



Part 1

Price, \$5.

ILLUSTRATIONS

OF THE

NESTS AND EGGS

OF THE

BIRDS OF OHIO

WITH TEXT

BY

GENEVIEVE E. JONES AND ELIZA J. SHULZE

CIRCLEVILLE, OHIO

1879

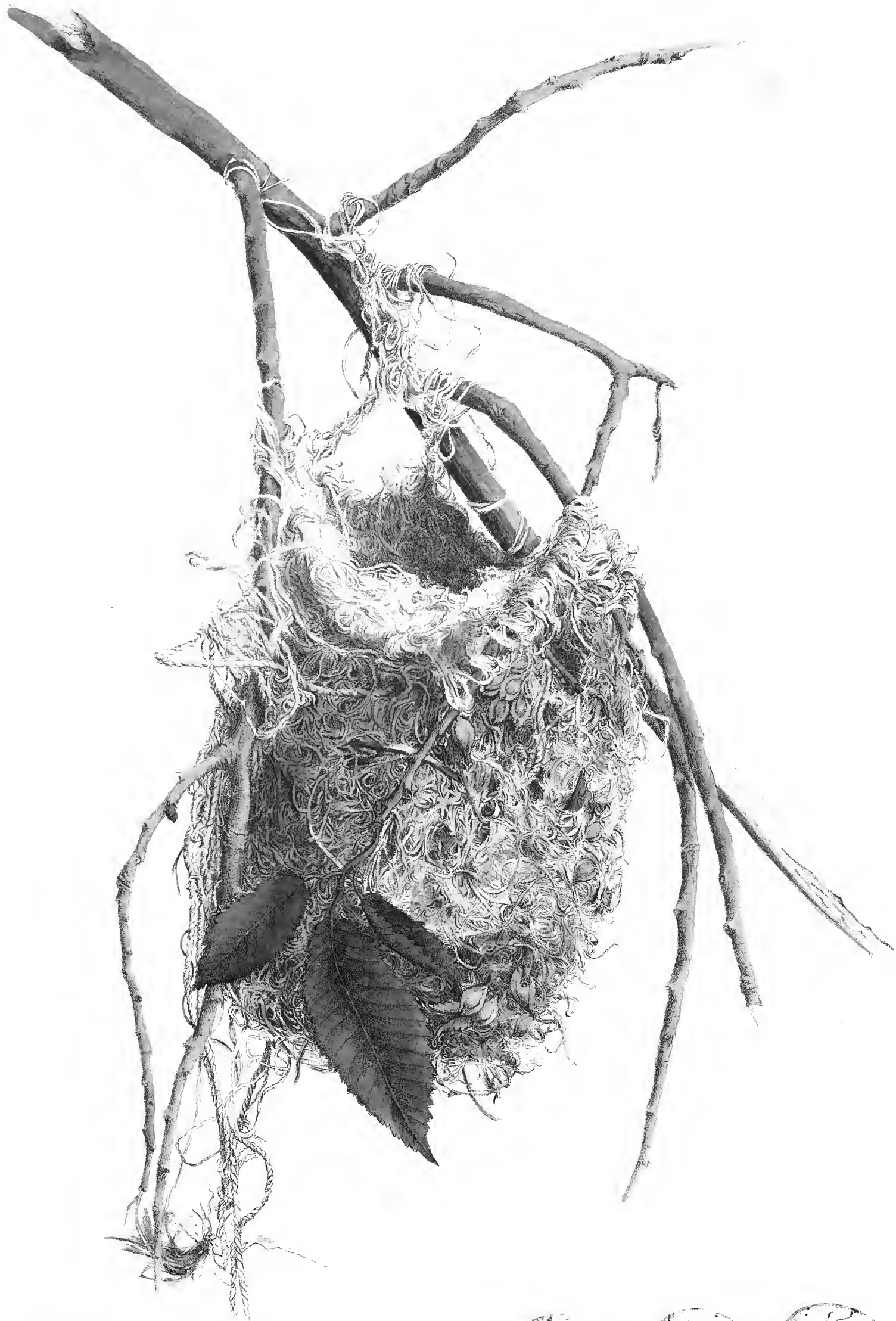
COPYRIGHTED BY GENEVIEVE E. JONES AND ELIZA J. SHULZE

JULY



fRL
675
J77
1886
e.1
RB
SI

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



Pl. I.
ICTERUS BALTIMORE.
BALTIMORE ORIOLE.



PLATE I.

ICTERUS BALTIMORE—*Baltimore Oriole*.

The Baltimore Oriole arrives in Ohio between the middle of April and the first of May. A fortnight later the bird can be seen busily engaged in the construction of the nest.

LOCALITY:

The elm, with its tough, pendant branches and close foliage, is pre-eminently the fittest of all our forest trees to receive, support and conceal this model of bird architecture. Other trees, however, are often occupied, such as the maple, oak, hickory and poplar, but the majority of nests in Ohio are, according to our observation, built in elms. No condition of soil or surrounding timber seems to be preferred above another; the elm is the favorite tree, be it beside a village street, in a dense forest, or an open field.

POSITION:

The typical nest is truly pensile, and is suspended from the extreme branches of an overhanging limb, where, shaded from the sun by the leaves above, it rocks to the gentlest breeze. At other times it is fastened to a perpendicular limb of considerable size, where the smaller branches put forth. Between these two positions various others are common and constantly met with; no two nests being hung in exactly the same manner. The distance from the ground varies from four to seventy feet.

MATERIALS:

During the period of nidification, any substance combining the proper length, thickness and strength is in demand; consequently the materials of construction are almost without number, and depend to a great extent upon locality.

In the woods, long grasses, strips of bark and vegetable fibres of different kinds make up the structure; but in cities and villages, or in the country, near houses, yarn, wrapping-twine, horse and cow hairs, rags, paper and such other substances as are ready prepared and accessible, are largely used. The lining is generally of hairs, vegetable down, and fibres.

The cavity varies in depth from two and three-fourths to six inches; inside diameter at the mouth, from two and three-fourths to three and three-fourths inches, increasing slightly near the bottom.

EGGS:

The complement of eggs is from four to six. They measure 1.05 x .70 to .80 x .50; average, about .92 x .60. When blown, the ground is white, with the brightness dimmed by the faintest bluish or pinkish tint, and marked with dots, lines, scrawls and blotches of dark brown or black, usually distributed irregularly over the surface; but often thickest about the crown, forming a wreath.

The deep shell markings look as if most of the coloring matter had been washed off, and the remaining had soaked in, making the outline indistinct.

One egg is dropped daily, until the complement is complete, and but one set is usually deposited during the season. Incubation lasts about fourteen days; the female performs the task alone.

DIFFERENTIAL POINTS:

For differences between the nests and eggs of the Baltimore and Orchard Orioles, see *Icterus spurius*.

REMARKS:

No attempt has been made to describe this most ingenious nest, believing that an examination of the plate will give a better idea of its construction than could possibly be had from words.

The nest figured was taken from the branches of an elm, which stands by the sidewalk of a village street. It was commenced the second week in May, 1874, and occupied both birds about ten days. It is composed principally of strings and fibres of flax, many of which are more than thirty inches in length; a few horse hairs are woven in near the mouth. Oviposition was begun the day following its completion. Only one of the eggs figured was taken from this set. The specimens represent the extreme and average sizes.

The statement has been made that in the South the nests, which are there constructed of "Spanish moss," are built upon the north side of the trees; while farther North they are uniformly placed upon the south side. A careful examination of a number of nests in this State has shown that the points of the compass have no influence whatever upon position: they are here found indiscriminately upon the north, south, east and west side of trees, and all points between.

It has also been asserted as probable that a marked change has taken place, since the States have become thickly settled, in the size and shape of this nest. The plate in Mr. Audubon's work shows a structure with the opening in the side, instead of at the top, as they are now constructed in this latitude. Accordingly, it is argued that this was formerly the usual shape; that the covering has been dispensed with since civilization has so reduced their enemies that it is no longer needed to conceal their bright colors. The same writers state that at the present time, in cities and villages and near farm houses, the nests are made much more shallow than in the woods, where there is greater danger from the attacks of hawks and other birds, than in the neighborhood of man.

Mr. Gentry, on the other hand, in remarking upon a nest "composed almost entirely of the hairs of the horse and cow," and "so slight in texture that it can readily be seen through," says: "It is evident that in days of primitive gloom, and even at the present time in thickly-wooded sections, a very dense nest is not at all desirable, since the birds obtain the required protection from the weather in the beautiful covering which nature throws over them. Now, in sections where the forests have disappeared by the strokes of the pioneer's axe, such shelter would not afford the comfort and security which the inmates demand. Birds not being slow to discern what best comports with their security, certainly this oriole which displays so much good taste and ingenuity, would readily perceive that a more compact and denser structure would be more desirable." Again, in speaking of a roofed nest composed of strings, he says: "In this anomalous form of nest still further improvement is manifested in the closely-woven roof. In open nests, protection is partially secured by the cluster of leaves that depend from above; the site being, doubtless, selected with a view to this natural arrangement."

Whatever of value there may be in these contradictory statements is not to be discussed here; suffice it to say that a close observation, during a number of years, has clearly established the fact that, at least in Ohio and Western New York, some of the deepest and best-concealed nests are built in villages, or near houses, where strings are abundant; and some of the most shallow—many measuring barely three inches—are built in uncultivated and wild districts.

The depth and beauty of a nest, therefore, seems to depend more upon the materials at hand, the experience, genius and hurry of the workers, than upon any other circumstances, each pair of birds shaping their home after their own ideas, as far as possible.

DSI



PL. II.
TURDUS MUSTELINUS.
WOOD THRUSH.

PLATE II.

TURDUS MUSTELINUS—Wood Thrush.

The Wood Thrush arrives in Central Ohio about the middle of April, and nidification begins as early as the last week in May: from this time until July, nests with fresh eggs may be found. The late nests either belong to birds that are raising a second brood, or to those that have had their earlier hopes destroyed by accident.

LOCALITY:

The scraggy haws, stunted elms, or other low trees, in damp thick woods, furnish their favorite nesting places, but occasionally these are deserted for the more cultivated fields and shrubs, such as orchards and ornamental trees, in gardens or along the roadside.

POSITION:

The nest is either saddled upon a horizontal branch or placed in a fork. It is never far above the ground, and is usually within easy reach.

MATERIALS:

The foundation consists of old leaves in greater or lesser quantities; occasionally, however, they are entirely absent, coarse grasses supplying their place.

The bulk of the nest is composed of dried grasses, weed stems, fibres and rootlets, rarely sticks and moss. These are firmly held in position by a plastering, composed of bits of rotten wood, fibres and mud; frequently the wood is in such minute pieces and incorporated so thoroughly with the mud that the plastering has the appearance of a coarse piece of wrapping paper. When dry it has very little strength, and crumbles under slight pressure into fine powder.

This "mud" is sparingly used, just enough being employed to give form and solidity to the structure. The lining is artistically done, with dark pinkish-brown or blackish rootlets and leaf stems, sometimes a few horse hairs. The plastering may be completely concealed, by this covering, but usually it is distinctly visible. The lining is thickest at the bottom and top, and extends over the rim and down the outside a quarter of an inch or more. The nest as a whole is neat and handsome, and measures, inside diameter, from two and three-fourths to three and one-half inches; inside depth, one and one-half to two and one-half inches.

EGGS:

The number of each set is from three to five. Oviposition begins in from one to six days after the completion of the nest. Authorities state that the eggs are deposited daily, but according to our observation there is no regularity in the matter, the eggs may be deposited every day, or only one in every three or four days; the temperature of the atmosphere has probably much influence.

Ineubation, which is attended to by the female, usually begins as soon as the complement of eggs is complete, and continues about twelve days.

The color of the eggs is a delicate blue, possibly sometimes spotted. They measure from .95 x .65 to 1.10 x .80; average of forty specimens, 1.00 x .70.

DIFFERENTIAL POINTS:

The only nest built in Ohio, with which that of the Wood Thrush is apt to be confounded, if any attention at all is paid to construction, is that of the Robin, and from this it can easily be distinguished by the fact that the latter is lined with dried grasses. The eggs may be confounded with those of the Cat Bird and Robin; from the former they can generally be distinguished by the color, from the latter by their size. However, with some specimens, it is impossible to say whether they are large eggs of the Wood Thrush or small eggs of the Robin. In such cases of doubt, of course, the question can be determined at once if the nest is at hand.

REMARKS:

Though the Wood Thrush is naturally shy, she rarely abandons her nest on account of intrusion; being repeatedly driven from it, she as often returns as soon as the danger is past. Cow Buntings often leave their eggs in her care; on several occasions as many as three have been taken from under one bird. The same home is often occupied for a series of years, the annual repairs consisting either of a new plastering and lining, or the latter alone. One nest in the authors' collection shows four distinct yearly additions. The first three seem to have been perfect structures, the fourth consists only of an abundance of rootlets, making a thick lining to the nest of the previous summer. The whole was stoutly placed in a perpendicular fork, which enabled it to resist so well the wear and tear of the seasons.

The plate represents a nest of the average size, and materials of construction, as they occur in Central Ohio. It was taken on the 30th of May, 1877, from a haw tree, *Crataegus spathulata*, in a damp wood without much undergrowth. The light fluffy leaves of the foundation, the mossy branches and emerald foliage, the boggy earth and rank grass beneath, together formed a picture beautiful and rustic, a fitting symbol of the quiet wood, the drear repose in which this brilliant songster so much delights.



Pl. III.
COCYZUS ERYTHROPTHALMUS.
BLACK-BILLED CUCKOO.

PLATE III.

COCCYZUS ERYTHROPHthalmus—Black-billed Cuckoo.

There are only three species of the family *Cuculidae* in North America; two of these, the Black and the Yellow-billed, are common to this state. The former comes from its winter home about the first of May; nidification begins a few weeks later. Only one brood is usually raised during the season.

LOCALITY:

The place usually selected for the nest is a wood where there is a thick undergrowth, and where the grape, ivy and other climbing vines are found.

While no particular tree or shrub seems, more than another, adapted to its use, the low, damp places near rivers and smaller streams are more likely to be chosen than the high lands, probably owing to the greater luxuriance of suitable vegetation near the water-courses.

POSITION:

The nest is built either upon a horizontal or in a perpendicular fork of a tree, upon a cluster of small branches, the top of a stump, the stems of the stronger climbing vines or a similar position affording a suitable resting-place, and is always surrounded by thick foliage.

Its height varies from one foot to about thirty feet, but is rarely, if ever, found directly upon the ground. The nests of low position, are usually built in the perpendicular forking of stunted elms, thorns or other small trees. The higher nests are built among the vines.

MATERIALS:

The materials of construction are sticks, twigs, thorns, grasses, rootlets, strips of bark, blossoms and catkins.

The sticks are variable in size, and with the thorns form the foundation; the whole is loosely thrown together and is a miniature of the hawk's nest. Catkins of the oak, poplar, etc., or grape blossoms, with grasses, weed fibres and rootlets, form the lining and are often worked into the foundation. Frequently strips of bark, leaves or lichens, are added to the usual twigs, thorns and catkins.

EGGS:

The complement of eggs is from two to five, usually four. They are of a light bluish-green color when blown, sometimes mottled with a darker shade, and vary exceedingly in shape; some are elliptical while others only approach that form, and have an average measurement of 1.12 x .83.

They are usually deposited one every day, but quite an interval may elapse, so that young birds and almost fresh eggs may be found in the same nest.

DIFFERENTIAL POINTS:

The nests and eggs of the Yellow and Black-billed Cuckoos resemble each other closely, and it is not always possible to differentiate the two. Nests of the former are often found which could not be

mistaken for those of the Black-billed on account of the coarseness of the nest, larger size and paler color of the eggs; but the nest and eggs of the latter have no characteristics which might not belong to the former. However, as a rule, the nest of *C. erythrophthalmus* may be known from that of the *C. americanus* by the fact that it is constructed with more care, the sticks being somewhat smaller, the catkins less numerous, and the whole woven together in a firmer manner. The eggs are smaller, less elliptical, and of a slightly darker green. There are no nests or eggs of other birds in the limits of the state, with which these may be confounded by any moderately careful observer.

REMARKS:

The nest figured was taken on May 21st, 1878, from a thicket overgrown with climbing vines, in a low piece of woods near the Scioto river, Pickaway county. It was placed about seven feet from the ground, supported by the dead branches of a thorn tree, together with the stems of ivy which climbed about the tree. It contained four eggs, measuring 1.18 x .89, 1.10 x .83, 1.13 x .79, 1.08 x .85, three of which are figured in plate. Its foundation is constructed of thorns and slender twigs from three to eight inches in length; upon this is a superstructure of layer upon layer of catkins of the oak, occasionally a slender twig, with small pieces of dried leaves and lichens. The lining consists of fine round stems of weeds and small tendrils, together with catkins which compose the bulk of the nest. It measures, in diameter, about four and three-fourths inches, in depth about two and three-fourths. Concavity is very slight, in fact it is almost flat on the upper surface. The nest is rather difficult to find, owing to it being built in dense foliage. It is well known that the foreign Cuckoos are parasites, and, like the Cow bird, deposit their eggs in the nests of other birds, leaving them to be reared by their foster-mother. The American Cuckoo is occasionally guilty of the same misdemeanor. The bird is shy, and shows but little attachment to her nest and eggs, and rarely complains when robbed. Authorities state that it plunders the nests of other birds, after the habit of the Blue Jay, and even devours the young.

