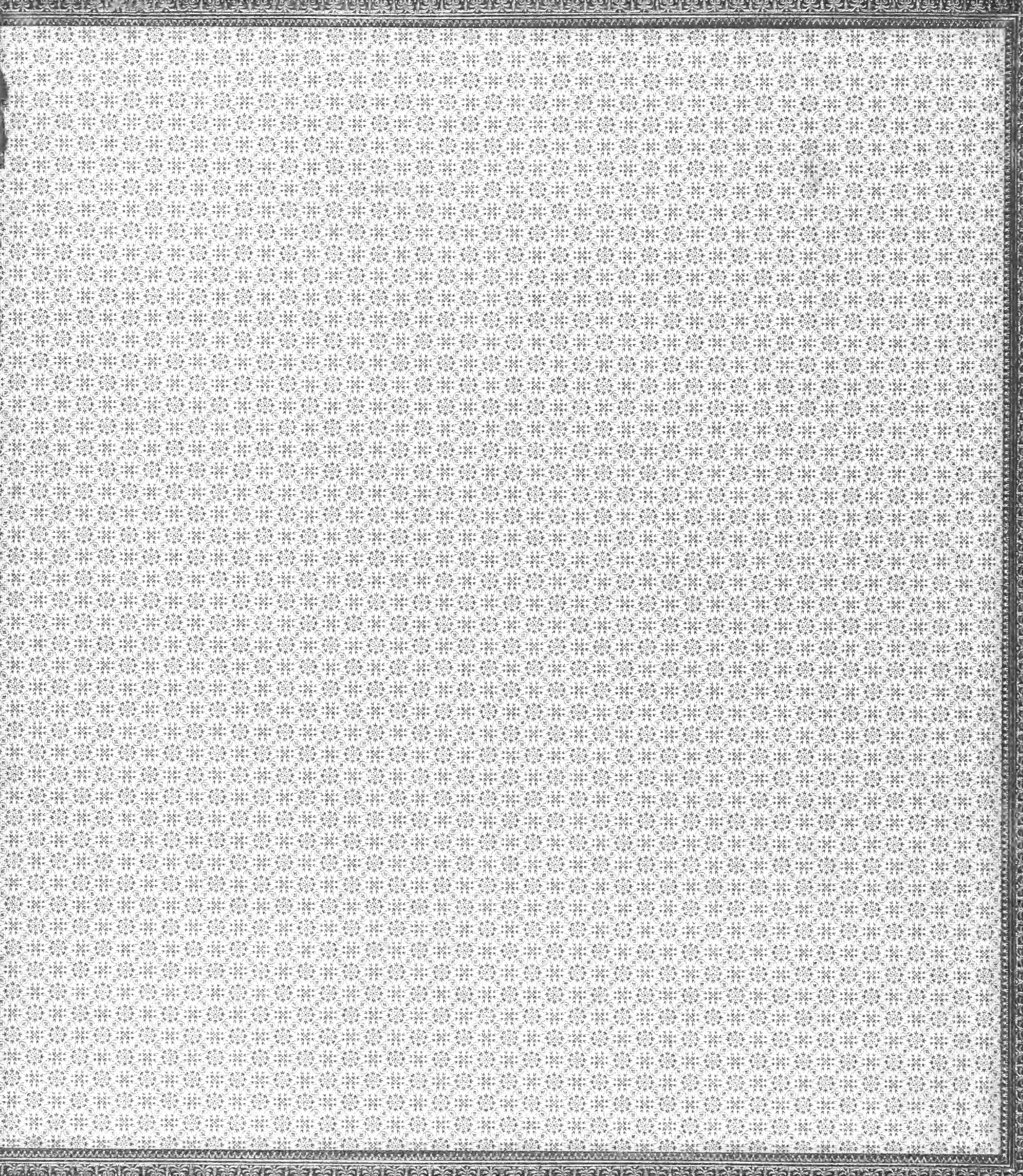
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