Part 2

Price, \$5

ILLUSTRATIONS

OF THE

NESTS AND EGGS

OF THE

BIRDS OF OHIO

WITH TEXT

BY

GENEVIEVE E. JONES AND ELIZA J. SHULZE

CIRCLEVILLE, OHIO

1879

COPYRIGHTED BY GENEVIEVE E. JONES AND ELIZA J. SHULZE

OCTOBER

It is with great sorrow I have to announce to the subscribers to "Illustrations of the Nests and Eggs of the Birds of Ohio," the death, on the seventeenth of last August, from Typhoid Fever, of my collaborator MISS GENEVIEVE E. JONES.

In the future numbers of the Work, Mrs. Virginia E. Jones will assist with the Illustrations, and the text will be prepared by Howard E. Jones, A. M., M. D.

ELIZA J. SHULZE.



PL. IV.
CYANOSPIZA CYANEA.
INDIGO BIRD.



PLATE IV.

CYANOSPIZA CYANEA—Indigobird.

The Indigobird arrives about the first of May; from this time until fall, his spirited warblings can be heard along the public roads and by-ways, from the humblest bush to the topmost branch of the forest tree, the brilliantly plumed male pours forth his melodies, seeming to make of the summer months one continual round of holidays. Nest-building begins the last of May or first of June, and as late as August nests containing fresh eggs may be met with. The late nests, however, are not abundant, and are evidently the property of birds raising a second or even a third brood.

LOCALITY:

Thickets of briars, bushes, and young trees along roads or about the borders of fields and streams, and outskirts of timber-land, are the most frequented nesting places; they rarely venture into deep woods or large towns. In the hilly country in the southern part of the state, the nests are not as common as they are in the plains; and, when found at all, are near the cultivated valleys or strips of recently-cleared land.

POSITION:

The nest is ordinarily situated near the ground, seldom higher than eight or ten feet; it is usually placed in a perpendicular fork, but it may be built among a number of twigs or brier-stems, or saddled upon a limb and firmly held by slender branches at the sides. Nests are undoubtedly built directly on the ground, but such a position must be considered as exceedingly rare.

MATERIALS:

The materials of construction, and dimensions of five nests procured in different sections of the state, and from various positions, are as follows:

No. 1. Outside diameter, three and three-eighths; outside depth, two and one-half; inside diameter, two and one-eighth; inside depth, one and three-quarters, inches. Position: perpendicular fork of elder bush, upon a high river-bank. Foundation: dried oak leaves, fine rootlets, and a few small weed-stems. Superstructure: dried blue-grass and bits of oak leaves, with a very few fine rootlets. Lining: slender blades of blue-grass and several long black horse hairs.

No. 2. Outside diameter, three and one-half; outside depth, two and three-quarters; inside diameter, two and one-half; inside depth, one and one-half, inches. Position: perpendicular fork of small elm by the roadside. Foundation: pieces of oak leaves and corn husks, and fine weed-stalks. Superstructure: oak leaves, roller-grass, and rootlets, held in place without by an abundance of cob-webs. Lining: fine round grasses and black horse hairs.

No. 3. Outside diameter, three and one-half; outside depth, three; inside diameter, two and one-eighth; inside depth, one and three-fourths, inches. Position: horizontal fork of dogwood tree in thick

woods. Foundation: mostly well-worn leaves. Superstructure: whitish rootlets and bits of leaves fastened to the points of support by cobwebs. Lining: tendrils, horse hairs, and a few blades of blue-grass.

No. 4. Outside diameter, four; outside depth, three and one-half; inside diameter, two and one-eighth; inside depth, one and three-fourths, inches. Position: perpendicular fork of young elm growing in the fence-corner of a wheat field. Foundation: entirely of bits of various dried leaves and rootlets. Superstructure: similar, but finer rootlets about the rim, and well covered with cobwebs. Lining: rootlets and split grasses, finer than the few black horse hairs which accompany them.

No. 5. Outside diameter, four and one-fourth; outside depth, two and one-fourth; inside diameter, two; inside depth, one and one-half, inches. Position: saddled upon three small branches close to the forking, overhanging water. Foundation and superstructure, similar to No. 4. Lining: round grass and horse hairs.

The average internal measurement of a large number of nests is: inside diameter, two and one-eighth; inside depth, one and three-eighths, inches. Nests are frequently met with the external dimensions of which are much greater than those just described above; the materials, however, are similar.

EGGS:

The complement of eggs is from three to five, generally four; they are faint Antwerp-blue, when freshly blown, fading in a few months to nearly white.

They measure from .69 x .52 to .75 x .59; average, .72 x .56.

Exceptional eggs are plain white, and white or bluish dotted with reddish-brown.

Dr. Coues, in "Birds of the North-west," says: "The egg of the Indigobird is variously described as pure white, plain blue, or bluish, speckled with reddish-brown. The fact appears to be, not that these statements are conflicting—or any of them erroneous, but that different eggs vary accordingly. It seems to be the general rule with normally bluish eggs, that they range in shade from quite blue to white, and are occasionally speckled."

Dr. J. M. Wheaton informs me, that he recently found a nest containing speckled eggs. They, however, seem to be quite rare. I have never met with any but plain, faintly blue specimens.

DIFFERENTIAL POINTS:

To designate points of difference between this nest and others of like size, so that it may be recognized, would be exceedingly difficult if not impossible. Yet there is a something about its general appearance which is characteristic. If normal eggs accompany it, the identification will be extremely easy, as they may be known by their size and color.

REMARKS:

The nest illustrated, was taken on the 28th of May, 1877, from an elder bush. The foundation consists of pieces of leaves and corn husks, mixed with rootlets, weed-stems, and grasses; the superstructure is similar, but with finer rootlets about the rim. The lining is composed of about equal proportions of split grasses, fine bits of roller-grass, and black horse hairs; cobwebs are attached at irregular distances to the exterior, and seem to be used more for ornament than for any additional strength they may give to the structure.

The outside diameters are four and one-half and three and one-half; the outside depth, three; inside diameter, two and one-eighth; inside depth, one and three-fourths, inches. The nest was selected for illustration on account of its apparently large size; the loose arrangement of the materials at the left makes it seem larger than it really is; a close examination will show the true walls. The eggs are colored from freshly blown specimens, and represent the average and extremes in size and color.



Pl. V.
AGELÆUS PHŒNICEUS.
RED-WINGED BLACKBIRD.

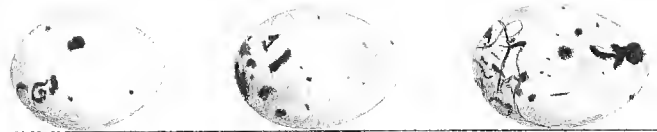


PLATE V.

AGELÆUS PHŒNICEUS—Red-winged Blackbird.

The Red-winged Blackbird arrives in Ohio about the first of March; nest-building begins the last of April or the first of May; two broods are often raised during the season. In the fall they fly about over the marshes in large flocks, prolonging their stay in favorable seasons far into December, and a few may even remain during the winter.

LOCALITY:

The early nests are built among the dried stems of the various reeds and water-plants so abundant along canal basins, ponds, and natural streams; the later ones, in the branches of alders, willows, and other bushes and trees about swamps or in damp woods, and in clusters of weeds and briars in springy meadows.

POSITION:

When a tree or bush is the chosen site, the nest is generally situated in a perpendicular fork, or is suspended between two or more small perpendicular branches, and is seldom more than ten feet above the ground. When built in reeds, the structure is woven between a number of blades, as figured in the plate, and often within a few inches of the surrounding water.

When built upon the ground, a little mound or tussock covered with the dried vegetation of the previous year is selected; no attempt is made at concealment. By far the greater number of nests are in the last two positions.

MATERIALS:

The materials of construction are dried grasses, strips of fibres from flags and weeds, round grass, and sometimes pieces of mud and a few horse hairs. The long grasses make up the bulk of the structure, and in nests suspended in reeds, bushes, or trees, they are woven firmly and elegantly about the points of support, and entwined among themselves; but in those situated in stout forks or upon the ground, such skill and precaution in weaving are unnecessary or impracticable.

The grasses forming the superstructure are well soaked in water, generally muddy, before they are placed in position; when dry they make a solid and compact shell, which can be dissected from the nest without injury; in shape it is like the pointed half of an egg-shell, and is from a quarter to five-eighths of an inch thick at the bottom, gradually becoming thinner as the rim is approached. The lining is composed of round grass, and sometimes a few horse hairs.

Position has great influence on the shape; nests upon the ground are shallow, while those in other positions may be six or even eight inches deep. The average of ten specimens taken from trees and rushes is: outside diameter, five inches; inside diameter, three inches; outside depth, four and one-half inches; inside depth, two and one-half inches.

EGGS:

The complement of eggs is from three to six, they are deposited daily or every other day, and are incubated in fourteen days. The ground-color is light blue, marked with irregular blotches, lines, and dots of dark brown or black, which incline to congregate about the crown. Deep shell-markings have a muddy brown appearance.

Exceptional specimens are plain blue, or have only an occasional dot or blotch of black, either upon or below the surface.

The average size of thirty eggs is .96 x .70; largest, 1.04 x .73; smallest, .86 x .66.

DIFFERENTIAL POINTS:

The normal nest should be at once recognized from the description, as it is similar to no other bird-structure in the state. Its resemblance to the nest of the Crow Blackbird, Baltimore Oriole, or Marsh Wren, is too distant to need more than mention. The normal eggs are in general appearance, like those of the Crow Blackbird, but smaller.

REMARKS:

The nest illustrated was taken on the 10th of May, 1877, from a swamp in Pickaway county. It is of the average size, and composed principally of dried grasses and strips of flag leaves, lined with round grass and a few black horse hairs. The eggs figured were selected from a large number, and represent the average and extremes in size and markings. The coloring is done from freshly blown specimens.

In late spring or early summer, if a spot selected by the Redwings as a breeding-place is invaded, it is extremely interesting to watch the movements of the disturbed community. As you enter the swamp, little by little, forcing a way with difficulty through the dead stalks of rushes and sticky mud, several males that have been watching the advance from some neighboring bush, becoming alarmed for the safety of their homes, commence a series of plaintive cries, and mounting the air fly in circles above your head. This signals the whole marsh, reinforcements gather in from every quarter, and now, where a few minutes before nothing could be heard but an occasional contented cluck, comes a perfect chorus of voices; a few steps more, and a modest-lued female flutters from her eggs near by, and with despairing calls joins her brilliantly-attired companion, amid renewed screams and gyrations on the part of the assembled birds.

Followed by this pleading crowd, the search for the nest begins; large and conspicuous as it seems, it is by no means easy to find, as the color harmonizes perfectly with the dead reeds in which it is built. But finally having discovered it, most probably by accident, and secured the prize, you commence to retrace your steps. Having thus learned where the desired object is to be found, the eye now sees them where on your entrance they were looked for in vain; perhaps, some even overturned in the path of advance. All this time the Starlings accompany you, and a pair braver than their companions, may even venture an attack, as they see their hard-earned home carried off by a ruthless foreigner.

The young birds, to which the parents are, if possible, more attached than to their nests and eggs, are very easily tamed, and endure captivity well, forming strong attachments to those who care for them. One which I owned some years ago, became so domesticated that he was permitted during the day to enjoy his freedom. At such times, he would wander about the town, flying from roof to roof, picking up such eatables as he could find. He would always return at the call of his name; or at times recognizing my voice, would unexpectedly light upon my shoulder.



Pl. VI.
TYRANNUS CAROLINENSIS.
KINGBIRD.

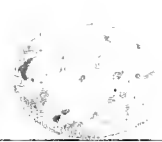
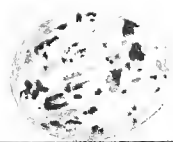


PLATE VI.

TYRANNUS CAROLINENSIS—Kingbird.

The Beebird, as this species is commonly called, arrives in Ohio the last of April; nest-building begins the third week in May, or may be delayed by unfavorable weather until the first of June. Two broods are frequently raised during the season.

LOCALITY:

The nests may be found in suitable localities throughout the entire state. Old apple and pear trees, both in town and country, and other trees standing alone or in detached clumps in open districts, furnish desirable and noticeable situations, while woodlands are avoided.

But, notwithstanding this very general distribution, the Kingbird seems to display a natural penchant for well watered regions. Isolated sycamores and elms in low lands, or in the neighborhood of streams, being especially frequented and typical sites.

POSITION:

The nest is placed either in a horizontal or perpendicular fork, or, partly saddled upon a limb, is held firmly by small branches which grow from about the principal point of support. Its distance from the ground is from three to forty feet, usually not lower than eight or higher than twenty feet.

MATERIALS:

The materials of construction are numerous, and vary somewhat with locality and position. The foundation and superstructure generally consist of any rubbish at hand, such as dried grasses, weed stems and fibres, sticks, rootlets, bits of vegetable down and wool, firmly matted together, forming a rough or even slouchy exterior; and coated inside with plaster composed of rotten wood and decayed vegetable material, finely ground together, and firmly pressed against the walls within half an inch of the rim; when dry, it crumbles into powder on the slightest pressure.

The lining is formed of slender grasses, chicken feathers, horse hairs, fibres, rootlets, and wool, used singly or combined in various proportions. It is by no means rare to find a nest made up of flaxen fibres and grasses, and lined with dark brown or blackish rootlets. But of all the different materials used in construction, feathers, black horse hairs, round grasses, and plaster, are, according to our observation, the most constant. Ornamentation is sometimes a prominent feature; any substance which seems to strike the bird's fancy, and is accessible, is used—such as wool, feathers, or corn silk.

The inside depth is from one and one-eighth, to one and five-eighths, inches; the inside diameter rarely varies half an inch from three inches; the outside diameter at the rim is from four to five inches; an average of five specimens is four inches.

EGGS:

The complement of eggs is from four to six; the ground color is creamy white, dotted and blotched

with chocolate brown; the deep shell markings have a purplish hue. The marks may occur irregularly over the surface, or be confined to the crown, forming a wreath; occasionally the coloring matter is deposited in seraws and lines, or being regular in outline, is so deep beneath the surface that it appears a faint lilae.

The average size of twenty specimens is .96 x .71; the largest, 1.02 x .75; the smallest, .85 x .63. They are deposited every day, and incubated in fourteen days.

DIFFERENTIAL POINTS:

The nest of this species might possibly be mistaken for that of the Loggerhead Shrike (*Collurio ludovicianus*); the locality, position, and even the materials of construction, are often very similar. As a rule, it may be stated that the former is smaller, firmer, and harsher, and contains a plaster which is entirely wanting in the latter. The eggs are not to be confounded with any others common to the state.

REMARKS:

The nest represented in the drawing was taken in June, 1877, from a sycamore growing on the bank of the canal in the southern part of Pickaway county; it was distant from the nearest farm-house about three-quarters of a mile.

The foundation is composed of dried grasses, weed stems and fibres, straws, and sticks; the superstructure is of similar, but finer and better selected material, well plastered within, and ornamented without with pods from the wild cucumber vine. The lining is of round grass, horse hairs, feathers, and wool. The inside diameter measures three and one-eighth; the outside diameter four and three-quarters; and the inside depth, one and three-quarters, inches. The eggs represent the usual sizes, and are colored from freshly blown specimens.

PLATE VII.

QUISCALUS PURPUREUS var. *ÆNEUS*, Rdgw.—*Crow Blackbird*.

The Bronzed Grackle, as this variety should be called, arrives about the first of March, and, if the weather is warm, may at once begin to build; two broods are seldom raised during the season.

LOCALITY:

For the purpose of nesting either a cavernous tree is selected, or the nest is situated directly among the branches of such trees as grow about the margin of swamps and ponds, and upon the banks of ditches, creeks, and larger streams. The dead sycamores which remain standing in the fertile river lands, furnish many hollow limbs which are particularly well adapted to the requirements of the bird; if, however, no natural cavity can be found, the deserted home of a large Woodpecker may be chosen. But these natural haunts are frequently forsaken for orchards and ornamental evergreens in yards and parks.

POSITION:

The nest is either supported by the walls of a cavity, or placed in a perpendicular fork formed by a number of branches; when in the former position, it is high and inaccessible; while in the latter one, it is commonly within ten or fifteen feet of the ground, or even lower.

MATERIALS:

The foundation is composed of dried grasses, straws, and weed stems. The superstructure is composed also of grasses and weed fibres, with occasionally pieces of wool and feathers, and is thoroughly plastered with mud or manure, pressed solidly against the walls by the breast of the bird. The lining is principally of round grasses, and sometimes a few horse hairs, completely concealing the plaster.

I have had an opportunity to examine but two nests from holes in trees; these were similar to those just described, except the foundation, which in one was entirely absent, and in the other very bulky. The amount of material used in such nests of course depends upon the size of the cavity, just as the external dimensions of the nest when placed in a crotch, depend upon the angle formed by the branches; when this angle is small, the structure may measure twelve or fifteen inches in outside depth; when it is large, the depth may be even less than four and one-half inches.

The inside diameter of the nest is quite constant, wherever it may be placed, averaging about four and one-eighth inches; inside depth is from two and one-half to three and three-fourths inches.

EGGS:

The complement of eggs is from four to six; they are uniform in shape, but vary much in markings. The ground color is light greenish or smoky blue, with irregular dark brown or black blotches, dots, lines, and scrawls, distributed promiscuously over the surface, often resembling Japanese characters. The deep shell-markings have a dirty purplish brown appearance. In exceptionally colored

eggs the ground may be dirty white or yellowish brown, with or without markings, or simply plain blue. The average of twenty-five specimens is 1.13 x .83; the largest, 1.20 x .89; the smallest, 1.08 x .79.

DIFFERENTIAL POINTS:

A typical nest should be recognized at once from the above description, but structures may be met with which will require careful examination to distinguish them from the work of the Robin. For detailed differences, see *Turdus migratorius*. The eggs may be known from those of the Redwing by their larger size.

REMARKS:

A colony of these Grackles have for years built in a grove of thorn trees, in a piece of wet grass land not far from Columbus, Ohio. Here, as early as the fifteenth of March nests may be found, and by the last of April every tree is occupied; some small ones containing as many as three nests.

The nest illustrated was taken from this locality on the fourth of May, 1877. The foundation and superstructure consist of coarse grasses and the stalks of small weeds, those on the inside of the superstructure being well smeared with mud before they were placed in position: the plaster of mud extends to the rim, and is entirely covered by the lining of round grasses. The inside diameter is four inches; the inside depth three inches. The eggs figured are colored from freshly blown specimens, and represent the sizes and colors most frequently met with.

Ornithological writers seem to agree that the Crow Blackbird is a cowardly thief, and a habitual plunderer of the nests of other birds. Mr. Minot, in "Land and Game Birds of New England," speaking of the habits of *Quiscalus purpureus*, says: "They do great injury by their depredations on grain fields, and their fondness for the eggs and young of other birds. Disagreeable as it is to witness the destruction of any feathered creature, I should not hesitate to sign a death-warrant in the case of these robbers." An experienced ornithologist assures me that variety *Aeneus* is equally devoid of all sense of right. Such observations can not be doubted, and must remain a blot upon an otherwise good character. I have, however, never seen anything in their conduct to lead me to suspect any such wickedness, and must here say a good word—a negative, it is true—in behalf of the bird.

Wherever I have met them in the country, they have always seemed to be upon the best of terms with other species. I have repeatedly seen their nests within a few yards of an unmolested Dove's, and once discovered an old stump, which, besides the nest of the Bronzed Grackle, contained a Bluebird's and a Sparrow Hawk's.

When breeding in yards and parks, in or about cities and towns, the smaller birds which frequent such places, seem none the less numerous, or at all discomfited by their presence; neither do they hesitate to place their eggs in the same evergreen in which a pair of Grackles are rearing their young.

I am therefore constrained to believe that these Grackles do not, at least during the time in which they are occupied in rearing the family, molest either the eggs or nestlings of other species to the extent accredited them. What bad habits they may lapse into later in the season, I am not prepared to say.

In the early history of the state, the Crow Blackbird was considered one of man's greatest pests, and even to-day they are shot down by hundreds, on account of the bad reputation gained in former times. But the time for such destruction should be considered as past; they no longer pull up the infant blades of corn, or destroy the ears by picking into them while young and juicy; but, on the contrary, they are the only birds that, early and late, untiringly follow the plowman's footsteps along each newly-made furrow, searching for and devouring the noxious insects which might infest or destroy the coming crop.

Part 3

Price, \$5

ILLUSTRATIONS

OF THE

NESTS AND EGGS

OF THE

BIRDS OF OHIO

WITH TEXT

BY

GENEVIEVE E. JONES AND ELIZA J. SHULZE

CIRCLEVILLE, OHIO

1879

COPYRIGHTED BY GENEVIEVE E. JONES AND ELIZA J. SHULZE

JANUARY

1880





Pl. VII.
QUISCALUS PURPUREUS var. AENEUS, Rdgw.
CROW BLACKBIRD.



PL. VII.
TURDUS MIGRATORIUS
ROBIN.

PLATE VIII.

TURDUS MIGRATORIUS—Robin.

In the fall of the year Robins assemble in large flocks and wander about the country until the approaching cold season drives some to the Southern States, and others to the thickest timber-lands, where they seek protection and food throughout the winter. About the first of March they return to their accustomed summer resorts, and if a few warm days occur at this time, some birds, either braver or more foolish than their companions, begin to build; but commonly nesting does not commence until May. Two broods and sometimes three are raised during the season, so that as late as August nests and eggs may be found.

LOCALITY:

There is no pasture too bare, no woods too thick, no town too smoky, for this cosmopolitan. Wherever a proper food-supply for the young can be obtained, there the Robin may build her nest, seeming to care little whether it be placed in the drooping branches of the willow overhanging the river, the oak upon the hill-top, or the shade-tree upon the busy thoroughfare.

POSITION:

The nest is generally situated in a stout perpendicular fork, or placed upon a horizontal limb; if this limb is small the nest is built where little branches will support its sides. These two positions are the common and normal ones, but it is not rare to find a nest built in some small bush or climbing vine, or upon the flat top of a stump, a shelving rock, a fence post or rail, or some such place, either natural or artificial; these departures from the usual positions are most frequently met with early in the season. The usual height of the nest from the ground is between five and fifteen feet, but it may be as high as fifty feet, or sometimes directly upon the ground.

MATERIALS:

The foundation of the nest in the country consists of coarse weed-stems, grasses, mud, and occasionally sticks and leaves; the mud is most abundant when the supporting surface is horizontal. The superstructure is composed of weed-stems, grasses, straws, fibres, and mud; the latter thoroughly covers the inside, and is worked into a firm wall by the feet and breast of the bird, and nicely rounded about the rim by the bill; in a typical nest this mud forms a perfect bowl. The lining is composed of well-selected blades of bleached grass, some of which may be firmly attached to the plaster if it was not thoroughly dry when they were placed in position. The grasses are most abundant at the bottom of the cavity, becoming fewer as the rim is approached, where the mud is always distinctly visible.

The nests built in cities, towns, or in the immediate neighborhood of country dwellings, often contain in their foundations and superstructures, besides the materials mentioned above, any rubbish which is accessible and pleases the fancy of the builder, such as strings, rags, yarn, paper, feathers, and cotton; but the

plaster and the lining are invariably the same in every locality and position. The nests average about four inches in internal diameter, the external diameter about six inches; the depth of cavity varies from one and one-half to two and one-half inches.

EGGS:

The complement of eggs is from three to five, usually four. They are "Robins-egg blue" in color, very constant in shade, and have quite a glossy shell. They measure from 1.00 x .71 to 1.20 x .86, average 1.12 x .80. They are deposited daily or every other day, and are incubated in fourteen days. Occasionally spotted and white eggs are reported as being found, but such eggs are rare.

DIFFERENTIAL POINTS:

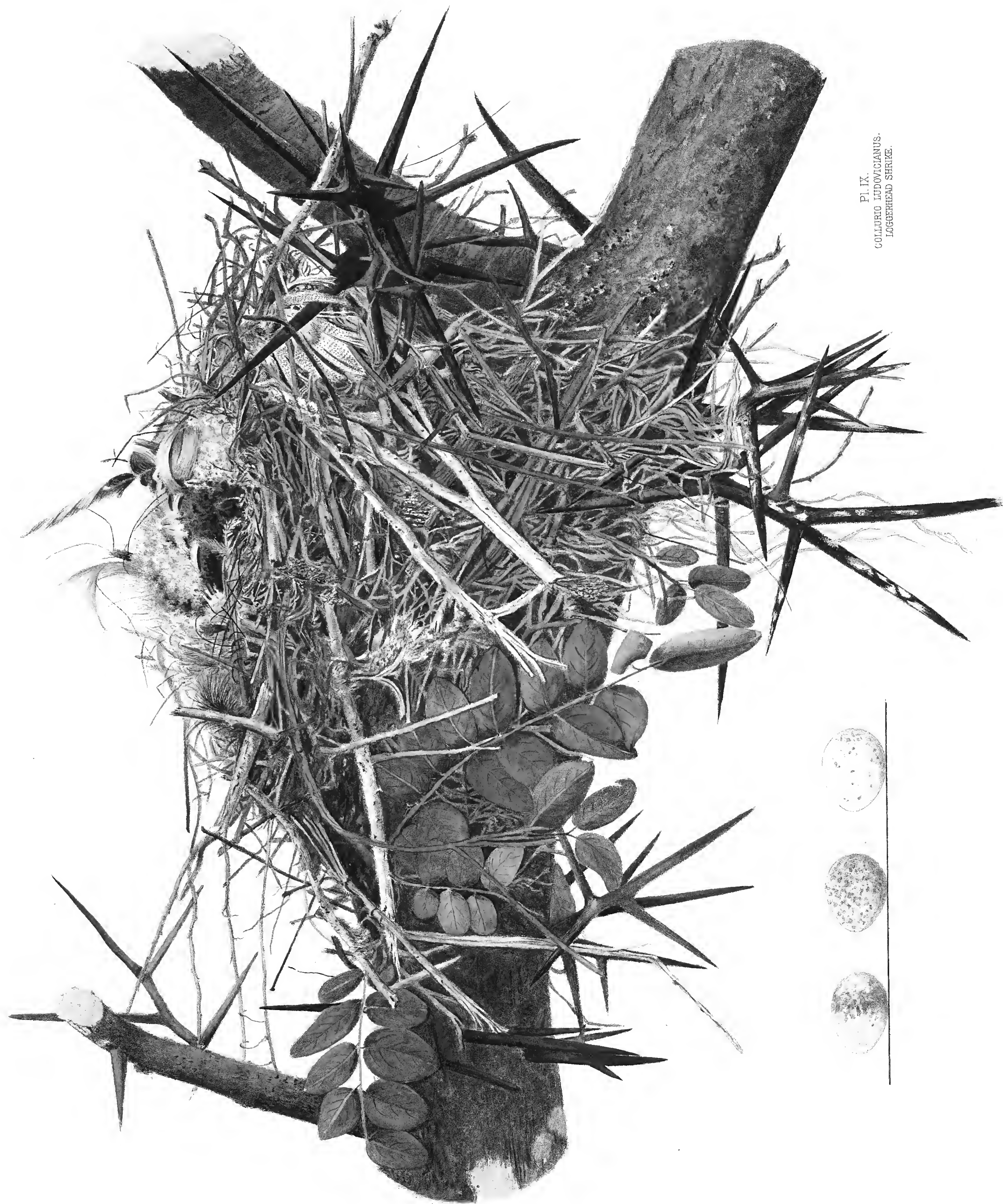
It may be stated as a rule, that this nest is the only one having a mud plaster and measuring from three and one-half to four and one-eighth inches in internal diameter, which contains a lining of bleached blades of grass. The nests of the Wood Thrush and Bronzed Grackle may be similar in every other particular. The egg can not always be distinguished from that of the Wood Thrush, without other data than size and color. The egg of the Catbird is greener, and the eggs of the Hermit Thrush and Wilson's Thrush are much smaller. Outside of the Thrush family there are no eggs that resemble the Robin's, without it is an unmarked egg of the Bronzed Grackle.

REMARKS:

The nest illustrated was taken on the 19th of May, 1879, from a small elm-tree growing in a field near a road. It represents the ordinary position, size, and materials of construction; the foundation contains but little material, this consists of weed-stems and mud; the superstructure is composed of finer weed-stems, fibres, grasses, a few chicken-feathers, and the usual plaster of mud; the lining is of blades of grass, which are very unevenly distributed.

After the Robin has safely reared her first brood, and freed herself from their care, about a week or ten days elapses before oviposition is again begun. If a new home is to be built, a limb upon the same tree that contained the former nest, or upon one in the near neighborhood, is selected for the site, and as much care and pains are taken in its construction as in the first one; but matters are frequently compromised by simply placing a new lining in the old structure. The mother-bird is, by close observers, said to build the nest unassisted by her mate. The male may now and then bring a stick or straw, but she does not permit him to take an active part either as architect or builder.

Great attachment is exhibited by the Robin to locality, of which many interesting stories might be related. The following incident, while illustrating this attachment to place, also shows to some degree that faculty which in birds is called instinct, but which, in a higher order of animals, is by courtesy termed reason. A Robin built her nest, the last week in March, upon a high shelf in one of the halls of a county fair-grounds; when discovered it contained two eggs. At this time there was snow upon the ground. The brood was raised in safety, and later a second nest was built in the fork of a maple-tree near by. The following year, being curious to know whether the Robins would again occupy the sheltered shelf for the early nest, and resort to the tree when this protection was no longer required, I made a visit to the hall about the first of April, and sure enough, there was a new nest filled with fresh eggs. This brood was reared without accident, and no sooner were the parents relieved of their offspring, than a second nest was placed in the same tree as that occupied the previous year. It is worthy of remark, that the nests built upon the shelf differed somewhat in their construction from those in the tree; the former contained paper, rags, and coarse wrapping-thread in abundance, making very bulky and untidy, but warm homes, while the latter were of the usual materials and quite neat in appearance.



PL. IX.
COLLURIO LUDOVICIANUS.
LOGGERHEAD SHRIKE.



PLATE IX.

COLLURIO LUDOVICIANUS—Loggerhead Shrike.

The Loggerhead Shrike is quite a common resident in Ohio, particularly in the central and southern portions of the state, and it is singular that it has so few acquaintances, as its habits are perhaps more interesting than those of any of our other birds. Twenty years ago it was scarce, if indeed a resident of the state at all; now it is to be found both winter and summer, though more abundant in the latter season. The birds which remain during the winter begin the construction of their nests exceedingly early—the 15th of April will find many of them setting upon a full complement of eggs—but the usual time for nesting is in June; a second brood is raised some weeks later.

LOCALITY:

The early nests are found in hedges, and scrubby little trees in cultivated fields; later, when the leaves are fully set, old orchard-trees standing in wheatfields, cornfields, or meadows, and thorn-trees growing along canals, small streams, or roads, are their favorite sites. The trees selected are generally at a distance from any dwelling—occasionally nests are built within twenty or thirty yards of a house, or even closer—woods are rarely if ever frequented.

POSITION:

The nest, when placed in a hedge, is supported by a number of small branches, and is within three or four feet of the ground; when built in an apple-tree or pear-tree, it is usually in a perpendicular fork near the top; when in a thorn-tree, it is either in the main fork, or on one of the lower limbs in a thicket of thorns and little branches, and on this account is very difficult to procure without tearing to pieces.

MATERIALS:

The materials of construction are quite constant in variety, though the relative proportions are variable. The foundations of twelve nests before me contain coarse weed-stems, blue-grass, timothy-heads, weed-fibres in long and short strips, chicken-feathers, thorns, and pieces of paper. The superstructures contain fine stems and fibres of weeds, rootlets, grasses, feathers, paper, wool, and silk from the milk-weed (*Asclepias cornuti*). The linings contain flaxen fibres, chicken-feathers, wool, silk of *A. cornuti*, and horse-hairs. An average nest is composed as follows: foundation, coarse weed-stems, a few long fibres, and a little blue-grass; the superstructure, finer weed-stalks, fibres, rootlets, grasses, and feathers, abounding in the order mentioned; the lining, long fibres, feathers, and a few horse-hairs. In all nests of this species the lining is quite thick, and the inside of the rim is compact and well formed, and often has long feathers from the back or breast of the chicken so adroitly woven into it as to completely conceal the eggs from view. The outside dimensions are variable, the early structures which are placed in hedges and in shrubs, are not so bulky and roughly made as the later ones built in more elevated positions in larger trees. The

average of a number of nests is as follows: outside diameter, six and three-fourths inches; inside diameter, three and three-eighths inches; outside depth, four and one-fourth inches; depth of cavity, two and three-eighths inches.

EGGS:

The full complement of eggs is six, and this number is usually deposited in every set. The shell is sometimes white, but generally it has a faint wash of dingy yellowish-brown, and is marked with irregular spots and blotches of darker shades of the same color, to which a few obscure purplish-brown spots may be added. The markings may be quite uniformly distributed, or most abundant about the crown, where occasionally they form a complete wreath the smaller end being almost or wholly immaculate, or they may be thickest at the point. Eggs of the same set vary but little in size and markings. In some sets the shell has a high polish, but commonly it is dull. All the eggs which I have taken from early nests—eggs laid by birds that have remained in the state during the winter—have had glossy shells, and have been longer and narrower than those collected later. Whether this is merely an accidental occurrence, or can be accounted for by climate, I am unable to say. The average of sixty specimens is .98 x .75; the largest, 1.04 x .82; the smallest, .90 x .70. They are deposited every day or alternate days, and incubated in about fourteen days.

DIFFERENTIAL POINTS:

As stated on page 52, there is often a great similarity between the nest of the Loggerhead Shrike and that of the Kingbird (*Tyrannus carolinensis*), but the former never contains the peculiar plaster described on page 51. The resemblance which the nests and eggs of *C. borealis* (Butcherbird) bears to this species, will be considered under *C. borealis*. Variety *excubitoroides* builds a nest and lays eggs in every particular like *C. ludovicianus*. The size, color, and markings of the eggs under consideration will distinguish them in nearly every other instance.

REMARKS:

The nest illustrated was taken on the 5th of June, 1879, from a thorn-tree standing on the bank of the Ohio canal; it is constructed like the average nest, and contained six eggs. The eggs illustrated are from three different sets; they represent the extremes and average, both in size and color. The old birds are much attached to place, and rarely go far away from the spot selected as their summer home; and in the winter time many still remain about their summer haunts, and are prepared by the first warm days of spring to again commence nesting. When the nest is robbed they immediately set to work to replace it, building in the same tree or in one near by. Notwithstanding this apparent attachment to place, they exhibit no such feeling in regard to their nest; they are easily driven from it while setting, and seldom make any attempt at defense, but will fly to some neighboring tree and silently see the eggs or even the young taken away without manifesting the least concern.

The food of the Loggerhead Shrike consists in winter principally of mice, while in summer they add to their bill of fare small birds and a large variety of insects. I have several times seen them capture mice, once when the ground was covered with snow. At another time I saw a sparrow fall a victim to this Hawk-like little bird. Frequently they impale their prey upon thorns; thus fastening a mouse or bird to the limb of a tree, they are better able to tear it to pieces. Without some such device, it would be very difficult to rend an old mouse into bits small enough to be eaten. When hunting for amusement, as they sometimes seem to do, a very convenient and safe cupboard for the over-supply of game is afforded by a thorn-tree, and it is not uncommon to find three or four mice impaled upon the thorns of some favorite tree.

Part 4

Price, \$5

ILLUSTRATIONS

OF THE

NESTS AND EGGS

OF THE

BIRDS OF OHIO

WITH TEXT

BY

GENEVIEVE E. JONES AND ELIZA J. SHULZE

CIRCLEVILLE, OHIO

1879

COPYRIGHTED BY GENEVIEVE E. JONES AND ELIZA J. SHULZE



APRIL
1880



Pl. X.
SAYORNIS FUSCUS.
PEWEE FLYCATCHER.

PLATE X.

SAYORNIS FUSCUS—Pewit Flycatcher.

The Pewit Flycatcher comes from the south about the first of April; occasionally a straggler is seen in February. After resting a few days from the fatigue of the long journey (during which time the female arrives), the male proclaims spring with his familiar *pe-wee pe-wee, phe-be phe-be*. In favorable seasons, nest-building commences early in May; two, and sometimes three, sets of eggs are hatched by the mother-bird, the tedium of the sitting being perhaps somewhat lightened by the cool, contented notes which her mate encouragingly utters from some favorite stand near-by, at short intervals throughout the summer days.

LOCALITY:

Rocky cliffs, walls of shallow caves, upturned roots, fallen trunks of trees, and similar places, about lakes, ponds, rivers, and small streams, were their primitive nesting localities. But so many desirable and safe situations have resulted from the necessities of civilization, that these birds have quite generally deserted their former sites, still retaining, however, to a great extent, their predilection for water and water-courses. The majority of nests are now built about spring-houses, water-mills, culverts, bridges, and trestle-works; some birds even venture into the large towns, and build upon the capitals of portico columns, and about old sheds. In the country, it is a very common occurrence for them to fasten their nests above the doors, about the porches, or under the caves of the houses.

The typical locality for the nest is a cranny, four or five feet above the water, in the shaly bank of a small creek—a damp, lonely spot, where the sun never shines, or, if at all, only for a few minutes in the morning or evening—a cranny grown about with moss, which is continually moistened and kept green by the drippings from little springs above, and where the rippling sounds of the water, as it hurries over its uneven bed, join in sweet harmony with the bird's pleasant but melancholy tones.

POSITION:

The nest is fastened to a flat surface, either horizontally or perpendicularly inclined, or is placed in the angle formed by two or three such planes. Its external form accordingly varies; at one time, it resembles an inverted bowl; at another, it is top-shaped, with a flattened side; and again, when in an angle, it receives the shape of that angle wherever it comes in contact with the planes which compose it. Its distance above the ground or water is usually between four and fifteen feet.

MATERIALS:

The prime material in the nest is mud; to this are added fine grasses, rootlets, finely split fibres, and small pieces of moss. The exterior is nicely decorated with green moss, amid which may be seen here and there the corrugated pellets of mud and pieces of vegetable material. In primeval days, the moss was probably used as a means of concealment; now, however, it rather adds to the conspicuousness of

most nests; still, the old habit is so powerful that nests are seldom built without it, though the quantity is often very limited. The cavity is thickly lined with fine fibres, slender grasses, dead moss, and horse-hairs, the circular arrangement of which, especially about the rim, forms a striking contrast to the jumbled appearance of the foundation and superstructure; occasionally, feathers, wool, and plant-down are used in the lining. The mud, besides giving form and solidity to the structure, is the stucco which holds it to its support. Some nests built upon horizontal surfaces in protected spots, have very little mud in their composition, and this is principally about the base. The diameter of the cavity at the rim averages about two and one-half inches; its depth, about one and one-half inches. The external dimensions of a nest built against a perpendicular wall are as follows: Distance across the widest part of the flattened side, five and one-quarter inches; distance from the rim to the lowest point, five and one-quarter inches. The diameter of the base of a nest taken from a shelving-rock is five and one-half inches; depth, four and one-half inches; width at top, three and three-fourths inches.

EGGS:

The complement of eggs is usually five. The shell is white, with a very faint creamy-tint; sometimes it is marked about the crown with a few reddish-brown specks or spots. I have several times found nests containing one or two such eggs, the remainder being normal. They average in size .74 x .57 of an inch; from this they rarely vary more than .05 of an inch.

DIFFERENTIAL POINTS:

The eggs can usually be identified by careful measurements and attention to the curve of the outline, together with the tint of the shell. The eggs of the White-bellied Swallow, Rough-winged Swallow, and the white eggs of the Indigobird resemble them somewhat. The nest cannot easily be mistaken for the work of any other bird.

REMARKS:

The nest represented by Plate X was built early in May, against an inch plank, used as a brace between the timbers of a wooden culvert, about four feet above the surface of the run. It contained five fresh eggs. The road passing over the bridge was much traveled, but the clatter of horses' hoofs and rattle of wagons, though loud and frightful to a person beneath, did not seem to annoy the birds, which, judging from the various marks of former nests, had occupied the place for a number of years.

Attachment to the nesting locality is more or less manifested by all our birds, but in none is it stronger than in the Pewee. Throughout their lives, if circumstances are favorable, the same pair will return every spring to their first nesting-spot, and sometimes even bring with them their offspring, to build in the immediate neighborhood of their birth-place. This habit endears them to the country people—in fact, to all who are acquainted with the bird—and “the nest on the porch pillar” is as studiously guarded as if an unfailing omen of good luck.

Semi-domestication is beginning to tell upon the nest of this species, as it has already done upon some others. Now and then, a structure is found in which no mud at all is used. I have seen one, taken from a beam of a shed, in which no earth was employed, for, not exposed to wind or rain, it was sufficiently strong without it. It is not impossible that, in time, the mud may be entirely discarded, and, instead of the clay-house, with its beautiful moss-covered walls, will be seen simply a nest of grasses and fibres in some well-protected place about the dwelling of man.



PL. XI.
THRYPHURUS LUDOVICIANUS.
GREAT CAROLINA WREN.

PLATE XI.

THRYOTHORUS LUDOVICIANUS—Great Carolina Wren.

The Carolina Wren is a very common resident, but perhaps more plentiful in summer than in winter. It is possessor of an exceedingly attractive voice, and being indefatigable in its efforts to be heard, is well known and much admired. "Its song is really a remarkable performance. Mounting to the end of a fence rail, top of a stump, or even to the topmost branch of a solitary tree, it pours forth a succession of notes more varied and nearly as loud as the Brown Thrush. This song is prolonged until he seems to have silenced all the less gifted songsters in the neighborhood; then, with a downward flight, he seeks the retirement of his favorite thicket and the company of his approving mate. Its ordinary call note or alarm is a loud *chirr-chirr*, sometimes loud and harsh, sometimes low and soft, often prolonged. . . . It has still another note, loud and emphatic, the most frequently heard of all, which an acquaintance renders, '*Jáeger chèats, Jáeger chèats, Jáeger chèats.*' These notes are heard both in winter and summer; the prolonged performance is heard only in spring and early summer." Nest-building may commence as early as the last of March, but usually not until April or May. Two, and sometimes three, broods are reared in the season.

LOCALITY:

Although this Wren appears shy and fond of secluded little nooks, it has so much curiosity, and such a manifest liking for the works and company of man, and the protection which his presence affords, that it is content to build beside the very door of his house if a foot of space is given up for its sole occupancy. Here the old bird may place her nest, courting shelter and imagining the seclusion in which she so much delights, cautiously slipping on and off, as if in great fear some one might suspect that a Wren has an aim in life. Accordingly, the majority of nests are built in the vicinity of towns and farm-houses, but the uninhabited woods are not entirely neglected. In thick timber-lands the birds are so wary, and the nests so difficult to find, that they may be more numerous than I imagine.

To name the various localities in which the nest has been placed, would fill a volume, and where it may yet be found would be equally laborious to determine; so the naming of a few of the ordinary situations must suffice. In the woods, the nest is found in old brush-piles, thick clumps of undergrowth, decayed logs and stumps, fence-corners, and similarly protected spots. In towns and about farm-houses, hay-mows, rafters, beams, window-sills, Martin-boxes, pump-spouts, pockets and sleeves of old coats hanging in any accessible place, jars, and tin-cans, are a few of the frequented sites.

POSITION.

The nest is, from the nature of the locality selected, usually supported by a flat surface from below; but when such a place as a coat-sleeve is chosen, it may then receive its sole support from the sides, the material being packed so tightly that there is no danger of its slipping down; when built in the bay in a mow or stack, a cavity is excavated to receive the materials, which are, in this case, held upon all

sides; when in undergrowth, it is either upon the ground or a few inches above it, surrounded by interlacing stems.

MATERIALS:

The materials used in construction are as varied as the localities. Three nests, representing the usual materials employed in the woods, in the farm-yard, and in the city, are composed as follows: No. 1. Built in a brush-pile in the woods: foundation and superstructure, fine fibrous roots and blades of grass, dried leaves, grapevine-bark, moss, a few sticks, and weed-stems; lining, fine vegetable material and horse-hairs; diameter of the entrance to the cavity, one and seven-eighths inches; depth, four inches; diameter within, three inches. No. 2. Built in the feed-trough of an unoccupied stable-stall: foundation and superstructure, dried oak and hickory leaves, some perfectly skeletonized, red clover, grasses, bits of moss, rootlets, feathers from the poultry-yard, and pieces of cast-off snake-skin about the rim; lining, red and white cow-hairs, horse-hairs, feathers, and scraps of snake-skin; diameter of the entrance of the cavity, one and three-fourths inches; diameter within, nearly three inches. No. 3. In a paper-collar box nailed against the supporting column of a portico in this city: foundation and superstructure, dried leaves, rootlets, strings, hempen fibres, weed-stems, blades of grass, fine vegetable material decomposed beyond recognition, and small pieces of mosquito-bar; lining, fine blades of grass, rootlets, and soft paper; diameter of the entrance to the cavity, one and one-half inches, increasing to three inches within; depth, three and three-fourths inches.

The nest is exceedingly variable in external dimensions. At one time it may fill a peck measure; at another, it may be contained in a quart cup. The shape, being greatly dependent upon position, is no more constant than the size. The passage to the interior may be a mere opening above or at the side, or it may be even a circuitous channel with the opening from below. But whatever the measurements of the exterior, or wherever the door-way, the spherical cavity within is quite uniform.

EGGS:

The complement of eggs is generally six, but as many as nine or as few as three may constitute a set. The ground-color of the shell is pure white; the markings consist of blotches, spots, and minute dots of reddish-brown; they are distributed over the whole egg, but thickest about the base, sometimes forming a wreath. The deep shell-markings are obscure-purplish, the shade of which is determined by their depth beneath the surface. Some eggs are marked only by a few large blotches of bright reddish-brown about the crown; others are spotted finely and closely over the entire shell, but are not so dark as those of the House Wren; again, others are marked with irregular little lines and fine specks, the lines resemble very much the threads in bank-note paper, but are not so long. The average size of thirty eggs, from six sets, is .73 x .59; the largest, .76 x .60; the smallest, .69 x .57.

DIFFERENTIAL POINTS:

There are a number of other species which lay eggs so similar in size and markings to the Carolina Wren's, that it is impossible to give points of difference which will always be correct. By referring to the tables at the last of the work, some information will be found which may aid in identifying unknown or doubtful specimens. The nest and eggs together are characteristic. The nest alone resembles the House Wren's, the cavity however averages larger.

REMARKS:

The nest from which the drawing was made was found on the 19th of May, 1879; it contained six eggs nearly hatched. It was built in a box nailed against the inside of an old barn, and used only a

short time before as a hen's nest. When taken possession of by the Wren, the box was nearly full of straw and grass. In this, near one corner, a cavity was made to receive the nest. The illustration shows the nest as it was lifted from the cavity, some of the grasses still hanging to it. The materials used in its construction are like those in No. 2, even to the pieces of snake-skin. The eggs figured are of the usual sizes and markings. The mother-bird was at home when the nest was discovered, and was with difficulty persuaded to abandon it. She scolded and hopped about, all the while jerking her tail by way of emphasis in a Wren-like manner. Her mate showed his interest in the proceedings by uttering a few squeaking sounds, and then flying off to a neighboring tree, where he commenced his rollicking song.

The persistency of this bird is sometimes remarkable. They have been known to rebuild a nest eight or ten times before abandoning the chosen locality. A few years ago a pair commenced nesting in the wooden spout of a pump, and, as the pump was in daily use, the selection proved not a happy one. No sooner would the birds fill up the spout than it would be torn away. In an hour they would collect rubbish enough to again effectually prevent the flow of water. For two days they persisted in their work, but finally, in apparently good humor, gave it up, and selected a box put up for their use.

A nest placed upon a window-sill of a country house, between the shutter and the sash, had a beautiful domed-roof, and a walk the width of the sill and sixteen inches long, leading to the door-way, composed of fine rootlets and grass. This nest was torn down by the house-wife, but the next afternoon a similar structure met her eyes. This was permitted to remain until six eggs were deposited; it was then added to my collection. In a few days another, but more elaborate nest, was constructed. Much pleased with the plucky little architects, their last effort was left undisturbed, and a family of six Wrens was raised, to the amusement of the household, who watched their queer movements through the window-panes.

In Ross county, a pair of Wrens occupied for a number of years the pocket of a cast-off coat hanging in a wood-shed. Every season the pocket was emptied of the old nest to save the birds the trouble. In making their daily rounds, they always passed in and out the shed through a knot-hole or chink between the boards, even when the door and windows were open, a habit very characteristic of the bird. This attachment to place is however not always so strongly manifested. It is not uncommon for a pair to return year after year to the same neighborhood, but as a rule they build in a different site each summer.

J. M. Wheaton, M. D., to whose work on Ohio birds I am indebted for the quotation at the beginning of this article, is of opinion that the Carolina Wren has been increasing in numbers in the city of Columbus and vicinity, in late years. A similar statement will apply to nearly all the towns in central and southern Ohio. The following interesting observations are quoted from the same author:

"The Carolina Wren frequently climbs trees. On the first occasion that I noticed this habit, a pair of them ascended the trunk of a large oak tree for more than fifty feet. They accomplished this exactly in the manner of the creeper, now moving up and now circling around, only stopping a moment, now and then, to peer and pick in the crevices of the bark, and at short intervals uttering a single note like that of the Nuthatch, but lower and softer. I have several times witnessed the same actions.

"There is a marked variation in color among these birds. Some have the brown of upper parts decidedly suffused with ashy, the under parts whitish or ashy without a trace of tawny on breast or abdomen; others have the upper parts rich dark red-brown, with hardly a trace of ashy even on the head, while the under parts are bright uniform ferruginous. Between these extremes every intermediate phase may be found. These differences are not distinctive of age, sex, or season. I have found both forms in the same brood of young before they were fully fledged, the contrast being as decided as in young birds of the Gray and Red varieties of the Mottled Owl."



PL XII.
SIALIA SIALIS.
EASTERN BLUEBIRD.

PLATE XII.

SIALIA SIALIS—Eastern Bluebird.

Bluebirds remain in the state in small numbers throughout the winter, and whenever a bright day occurs they warble their plaintive call-notes, so suggestive of "sunshine and pleasure." Even those that seek winter-residences in a milder climate, seemingly ever-mindful of the golden days of their native country, often return prematurely to their former homes, and as early as January or February, while nature is yet ice-bound and cheerless, these hardy little migrants may be seen patiently awaiting the coming spring.

Although they may pair in February or March, and even choose the locality for the nest, oviposition does not generally take place before the last of April or the first of May. Two broods, and sometimes three, are raised in one summer.

LOCALITY:

The nest is universally placed in a cavity; usually in a tree or stump standing alone in a meadow or cultivated field, in a detached clump, or in a piece of sparsedly timbered land. Trees in the interior of thick woods are seldom selected. Old orchard-trees, on account of their numerous decayed trunks and limbs; deserted Woodpecker-holes, wherever they may be; bird-boxes, when suitably situated; and the various crevices about city and country dwellings, are favorite sites for building.

POSITION:

The nest, which sometimes is hardly worthy of the name, is ordinarily supported by the floor, and shaped at the sides by the walls of the cavity; but when the excavation is large, like the interior of a stump, with only a small entrance, it may rest simply in a slight hollow wallowed-out by the bird in the soft debris of decayed wood. Its distance from the ground is usually between five and ten feet. I have, however, known it to be a few inches below the surface, in a small stump; and again, in an unoccupied Flicker's nest, near the top of a large sycamore.

MATERIALS:

The materials in all the nests which I have examined were blades of grass, timothy-stalks, short pieces of stubble, and fine weed-stems combined in various proportions, the grasses generally forming the bulk of the structures. Sometimes feathers from the poultry-yard, wool, pieces of string, and like substances are used as a lining. The quantity of material is not great—just enough is employed to make a soft and slightly concave resting-place for the eggs. When the same cavity is occupied for a number of years, as is frequently the case, the nests may accumulate to the depth of six or eight inches; and, as the addition of each year is lighter in shade than that of the previous one, the number of separate structures may be easily counted. The old nest, however, is, as a rule, torn to pieces and carried away.

EGGS:

The number of eggs in a full set is from four to six. The shell is delicate blue, varying slightly in shade in different specimens, and is moderately polished. When blown, the color becomes purer in tone than before, and the whole shell assumes a beautiful semi-transparency which disappears in a day or two, about the same time, the blue begins to fade, and in a few years the specimen becomes nearly white. Occasionally, pure white eggs are found. The average size is .84 x .64 of an inch. The longest egg in my possession is .87; the shortest, .80. The greatest short diameter is .67; the least is .61. Incubation lasts about twelve days.

DIFFERENTIAL POINTS:

When the eggs are tinted with blue, they may be recognized at once, as there are no others at all like them. The nest, when normal, may also be recognized by the description; but if it departs from the common type—which it sometimes does, in cities or about dwellings—no rule can be given for its identification.

REMARKS:

The nest represented by the plate was found the first of April. It was built in an old black-walnut stump, in a wheatfield. The part containing the nest was sawed-off below, and split-open so as to give a clear side view of the structure, which was composed of blades of grass, and contained five eggs. The entrance to the cavity was from above, and was distant from the ground about two feet.

The habits of the Bluebird have been so often and so accurately described, and are so familiar to all that it is unnecessary to go into detail here. But there is a point in the life-history of the bird I wish especially to mention. It is their great pugnacity and bravery. I have repeatedly known them to attempt to drive other birds from their homes, and generally the attempt is successful. The Red-headed Woodpecker is a frequent victim to this scheme. Having labored hard to excavate a suitable habitation, and about ready to begin the cares of housekeeping, they are often set upon by a pair of Bluebirds, and so persistent is the attack that the Woodpeckers, perhaps afraid more blood will be spilled upon their already scarlet heads, disgracefully retreat. The Martin and Wren are likewise tormented, but as often recompense them with similar proceedings.

Some years ago, I placed a bird-box upon the house-top, which for a few seasons was occupied by a pair of Bluebirds. One spring they failed to appear at the usual time, and the box was taken by a pair of Martins. The old nest was carried out, and the new-comers were thoroughly settled in their quarters, when the Bluebirds returned (probably the same pair that formerly occupied the box), and at once commenced tearing out the intruders' nest. But they were soon discovered, and a pitched battle ensued, the Bluebirds retiring as if defeated. This procedure was repeated several mornings and at intervals during the days. When, early one morning, being awakened by the incessant screams of the Martins, I hastened to the yard to see what I supposed was the final encounter; but the affray was over before I arrived. My father, however, was there, holding a female Martin in his hand, he having witnessed the whole affair. After much scolding and sparring, one of the Bluebirds clinched with the Martin, and both rolled together from the house-top to the pavement below, where, in deadly embrace, they were captured; but the Bluebird, still strong and active, slipped away. In all these engagements, the male Martin seemed content to encourage his mate by his vociferous screams, while both Bluebirds fought with equal valor. If the female Martin had received the substantial support she deserved from her genteel spouse, the result of the engagement might have been more satisfactory to her, and much more creditable to her companion.

Part 5

Price, \$5

ILLUSTRATIONS

OF THE

NESTS AND EGGS

OF THE

BIRDS OF OHIO

WITH TEXT

BY

GENEVIEVE E. JONES AND ELIZA J. SHULZE

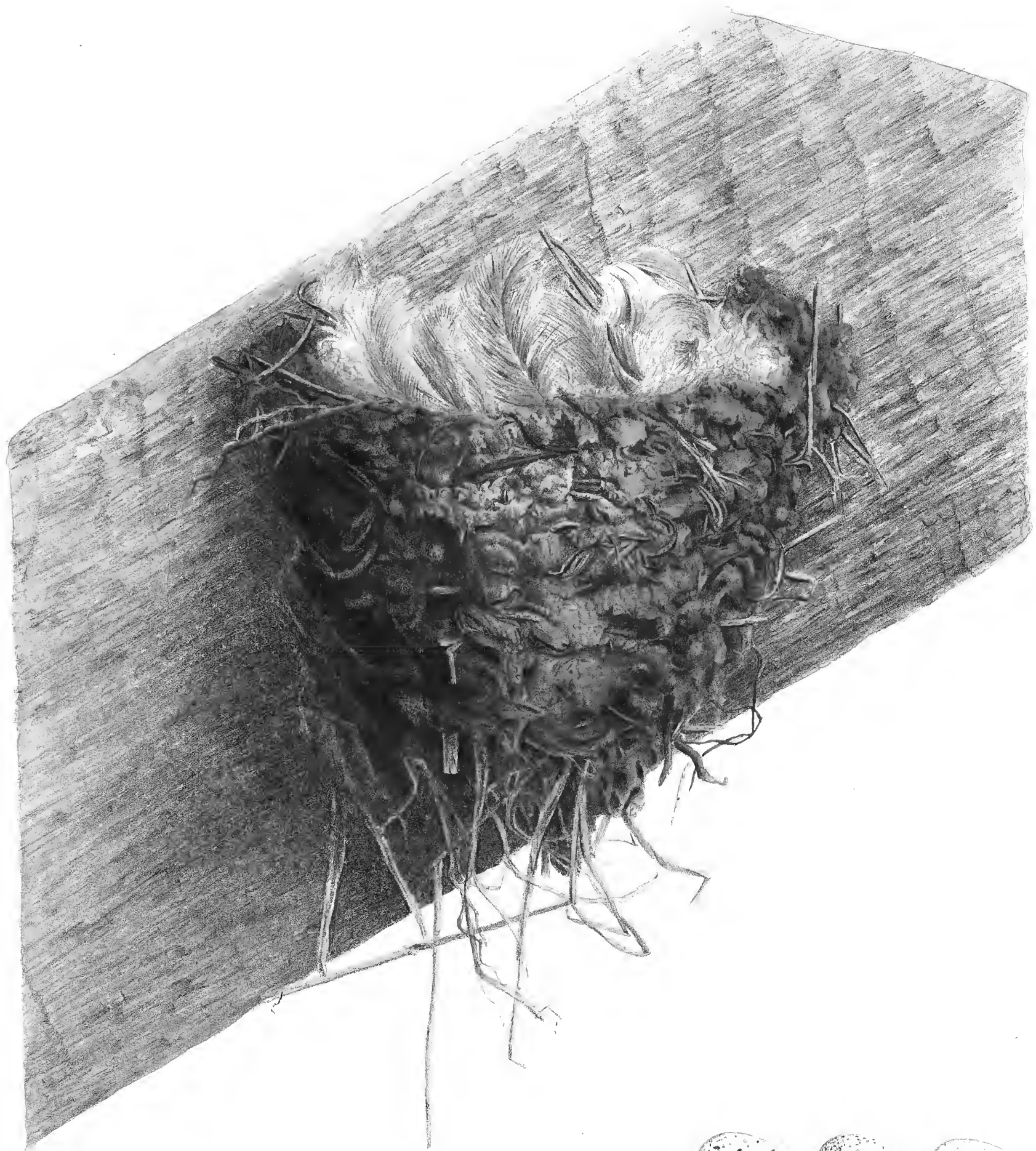
CIRCLEVILLE, OHIO

1879

COPYRIGHTED BY GENEVIEVE E. JONES AND ELIZA J. SHULZE

JULY

1880



Pl. XIII.
HIRUNDO ERYTHROGASTER, Bodd.
BARN SWALLOW.



PLATE XIII.

HIRUNDO ERYTHROGASTER—Barn Swallow.

Six species of the Swallow family are summer residents in Ohio. Of these the Barn Swallow is the most abundant and best known. About the twentieth of April they arrive from the south, and if the weather is favorable nest-building may begin at once. This year (1880), on the tenth of May, I discovered a nest with the full complement of eggs; but usually the majority do not begin nidification before the third week in May. Two broods are generally hatched during the season.

LOCALITY:

The effect of civilization upon the nesting locality of this Swallow is very marked. Formerly (and indeed at the present day in the wild West), the nest was placed against the side of a rocky cliff, the wall of a eave, or such other surface as would support it; but now these natural sites are entirely abandoned for the safer, more convenient and comfortable ones afforded by barns, sheds, bridges, and the various buildings incident to the town and farm. In the country a large barn is the favorite building-place. A colony composed of four or five, or even forty or fifty pairs, may occupy the loft, where they stick their mud-houses about the beams and rafters, and seem to take great delight and satisfaction in the thought that they are so well protected from the inclemency of the weather and the direct rays of the summer sun. But to the farmers they are a great annoyance, a class of persons who have long considered them a pediculous nuisance.

POSITION:

The nest is generally fastened to a perpendicular surface by the mud of which it is composed, occasionally it is placed upon the upper side of a beam. When built against the rafter of a loft it is quite close to the shingles, often there is just room enough between the rim of the nest and the roof for the bird to go in and out. When attached to a beam, side of a building, or the pier of a bridge, it is generally some feet from the covering above.

MATERIALS:

The principal material of the nest, and the one which gives to it solidity and means of support, is mud. This the birds collect from the bank of some neighboring pool, or from a mud-hole in the barn-yard or road, and carry in their mouths to the selected site. Here they stick a few pellets of the clay-mud to form the lowest point of the nest. They then begin at the sides and build upon this toward the center, adding layer upon layer of pellets, increasing with each one the size of the curve, until the cavity thus formed is sufficiently deep and wide. Bits of grass and fibrous material, and often horse-hairs, are at intervals worked into the mud to give strength. When dry the structure becomes quite firm, but its strength of course depends largely upon the quality of clay and the quantity of straw used. The cavity is lined first with fine grasses, rootlets, and horse-hairs, in varying proportions,

and then with soft feathers from the poultry-yard, some of which usually project above the rim of the nest.

The late Dr. T. M. Brewer, in "Birds of North America," mentions as an occasional peculiarity of this nest, a platform built above the cavity, which serves as a resting-place for the parents. This addition to the ordinary method of construction I have, however, never seen. The diameter of the average nest at the widest part is about five and one-half inches. The distance from the rim to the lowest part is about four and three-quarters inches. The diameter of the cavity about two and three-quarters inches. The depth of cavity about one inch. A very deep nest in my possession measures six and one-half inches from the rim to the lowest point; another is barely two and one-half inches between the same points, but is seven inches in diameter across the rim longitudinally, and four inches transversely. A nest taken from the upper surface of a beam approaches in outline a section of a cylinder. Its diameter is five and one-half inches; its height two inches. The cavity is two and one-half inches wide and one inch deep.

EGGS:

The complement of eggs is from four to six, usually five. They are deposited daily or at intervals of two or three days. Thirty-eight specimens average .75 x .55 of an inch. The longest specimen is .89; the shortest, .69; the broadest, .57; the narrowest, .52; the smallest egg is .69 x .53; the largest .88 x .57. The ground color of the shell is generally pure white; some sets have a dirty yellowish tint. The most common markings consist of small spots and minute dots of slightly reddish-brown, distributed over the entire shell, sometimes thickly, sometimes sparingly, but nearly always most abundant about the base. The deep shell-markings have the usual bluish tint. The eggs, however, are by no means confined to these markings. Of the specimens before me, two are plain white; one has simply a large blotch of brown at the crown; twenty-three are as described above, and the remaining twelve are variously marked with large irregular blotches and spots of brown, varying in shade from deep red-brown, so heavy as to appear almost black, to yellowish-brown of very light shade. These marks, which are confined to the long pointed eggs, are in a few instances distributed regularly over the whole shell, while in others they are very irregular or confined principally to the base.

DIFFERENTIAL POINTS:

The typical nest can not be mistaken, so characteristic is it of the bird. Even in anomalous forms little difficulty will be experienced. The eggs, however, are not so easily recognized. They differ so in size and markings, that with extremes identification is uncertain if not impossible. The average specimens resemble closely some eggs of the Cliff Swallow. For detailed differences, see *P. lunifrons*.

REMARKS:

The illustration represents the average size and usual form of construction of the nest. It was built the third week in May, 1878, against a rafter in an old scale-house. The eggs figured show the average and two extremes in size and markings most commonly met with.

Two anomalous nests, one from the upper surface of a beam, and the other from a rafter, are composed as follows: the first is very flat, the rim is only two inches from the surface of the beam; the size of the cavity is normal; very little mud is used, the majority of the structure being composed of straw and grass. The bird certainly appreciated the fact that mud was not necessary in the construction of a nest in such a position. The second is normal as regards shape and size, but instead of the usual straws and grass mixed with the mud, are horse-hairs; so abundant are they, and so well incorporated with the clay, that the greatest possible strength is secured.



PL. XIV.
COCCYZUS AMERICANUS.
YELLOW-BILLED CUCKOO.

PLATE XIV.

COCYZUS AMERICANUS—Yellow-billed Cuckoo.

The Rain Crow, or Rain Dove, as this species is often called, makes its appearance in Southern Ohio about the first of May. Nest-building begins a few weeks later, and is usually completed by the second week in June; occasionally, however, fresh eggs may be found in July. Seldom more than one brood is hatched.

LOCALITY:

Wherever woods and undergrowth abound, the Yellow-billed Cuckoo may be seen in the nesting season. Timbered ravines and valleys, thickly interspersed with the haw, pawpaw, dogwood and such other low trees as a damp shaded soil produces, where the wild grape, wild cucumber and columbine grow in luxuriance, are the most frequented resorts. In such a thicket the nest may be built in any clump of foliage that offers sufficient support. In more open woods the thorn and the black-haw are favorite trees. Occasionally an isolated tree is selected as the building site, and sometimes the bird even deserts the country for the town, where it nests among the branches of the street or lawn trees, or in the shrubbery of the garden-plot.

POSITION:

The nest may be placed either in a horizontal or perpendicular fork, or upon a number of interwoven branches or stems. Sometimes it is built upon a limb of considerable size, and held firmly in position by small branches, twigs, or vine-stems and tendrils about the sides. There is, however, no characteristic position. Its usual distance from the ground is between five and ten feet, but sometimes it is near the top of a vine-climbed oak or other forest tree. Nests of very low position are generally located in the main forks of stunted elms.

MATERIALS:

Slender dried sticks, sometimes twelve or fifteen inches long, but usually much shorter, and catkins, compose the bulk of the nest. The catkins are generally reserved for the lining, but occasionally they are mixed in with the sticks of the foundation. The lining, so far as I am aware, always consists of aments from the oak or some neighboring tree, or blossoms from the wild grape. The structure, when perfect, is little more than a rough platform, loosely woven, slightly concave, and lined just sufficiently to make an even resting-place for the eggs. Anomalous forms are now and then met with, but as a rule, the materials of construction are quite constant. The diameter is difficult to measure, owing to the irregularity of outline. A circle with a radius of two inches will generally rest upon the top without projecting over the sides. The depth depends largely upon position; when in a perpendicular fork, it may be three to five inches through the center; when upon a horizontal branch, it may measure as little as one inch through the same point.

EGGS:

The number of eggs laid during the season seems to vary considerably. If the mother bird begins incubation as soon as the first egg is deposited, as many as six or eight may be dropped during the sitting, at intervals of two to five days. In which instance young birds of different ages, and fresh and partly incubated eggs, to the number of eight, may be in one nest. But when incubation does not begin until the complement is completed, as is commonly the case, four eggs, rarely six, make up the set.

The color of the eggs when recently blown is light bluish-green, varying a little in shade in different specimens. The shell, which is never glossy, is sometimes mottled with darker shades of the same color, or mottled or specked with white. The size and shape is by no means constant, even of eggs from the same set; some are elliptical, others are quite pointed at one end, and still others are irregular in outline. The average size of twenty-eight specimens is 1.27 x .89. The smallest, 1.13 x .85; the largest, 1.33 x .97.

DIFFERENTIAL POINTS:

See page 45.

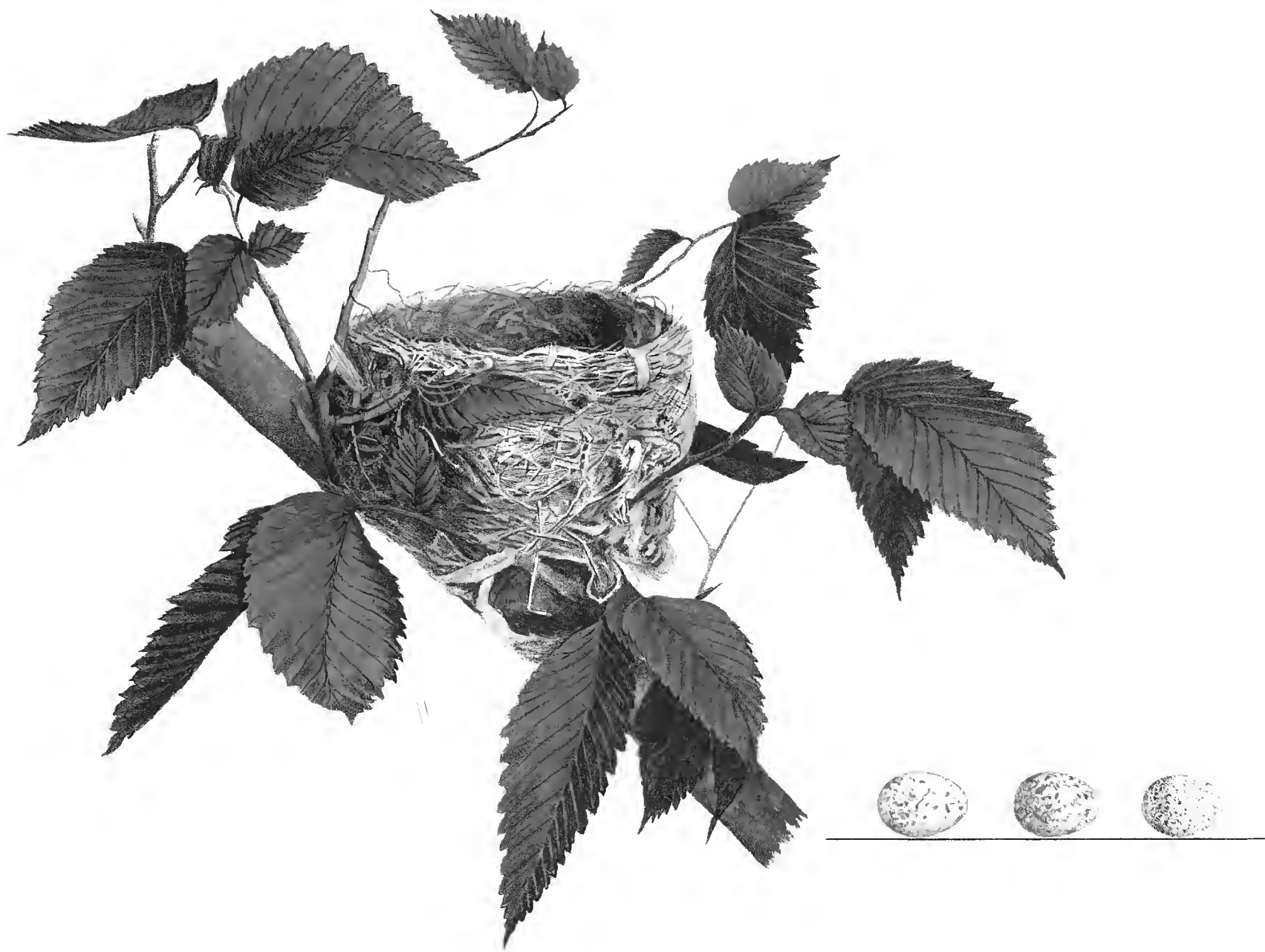
REMARKS:

The nest illustrated was taken on the twenty-eighth day of May, 1878, from a black-haw. The branches upon which the nest rested were inclined at an angle of 45°. The plate shows the branches in a perpendicular position, the nest being thus inclined sufficiently to give a view of the upper surface.

The materials of construction are sticks and catkins of the oak. The dried leaves belong to the dead branch which is lodged in the fork. In six days after its completion four eggs had been deposited, and incubation had commenced. The eggs figured show the common shapes, shades of color, and irregularities of outline. They are colored from freshly blown specimens.

The habits of our two Cuckoos are so similar as regards locality, position, and materials for nest-building, and even the eggs are often so much alike, that it may be of value to some to mention a peculiarity of plumage which will always determine the species if any doubt exists. In collecting, it is not always possible to examine closely the bird when the nest has been found. She may, if upon the nest, sit closely any desired length of time, and permit a thorough inspection at a reasonable distance; but usually, just as careful notes of bill, eye, and general plumage are being made, the bird silently glides, almost drops, from the nest into the thicket, and either patient waiting must be endured or another visit made, for it is almost impossible to procure a view of her after she has gained the foliage. But the trouble of waiting, or another visit, will not be necessary if attention is given to the marking of the tail-feathers as the bird flushes from the eggs. If large blotches of white are seen, it is *C. americanus*. If no white appears, or only a very little about the tips of the feathers, it is *C. erythrophthalmus*. So conspicuous are these white spots on the tail-feathers of the former, that they may always be seen if looked for, though the bird is visible but for an instant, and that in the densest cover. As a rule, the best way to identify the species when found sitting, is to frighten the bird from the nest and observe the tail-feathers as she flies away.

The character of the Yellow-billed Cuckoo is not above suspicion. In fact it was long ago convicted of theft and murder, though perhaps not quite so blood-thirsty as the Blue Jay. The female has, to some extent the indolent habit of the Cow Bunting and European Cuckoo. I once found an egg in the nest of the Cardinal Grosbeak, and once in a Catbird's nest; the latter may possibly have been the property of the Black-billed, but about the former there was no doubt.



Pl. XV.
DENDROCA ÆSTIVA.
SUMMER WARBLER.

Part 6

ILLUSTRATIONS

OF THE

NESTS AND EGGS

OF THE

BIRDS OF OHIO

WITH TEXT

1060
CINCINNATI

CIRCLEVILLE, OHIO

COPYRIGHTED BY GENEVIEVE E. JONES AND ELIZA J. SHULZE

OCTOBER

1880

PLATE XV.

DENDRÆCA ÆSTIVA—Summer Warbler.

The subject of this sketch is the most abundant of all our resident warblers, and except the Yellow-breasted Chat there is no other of the family whose nest is so easily found.

About the fifteenth of April they arrive in Central Ohio, and by the twentieth of May nidification is with the majority completed, and with many incubation has commenced. In July a second brood is sometimes reared, and later perhaps even a third.

LOCALITY:

In the country the nest is usually placed in the trees and bushes which grow along roads, fences, levees, banks of streams, and similar places. The young trees, especially elms, which grow in narrow belts along ponds and creeks, or scattered sparingly near by some water-course, seem to be preferred above others; but the driest districts are by no means deserted. In towns, the horse-chestnut, elm, maple, and other shade trees, and the shrubbery of the lawn or garden are the most frequented localities.

POSITION:

The nest is saddled upon a branch inclined at an angle of about 45°, and is supported by small branches about the circumference; or is placed in a fork, either perpendicular or horizontal; or is built among a number of small stems growing so closely together as to form a suitable resting-place. The first position is by far the commonest, and the last the rarest. Its distance from the ground is ordinarily between ten and fifteen feet, but occasionally it is in the top branch of a medium-sized tree. When situated in a bush it is sometimes within a foot of the ground. Along the west shore of Seneca Lake, New York, near Geneva, the Yellow Warbler is the most abundant of any of the summer birds. In the years 1871-75 I found them nesting plentifully in the shrubbery growing within a few feet of the water, at the foot of the steep bank which forms the shore. Of the dozens of nests observed in this neighborhood, certainly more than half were placed in low bushes; but in this State by far the greater number are built in young trees.

MATERIALS:

The outside of the nest is generally composed of silver-gray weed-fibres, varying in breadth from the thickness of a hair to three-sixteenths of an inch. They are arranged loosely in some specimens, hanging an inch or two below the bottom; in others they are drawn tightly, being almost felted together. In place of fibres, wool, cotton, and finely split grasses are frequently used. But whatever composes the exterior, there is almost invariably beneath it a layer of fine round or split grasses of a yellowish or reddish-brown hue, which extends to the rim, where it is woven in with the materials of the outside. Upon this layer of grass is placed the lining; it usually consists of plant-down, over which a few horse-hairs or pieces of roller-grass are placed, as if to keep it in position. Sometimes the down is dun-colored,

sometimes white, but most frequently it has the faint yellow hue common to the silk of the willow blossom. The down may cover the entire cavity, and be an eighth of an inch or more in thickness; or there may be but very little and that at the bottom, or irregularly distributed and mixed with pieces of broken and split grasses and horse-hairs. When the outside is composed of wool or cotton, the lining is generally of the same material. In towns, various substances besides those mentioned may enter into the structure; such as strings, worsted, ravelings, paper, cloth, and rarely feathers. As a rule, however, there is great uniformity in the materials of the nest. The average dimensions of twenty nests are as follows: Outside diameter 2.75; outside depth 2.50; diameter of cavity 1.60; depth of cavity 1.30 inches. The outside may be an inch or more larger than the measurements given, but the inside dimensions are quite constant, especially the diameter of cavity.

EGGS:

The number of eggs in a full set varies from three to six; the usual number is five. The ground-color of the shell is commonly white, but it may be faintly tinted with blue, green, yellow, or gray. The markings consist of blotches, spots, and specks, rarely lines, of yellowish or reddish-brown of different shades confined chiefly about the base, where they generally form a ring, and are often confluent; elsewhere they are unequally distributed, but never so thickly as to obscure the ground-color. The deep shell-markings appear purplish or bluish. Plain eggs are occasionally found, and also specimens having the markings all beneath the surface of the shell. The average size is about .66 x .51; extremes .55 x .48 and .75 x .57.

DIFFERENTIAL POINTS:

See table.

REMARKS:

The nest illustrated was taken from a small elm on the bank of the Scioto River, the last week in May, 1878. It represents the position, materials, and size most frequently seen. The eggs show the usual sizes, colors of ground, and markings.

To me the nest of the Summer Warbler has always been a subject of admiration. It is the representative of strength, comfort, beauty, every thing necessary for a cozy summer home; so compact is it, that it may be seen firmly attached to its supports after the frosts and winds of fall have stripped the foliage from the trees, and even the rains, snows, and gales of severe winter often fail to dislodge it. The bird, too, with its yellow coat and piping notes, is one of the most pleasing of our fauna. Though exceedingly friendly and familiar, they are very watchful and solicitous, and seldom go far from home during the nesting-season. When robbed by man they exhibit much feeling, and scold incessantly the thief they are too tiny to attack. On account of the imposition so persistently practiced upon the Summer Warbler by the Cowbird, they have always drawn largely upon my sympathy. Rarely, if ever, have I found a nest that did not contain one or more of the eggs of this parasite. Too weak to roll out the homely speckled egg, and too tidy to break it, it must either be hatched or the nest abandoned. If the Warbler has already deposited her own eggs, she generally accepts the situation, otherwise she frequently builds again, either over the first nest or in a new position near by; but even this extra labor is by no means an escape from the evil. In 1878 I found a structure in a bush, composed of two complete nests, one above the other; the two were forcibly separated, and in the cavity of the first lay a Cowbird's egg. Another, found in 1876, was made up of three perfect nests, built one above the other; the upper one contained five Warbler's eggs and two Bunting's; the second and first each one Bunting's egg. So, notwithstanding the planning and work of the Yellow-bird, she had at last to consent to hatch and rear two ugly chicks or desert her own offspring.



Pl. XVI.
SPIZELLA PUSILLA.
FIELD SPARROW

PLATE XVI.

SPIZELLA PUSILLA—Field Sparrow.

The Field Sparrow arrives from the South about the last of March. As soon as warm weather fairly commences they begin the duties of home and housekeeping, usually rearing two and often three broods. In October the majority depart for a more congenial latitude. Some remain until November, and perhaps a few may even endure our winter, as Mr. F. W. Langdon reports a specimen taken the fifteenth of December, 1879, near Madisonville.

LOCALITY:

Contrary to what the name indicates, this species frequents during the nesting season upland woods. The nest either is placed in the bushes, or upon the ground in a tussock or at the root of a bush in a thicket; occasionally they build in the briers along the roadside, or upon the ground in a pasture; but nearly always the birds confine themselves to the outskirts of woods with thick undergrowth of hazel, wild roses, briers, and other shrubs common to the State, and seldom go more than a few hundred yards in the interior.

POSITION:

The nests seem to be about equally divided between the ground and the bushes. When in the former position, a little depression is chosen, and the structure is neatly fitted into it with the rim about level with the surrounding earth. When in the latter position, it is placed in any arrangement of twigs that will support it; it is not built about and cabled to them as is the nest of the Summer Warbler, but it is simply loosely arranged upon the stems, or wedged in among them so that it will not topple over, and nearly always it can be lifted out without tearing it in the least. It is seldom if ever over five feet from the ground, and commonly is within two or three.

MATERIALS:

The foundation of the nest consists of weed-stems from a twentieth to a twelfth of an inch in diameter, to which is frequently added blue-grass, roller-grass, fine fibres or rootlets. The superstructure is composed of a few fine weed-stalks, split grasses, roller-grass, and fine rootlets or tendrils. The lining is nearly always of black horse-hair, neatly and often quite thickly coiled against the superstructure. Thirteen nests before me are all lined with black horse-hair except two; in one of these the hair is white, the other is lined with split grasses. Some nests are lined with grasses and hair combined, and occasionally cow-hair is used. The materials and general appearance of the nest, whether placed upon the ground or in a bush, are quite uniform. The arrangement of the exterior is always loose; one side of the foundation near the rim usually contains more weed-stems than the other; this gives an easy, often careless air to the structure. The external diameter varies from three to four inches; the average is about three and one-half inches. The depth is between two, and three and one-fourth inches; average

between two and two and one-half inches. The diameter of the cavity varies from one and seven-eighths to two and one-half inches; average about two inches. The depth of cavity averages about one and one-half inches.

EGGS:

The eggs of a full set are four in number, sometimes three or five. The second and third sets, as with most birds, contain one or two less than the full complement. The ground color is faint greenish-blue, or almost pure white; of dozens of sets observed only one white one occurred. The markings consist of blotches, dots, and very fine specks of light reddish or yellowish-brown, distributed over the entire egg, but most abundantly about the base; often they are confluent, and form a wreath. Deep shell markings appear purplish. Exceptional eggs are plain, or so thickly speckled with light brown as to conceal the ground color. They average in size .68 x .52. In length they rarely measure less than .61, or more than .73; and in breadth less than .49, or more than .55 of an inch.

DIFFERENTIAL POINTS:

See table.

REMARKS:

The illustration was made from a nest taken June 3rd, 1879, in a wild rose-bush. It fairly represents the usual size, materials, and position. The foundation consists of weed-stalks and a few straws; the superstructure of finer weed-stems, fibres, and split grasses; the lining of horse-hair and roller-grass. The eggs figured show the usual sizes, shades of ground-color, and markings.

The Field Sparrow is retiring in its habits, and therefore has few acquaintances except among ornithologists. Its song, which is quaint, is thus described by Mr. Minot, in "Land and Game Birds of New England," page 216: "Their notes are sweet and very clear, and have been likened to the tinkling of a bell. They open with a few exquisitely modulated whistles, each higher and very little louder than the preceding, and close with a sweet trill. But they are often varied; and, says Mr. Allen, 'The songs of the males' in Florida 'were so different from those of the northern bird, that the species was almost unrecognizable by me from its notes.' The little Field Sparrows, however, are always charming singers, and no sounds are more refreshing, on a warm afternoon of early summer, than those which they produce."

When the nest is approached, the pair which are always near by, utter a chirping alarm note from the bushes or trees, generally managing to keep out of sight, unless the nest contains eggs or young, in which case the female boldly approaches and endeavors to scold the intruder from the premises. However terrifying the performance may be to some, it only calls the attention of the naturalist or collector to the fact that the nest is not far off, and that a little patient searching will reveal it. This indiscreet alarm note has betrayed many a secret, and been the immediate cause of much sorrow and worry to the Field Sparrow. When the female is sitting upon a nest in the bushes, and is quietly approached, she will permit a close inspection of her home without showing any fear, turning her head in a quizzical way, and with her bright black eye carefully scanning the visitor from crown to foot.

Both parents work industriously to appease the appetites of the young, which remain in the nest about two weeks, and follow their mother for a week or so more. Having finally freed herself from their care, she at once begins the construction of a new nest near by the former one, when the same routine of duties are again performed.



Pl. XVII.
MIMUS CAROLINENSIS.
CATFISH.

PLATE XVII.

MIMUS CAROLINENSIS—Catbird.

The Catbird is a resident from April 15th to October the 1st. During this time they hatch one and sometimes two broods. The first nest is usually completed early in May, though building is often delayed until June. The second set of eggs is deposited in July.

LOCALITY:

In the country they build alike in the wildest woods and the most cultivated districts, occupying any bush or tree that is accessible. Thickets along rivers, creeks, canals, and ponds, as well as brier-patches and thick clumps of bushes along roads and about the outskirts of timber-land, are the most frequented localities. In the towns they are nearly as abundant as in the country; the bushes and low trees of the garden and lawn, together with the shade-trees of the streets, affording plenty of nesting sites.

POSITION:

The nest, when situated in a bush, is usually supported beneath and at the sides by a number of stems. Its irregular exterior has numerous projecting sticks, which rest upon the small twigs, and often interlace with them, so that a great degree of security is obtained. Sometimes the materials of the foundation are so interwoven with the branches or twigs which sustain it, that it is impossible to remove the nest without tearing it from its supports. The nest, when built in a tree, is either in a horizontal or perpendicular fork formed by limbs which may be three or four inches in diameter, though usually much smaller, and is supported about the circumference by branches or twigs; or is saddled upon a large limb, or a number of small ones, and otherwise supported as when in a fork. Its distance from the ground when in a bush is commonly about three or four feet, when in a tree it rarely exceeds ten feet, though I have seen one nest in a pear tree over thirty feet high.

MATERIALS:

The foundation of the average nest consists of dead twigs of the various trees and weeds in the neighborhood, from a sixteenth to a quarter of an inch in diameter, and often a foot and a half long. The coarsest material is in the first part of the foundation, and as the work progresses smaller and shorter twigs are employed. The superstructure is composed of similar but finer material, together with dried leaves, bark and tendrils of grapevine, and rootlets. Grapevine-bark in long strips is often used in abundance, and so woven and braided together as to form a basket of considerable strength. The lining is made of light-colored and dark brown or black rootlets, thickly matted together and extending to the rim. About towns and farm-houses, strings, rags, paper, wool, cotton, feathers and like substances are sometimes appropriated; and when suitable rootlets can not be had, grasses and downy weed-fibres are employed for the lining. The external dimensions of the nest are exceedingly variable; the neatest and smallest structures are built in the forks of trees and bushes; the largest and roughest in briars or scraggy

bushes, where an entanglement of the foundation with the stems is necessary for a support. The average of nests in the former position is between five and six inches in external diameter, by four deep. In the latter position they frequently measure eight to twelve inches in diameter, by six deep. The diameter of cavity averages about three and one-fourth, the depth two and one-half inches; from this they rarely vary half an inch.

EGGS:

The complement of the first set consists of four or five eggs; the second, of two or three. They are dark green in color, and average .95 x .69. They seldom measure less than .88 or more than 1.05 in long diameter, or less than .60 or more than .75 in short diameter. Rarely white eggs are found.

DIFFERENTIAL POINTS:

If the color of the egg is once fixed in the mind, no difficulty will ever occur in identifying them, as the color is very uniform and entirely different from that of any other egg, not only of this State but of entire North America. The nest may always be recognized by its size and materials.

REMARKS:

The drawing on PLATE XVII was made from a nest built the third week in May, 1878. Its foundation is composed of twigs of oak, weed-stems, and slender pieces of grapevine. The superstructure consists largely of grapevine-bark; the lining is of rootlets. It represents the average size and position.

Owing to a popular prejudice, the Catbird is much persecuted; they have the reputation of sucking eggs and killing the young of other birds, besides stealing the berries and fruit of the garden. How the first accusation was started, and the cause of its wide-spread dissemination, it is difficult to determine; so far as I am aware, the evidence is all circumstantial. The cry of the bird is so like the animal after which it is named, that the association is not at all calculated to give it character; and where the Catbird is most observed during the nesting-season the Blue Jay is so abundant that I am inclined to the opinion that the sins of the latter have been shouldered upon the former. That the Catbird frequents the cherry-trees and berry-bushes, and uninvited helps himself to the fruit, can not be denied, nor can it be gainsayed that this loss is more than compensated by the amount of worms and insects destroyed. It would hardly be justice to this much-abused Thrush to pass him by without some mention of his song, for of all our singing birds, save one, there is none that can excel him in variety and combination of notes, though it must be admitted that they are at times very harsh and unpleasant. There is, however, great difference in individuals; some have not only a song peculiar to their species, but also mimic unexceptionably the birds by which they are surrounded. A Catbird which some years since built for several seasons in the yard of a friend, so excelled as a vocalist and mimic, that he attracted the attention and admiration of the whole neighborhood. At intervals throughout the day, from a favorite perch upon a pear-tree, he would drop his tail and wings, loosen his feathers until they seemed to stand almost on end, and assuming a comical, semi-quizzical look, pour forth volumes of as pure notes as ever came from a feathery throat. But it was in the early morning and late evening that he made his best efforts. After the sun had gone down, and the western heavens were aglow with soft red light, he seemed in his happiest mood. At such a time, seated upon his favorite limb, he commanded the attention of a large audience, which he would first please, then astonish, then disappoint, then enrapture, then amuse, and finally, just as twilight was fading into night, as if it was a fitting tail-piece to his opera-bouffe, he would convulse his hearers with laughter by mimicking the crow of a young cochin rooster confined in a coop near by; after which he would suddenly drop from the tree to the bushes beneath, where his mate sat upon the nest. In the Spring of 1873 he failed to return, to the great disappointment of many friends.



PLXVII
ORTYX VIRGINIANUS.
QUAIL.

PLATE XVIII.

ORTYX VIRGINIANUS—Quail—Bob-White.

The Bob-White is a permanent resident of Ohio. The greater portion of the year, the old birds with the family increase are found in coveys. In early spring this general attachment is broken up by pairing, each pair selecting a locality where they remain during the breeding season. When mating has taken place it is known at once by the demonstrations of the male, who gives to the whole neighborhood due notice of his domestic intentions by frequent repetitions at short intervals, of his cheerful and well-known notes—*Bob-White, Bob-White*. Nesting begins as early as the first of May. Two, and sometimes three, broods are hatched during the season.

LOCALITY:

Corners of worm-fences and stumps, in garden-patches or in cultivated fields, having tall grass or weeds about them, are favorite sites for the nest. Sometimes it is placed in a field with no protection except the growing grain or grass. Rarely it is built in thick woods, in a tussock, or beside a stump or log. But wherever the locality, either highland or lowland, cultivated or wild, a spot well covered by a luxuriant growth of grass is usually selected. Though at times concealment as a means of security seems to be abandoned, and the nest is placed under the protection of man. I have frequently seen nests built within a few yards of a farm-house, in the short blue-grass near a much frequented path; and only a few seasons since, I found a nest along side a tie on sandy ground within five feet of a railroad track.

POSITION:

The nest which always rests upon the ground, is placed in a slight concavity, either natural or prepared by the mother-bird. Sometimes the materials are so arranged with the surrounding tufts of grass as to form an arched covering having a side opening, but generally it is quite free from any attempt at artificial concealment.

MATERIALS:

The materials of construction consist of dry grass, straws, leaves, weed-stems, or like substances found in the immediate vicinity. On account of the position, a foundation and superstructure are not required. The materials used are, therefore, such as are suitable to make a comfortable and smooth lining to the already selected cavity. The average diameter of the structure is about four and one-half inches.

EGGS:

The complement of eggs is from fifteen to twenty-five, usually about eighteen. Occasionally a nest is discovered which contains thirty or forty, and even more. Such a set is without doubt the joint labor of two or three hens. The eggs are pure white, unless stained by the bed of grass upon which they rest. At one end they are quite pointed, and at the other obtusely rounded, and measure about 1.18 x .98 of an inch.

DIFFERENTIAL POINTS:

The nest and eggs can not be mistaken for that of any other species.

REMARKS:

The nest figured in the plate was taken the fifteenth of June, 1880. It was built near the remaining root of an old stump surrounded with grass and a few stalks of clover. The eggs were completely concealed by the covering which the grass afforded, but in making the drawing this protection was separated sufficiently to show the nest and eggs. The nest is composed of dead grass, dry leaves, and weed-stems.

At the time of the first settlements in Ohio, it is quite probable Quail were scarce, and found only in certain localities. The extensive and dense forests, covering almost the entire territory, made it ill adapted to their nature; and those which were enabled to perpetuate their existence occupied only some of the limited open tracts of land then found here and there over the country. In support of this conclusion I will here refer to the facts contained in a statement made by my great-grand-father who emigrated to this State directly after peace with the Indians was effected by General Wayne under Washington, and, in the Spring of 1798, located with his family on what was then named and since known as the "High-bank Prairie," near Chillicothe. In this seemingly favorable locality he resided several years before the voice of the Quail was heard; so long that he abandoned the anticipation of Quail-shooting, and questioned if it would ever be recognized as a sport in Ohio. One day in early summer he thought he heard a well-recognized though suppressed sound, "*Bob-White*." Somewhat doubting the sense of hearing, he immediately made observations and procured additional evidence, that of sight. Yes, he actually heard and saw the bird. Elated with the good news he proceeded to the cabin and told his discovery with so much excitement and enthusiasm that it created a laugh at his expense. He excused his manner, however, by saying it was sufficient to excite any one, to know that a highly esteemed and familiar friend had found his way through such an interminable wilderness, and announced his arrival in that modest but meaning way.

Bob-White is really a bird of civilization. He flourishes best near the abodes of man. The cultivation of the soil and settlement of the country increase their number seemingly by lessening their dangers, and giving an easy mode of subsisting. With no friend but agriculture, with no protection but fields of grass and grain, they become abundant in spite of the Hawk, the Owl, the Crow, the Blue Jay, the Opossum, the Raccoon, the Polecat, the Weasel, the Fox, the Norway Rat, the Snake, the Dog, the Cat, the mowing machine, the sportsman, the trapper, the heavy summer rains, and the winter snows, each of which has an influence in circumscribing their wonderful capacity for increase.

The Quail regards man as his friend, although he is not a stranger to man's treachery and cruelty. If not for the ill treatment so often received from those whose friendship he courts, he would soon become quite as domestic as the barn-yard poultry. In fact, he frequently presses his claims so perseveringly in this line, that they are received and recognized. Some years since, early in May, I discovered a nest being built by a pair of these birds, in a lot only a short distance from the house. Each day, for several days, they added a little to the appearance of the structure, and when completed, an egg was deposited daily until nineteen filled the nest, and incubation began. Up to this time I had been extremely cautious in my observations, especially those approaching familiarity. But now I made myself quite at home, going to the nest frequently every day, until the birds became so accustomed to my presence, and so well assured that in this confidence there was no danger, that the female would even permit my hand under her and to remove an egg, without being disturbed or getting off the nest. A week before the expected arrival of the little ones, I made a tight fence of boards, about two feet high, inclosing a space twelve feet square. After hatching, the family remained in the inclosure and were fed

the same as domestic chickens, neither the old nor young showing the least fear at my approach. They soon grew strong enough to get over the fence, and I turned them all out.

I have known a number of instances where these birds, having been reared with the farm poultry, became completely domesticated. In one instance, nine beautiful full-grown ones, that had been hatched and cared for by a common hen, with some of her own chickens, had the liberty of all-outdoors, yet they remained constantly about the house and garden, seldom using their wings, and at the call to feed the poultry, they were the first to respond, and not until completely satisfied with the repast, was a chicken, turkey, or other fowl permitted by these pugnacious little fellows to intrude or take a crumb. A slight attempt was made to induce this brood to roost upon a perch, after the manner of their relatives, the chickens. The success was, however, only partial; their attachment to the old method was too great, or their feelings of security so much increased by placing themselves together in a circle with heads outward, as they naturally do at night, that only a compromise was effected. A board was placed in the chicken house five or six feet from the ground, and wide enough to admit the number to place themselves tail to tail in a circle. On this they always spent the night with the other fowls. I have no doubt, however, that the habit of sleeping on the ground could readily be changed to that of roosting on trees or other more secure places; as I instanced once in a bird reared with some chickens, which, after being instructed a few times, readily took the perch by the side of his foster-mother, and seemed as much at home as any of the chickens which were now old enough to roost.

Birds from the field, under certain circumstances, as fear or want of suitable selection of ground, will roost singly upon trees and other elevated places. This I have seen quite often in the case of the overflow of lands by high water, and when bewildered in an attempt to adopt city life. Every year, in the fall season, large coveys come into this city and are heard constantly whistling for each other, and may be seen running about the streets. These birds often roost on the house-tops, the tops of chimneys, and on the branches of the street trees, one, and sometimes two in a place, and continue the practice for weeks, or until they become destroyed or leave for the country. As they always get together on foot, it becomes almost impossible, when once scattered in a city, to find each other, and so long as one of their number remains absent and makes it known by the signal whistle, the other birds will remain and endeavor to make themselves heard; and in doing this, they again become dispersed and divided by houses, walls, and fences; and thus day after day is occupied in these fruitless efforts to collect the family, each day lessening their number, until few, if any, reach the fields again.

The social relations existing between Bob-White and the barn-yard fowl are generally very friendly. I have frequently found hens' eggs and Quails' eggs in one nest; and have known a common hen and a Quail to deposit daily, each an egg in the same nest, until the complement was full, at the end of which the Quail submitted the incubation to her larger companion. The disposition of these birds is only moderately good. They are always amiable and gentle in their family relations, and rarely domineering or vindictive towards their friendly associates. They are cowardly towards their enemies; and while in coveys, seem to maintain a sense of security by keeping close together; and so strong is this feeling, that wounded birds, unable to fly, will follow after their companions on foot, as long as able to go. When paired, the two are constant companions, ever watchful over the welfare of each other. They share equally the duties and responsibilities of wedded life, and from the birth of the first offspring to their settlement in the world, as faithful father and mother, are unceasing protectors and providers for the family. This extraordinary strength of attachment, and exhibition of natural affection, has often attracted my attention. I once discovered by accident, a nest nicely concealed by some tufts of grass, after being placed under the projecting end of a fence rail. At this time there were in it five eggs. The number increased daily until twenty-three eggs filled the nest, and incubation began. All went on happily, until one morning there was evidently great distress in this little household. The male bird was sounding his anxious alarm;—he went hurriedly from one part of the farm to that of every other—

sometimes running—sometimes flying—stopping a moment here—a moment there—calling at the top of his voice for his mate, in that peculiar tone which denotes distress. His unanswered cry soon told the tale—some accident—some ruthless Hawk—some sneaking Cat, or some other enemy had captured and destroyed his faithful companion. He kept up his call several hours, sometimes coming close after me, making a low, *chittering* noise, as if suspicious something could be told—that I could tell where his love had gone. Far from it, I was also in search—in search of any thing to give a clue to the unfeeling wretch that had done the bloody deed. I was excited, and would have executed the severest penalty known, if the guilty one could have been found. I had been to the nest several times, with merely the thought she might be testing the affection of her lord, or playing him a practical joke; but no, the eggs were bare. About noon of that day, he ceased his noise, and, hoping his mate had returned, I hastened to the nest again; but in this again disappointed. The reason, however, for his stillness was explained. He was on the eggs, keeping life in the prospective family. For several days he left his charge frequently, to make further search and call for the missing partner. One morning I stopped as usual to see how the little widower was getting along, and found nothing but a huddle of egg shells. Every egg had been hatched. Not far from the nest I heard a low *chit-chit-chit*, and soon discovered Bob with his brood. He continued to care for the young, as I can testify from our frequent meetings, and reared a fine large covey, which received protection and sympathy, during the following winter, of all the farm hands and sportsmen who knew him and his well-behaved family.

Quail are not strictly granivorous in their notions of diet. In autumn and winter, they subsist chiefly upon grain, berries, grapes, black haws, and seeds of weeds and vines. But in the spring and early summer, their food is almost exclusively composed of ants, bugs, and other insects. While Henry William Herbert justly extols the benefits the agriculturist derives from the consumption of weed-seed by these birds, he omits to give them credit for their insectivorous qualities. He says: "When it is taken into consideration that each individual Quail consumes daily nearly two gills of weed-seed, it will be at once evident that a few beavies of these little birds, carefully and assiduously preserved on a farm, will do more toward keeping it free of weeds, than the daily annual labor of a dozen farm servants." With the indorsement of the above it is highly important to add, that a few coveys carefully preserved would protect the farmer against the ravages of many destructive insects, which are by far greater pests and more to be feared than the ragwort, the dock, or the brier. As an insect exterminator, the Quail may be placed in the front ranks of our native birds. I examined the crop of one that was killed by flying against a white house, having been frightened from a potato-patch near by, which contained seventy-five potato-bugs. This is only one of many instances illustrating the practical usefulness of these birds to the farmer.

Quail are pursued by man and beast and bird and reptile; but with a fair opportunity and timely warning, they manifest a wonderful faculty of evading their foes. Excepting against the pot-hunter, they are provided with ample means for self preservation. He who steals upon them while enjoying the sunshine by the side of some old log or stump or fence-corner, all seated in a space less than the circumference of a half bushel measure, or even closer on a cold winter-day, and betrays their confidence by firing upon them in this unsuspecting attitude, filling his bag with the dead, and marching off, having the brand of "sneak thief" upon his brow, is a pot-hunter. He, too, who with a show of indifference, rides about, pretending to be overseeing his own affairs, whistling around and around, until the poor unsuspecting birds, in order to get out of his way, unconsciously walk into the net prepared for them, and as a reward for their confiding friendship, triumphantly pinches their heads, is a pot-hunter. Against such they have no protection. When these birds have warning of danger and wish to evade detection, or when closely pursued, they will conceal themselves against the observation of their foes in the most magical manner; and if satisfied they are unobserved, will not move sometimes until they have suffered themselves to be captured on the spot. It is quite amusing to witness

the changes that come over the dreams of the amateur sportsman when he fails to put up his expected birds. He knows where they are, for he marked them all down in the meadow of short-grass, within a few yards of a stump or tree. Then, it is such a commentary on his dogs, for he knows they are all right—never better, truer noses; still they go, over and over, round and round, without coming to a point.—There, that dog has flushed a bird.—Now he is assured they are all within twenty feet of that place; and he renews his search, and keeps his dogs going over and over the same ground, until both dogs and gunner disgusted, quit the place. How they got away, and where they all went to, and why that single bird remained where the covey went down, and why the dogs did not point that bird; all pass through the mind of the hunter as he leisurely marches on in search of other and better luck. He perhaps meets his experienced friend, to whom he relates his disappointment, and who, in turn, proposes after a given time to return to the meadow and the stump or tree. They do so, and every dog comes to a point. Down comes three birds. The dogs move cautiously, in a moment again stand. This is repeated until the last bird has gone the gantlet. Experience of this kind is not a novelty, but occurs frequently. A few years since I was out with a friend, and we flushed a very large covey, and marked them down accurately on an elevated piece of ground in a woodland pasture. The grass was short, and there was not even a weed or brier, and but here and there a large tree. We moved forward with three dogs, expecting to bring on an engagement at once. We made the dogs approach cautiously, giving them warning that game was in the immediate vicinity, but they arrived on the identical spot where we saw as many as thirty birds alight, without making the least demonstration whatever that there was any thing unusual about the place. We knew better, and made them go over and over, crossing and re-crossing, until it seemed every foot and even every inch of ground had been most thoroughly examined. We did this until two sportsmen and three good dogs gave up the pursuit. It was now past noon, and we sat down on the grass and uncorked our canteens, and opened up the lunch. We were eating, talking, and laughing, occasionally rewarding the dogs with a cracker, when my friend, by way of sport, said, "Look at old Tom, he is on a point." The dog was half standing, half down, with his nose thrown under his chest, between his front legs. Sure enough, he was on a point, for there was the bird, with its bright black eyes, only partially concealed by a leaf, almost under the dog's body. My friend placed his hat over it and caught it, without moving from the dinner-table. At that instant another dog made a point within six inches of my feet. I saw the bird at once, and attempted to capture it with my hand, but it made its escape. This was the signal for a general move, and the whole covey rose from all around and about us. The concert of their actions in the manner of going down, retaining scent, remaining still under the most trying circumstances, and the mode of leaving—all indicated an understanding, an education by command, how to act in times of great danger.

The ability to evade the perception of the sharpest and most experienced dogs, has been accounted for in various ways by sportsmen and authors; some claim that through fear they retain their scent by alighting and not moving after touching the ground, and compressing the plumage in a way to check the emanations. Others deny most emphatically that they possess the power to withhold the scent, and say the manifestations are accounted for by the scent being confined and covered up; while others assert knowingly that the reason the dogs are unable to find the birds at the spot where they are seen to settle is they are not there to flush; that they have run away, and that after a given time will return to the place where the sportsman expected, but failed, to find them. I am satisfied, however, that ordinary observation and a little patience will convince any one that these birds do possess the power, and do frequently exercise it in a way that deprives the dog of not only the ability to locate them by scent, but also of the entire knowledge of their presence; and that the birds appear to fully understand when they are in this relation to the dog. That they do not always "run away and come back again," I have frequently tested to my entire satisfaction. A few years since, I flushed a covey of about one dozen birds and marked them down very correctly in some broom-corn stubble. My dog was beyond question,

but I was compelled to give them up without finding a bird. The cover was not heavy, and I put this down as possibly an instance where they all had escaped by running "like race horses."

A short time after, about three inches of snow fell in the night, and in the morning I concluded to look after this covey a little further. The dog came to a stand near the same place that I found them a few days before. When flushed, they all took their old route, settling close together. I was soon there with the dog, and hunted the place over and over, but could not find even a track or imprint in the unbroken snow. I now made several circles around the place, to render assurance doubly sure that the birds had not run away, and were at the point where I saw them go down. Yes, the evidence became conclusive. They were all there within a short distance of each other. This was enough. I walked away and remained long enough to quiet their fears, and then returned, and the dog made point after point until probably every bird was found, although not one had moved from the spot at which he touched the snow-covered ground.

Quail shooting is the great field sport of the country. It is by far the most exciting, as the bird is the most troublesome to follow up and, when flushed, the most difficult to kill. It may have its faults, but when restricted by proper legislation, it has its benefits and advantages. While it diminishes the aggregate number of birds by subtracting from each covey, it seldom destroys the whole family, and in this way insures the preservation of an abundance to propagate another season. Wing shooting also draws from the destructive spoils of the pot-hunter and trapper, making the birds coy, suspicious, and not easily seen. True, there is a possibility that the sportsman with dog and gun may destroy a whole family unintentionally or by accident, for it once fell to my lot to be the author of a chapter of this kind. While riding along the road in a buggy with a friend, I discovered my dog on a stand near the road fence some distance in front, with nose and tail parallel to the line of fence. As I moved up, the birds rose by concert, in line all along the fence, and I fired at the rear bird and for a few seconds saw nothing but smoke, then a wounded bird making his way on foot into a sorghum patch on the opposite side of the road. I attempted to intercept his passage but failed, and he escaped into the dense cover. Where the other birds were I did not yet know, for the smoke stood at the muzzle so long it was impossible to see a feather fall. My friend, who had charge of the conveyance and sat in the buggy, declared that every bird fell. I walked over the ground and picked up twelve dead birds; from the first bird to the last the distance was about twenty yards. The next day, on passing the place the dog came to a point; not expecting a repetition of the slaughter, I walked up, but no bird flushed. I now moved some dead grass, and found the one that had been winged the day before, and which was so badly wounded that I killed him as a kindness. Here the whole covey was exterminated; but as I felt sorry for the act, did not intend it, and would never do it again, it should not be considered unpardonable. Experience, however, sustains the position taken by sportsmen, that the judicious use of the gun merely diminishes by drawing upon the yearly increase, and does not oppose the preservation and healthy propagation of these birds.

Still, if unmolested, they would not, perhaps, under the most favorable circumstances, become in excess of their usefulness to the agriculturist. Yet, however plentiful they may be, it seems an inexcusable cruelty to take their lives for either gain or amusement, and I agree with Mr. Herbert: "Were I a farmer, I would hang it over my kitchen fireplace, inscribed in goodly capitals—'Spare the Quail! If you would have clean fields and goodly crops, spare the Quail! So shall you spare your labor.'"

Part VII

ILLUSTRATIONS

OF THE

NESTS AND EGGS

OF THE

BIRDS OF OHIO

WITH TEXT



CIRCLEVILLE, OHIO

COPYRIGHTED BY GENEVIEVE E. JONES AND ELIZA J. SHULZE

JANUARY

1881



Pl. XIX Fig 1.
EMPIDONAX ACADICUS.
ACADIAN FLYCATCHER.

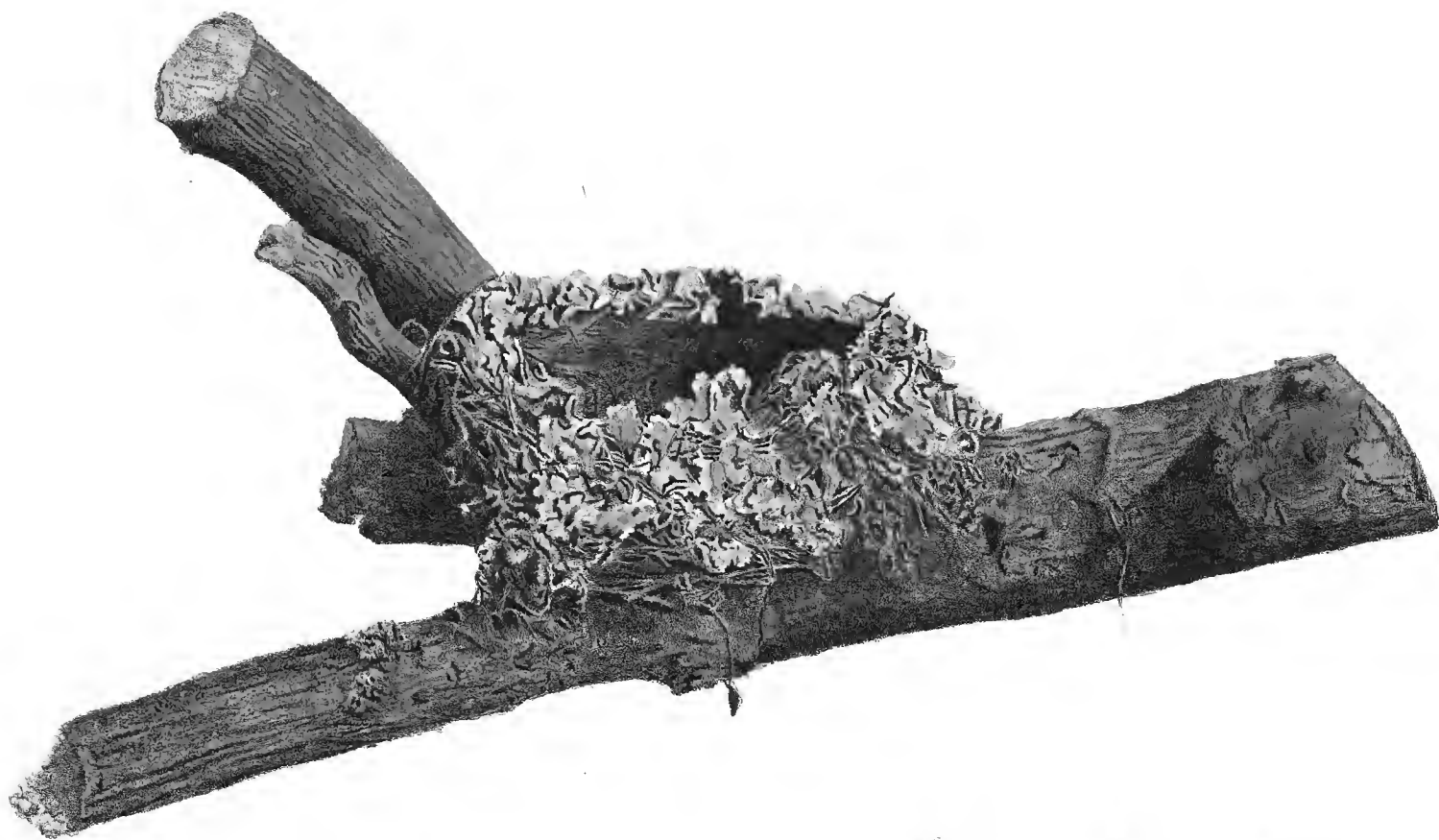


Fig. 2.
CONTOPUS VIRENS.
WOOD PEWEE.

PLATE XIX.

Fig. 1. EMPIDONAX ACADICUS—Acadian Flycatcher.

The Acadian Flycatcher arrives from the south the last of April, and remains about five months. The first nest is built, and the full complement of eggs is deposited, before the beginning of June. Early in July a second nest is usually constructed, and I am inclined to believe that a third brood is sometimes hatched the latter part of August, for at this season I have found several nests containing either partly incubated eggs or very young birds.

LOCALITY:

Land timbered with large trees, and overgrown with bushes, low trees, vines, and weeds, is the natural home of the Acadian Flycatcher. They love to penetrate the depth of the forest, and delight to rear their young in the most quiet and gloomy spots. They rarely, if ever, build in isolated trees, though they often resort to the border of woods and the scrubby trees among taller timber along little-used wagon-roads. In upland woods throughout the state they build more or less commonly, and even in the dry hill-country in the southern counties, the melodious call-note is by no means an unusual sound. Throughout the entire course of the Scioto river, which, rising in Hardin county, flows south to the Ohio at Portsmouth, I am informed the Acadian Flycatcher is abundant in the summer. I have found their nests plenty in the thick, rank vegetation along the river's banks from Columbus to near its mouth. In June, 1880, I saw numbers of nests on low trees, among horse-weeds and nettles, where the ground, protected from the sun by the interlacing arms of giant sycamores and elms, is always soft and damp. And even upon islands, so low that a rise in the river of two or three feet overflows them, I have noticed nests in July, when hunting Woodcock. On account of the various localities inhabited one tree is almost likely to afford a nesting-site as another, the only desideratum seems to be a suitably situated branch. I have taken nests from the maple, dogwood, oak, hickory, black-haw, thorn, indian-arrow, beech, elm, papaw, willow, buckeye, hazel, and wild-grapevine.

POSITION:

The nest is usually suspended in a horizontal fork formed by small twigs near the extremity of a low, horizontal limb. Sometimes it is built at the bifurcation of a limb of an inch or two in diameter. Sometimes, as when in a vine or small bush, it is suspended between two parallel stems. And again, it is sometimes built among a number of irregular and twisted twigs. The rim of the nest may be in the same horizontal plane as the branches which support it, but commonly the supports touch the nest about halfway down the sides, the rim being half an inch or more above them. The bottom of the structure is generally free, but occasionally it rests upon a small branch. Ordinarily a canopy of leaves hangs immediately above the site, and protects the home and its contents from rain. A nest observed recently had three large oak leaves lying like shingles over it, and so close to the rim that they must have touched the bird's head while sitting. The distance of the nest from the ground varies from three to twenty feet; the usual distance is about six feet.

MATERIALS:

Of the nests before me there are two distinct types. In general shape and method of construction they are alike, but in material they are very dissimilar. No. 1 is composed of small, round, dried stems, apparently of a slender vine, as many of the pieces are eighteen inches or more long, and pieces of roller-grass; the outside and inside are similar; no web, or only a very little, is used. No. 2 is composed outside entirely of catkins, and is lined with the same vine as in No. 1, or with pieces of vegetable fibre and blades of grass; perhaps it would be better to say that No. 2 is the same as No. 1, except that it is covered with catkins, much of the material composing No. 1 being consequently dispensed with. The whole is bound together and to its supports by an abundance of spiders' web or webby substance collected from trees. The majority of the nests are a combination of these two forms. In some the catkins predominate, though they do not cover the entire outside. In others, the vine and grass are the principal material, but all are lined with more or less of the vine, and are fastened together and bound to the branches by a varying quantity of web. Some nests of the second type are bulky, and have long festoons of catkins hanging from their rims. Some nests have grasses or weed-fibres a foot or more long swinging loosely from them. Others are very neat and small, containing just enough material to hold the eggs, which can be plainly seen through the bottom. The average diameter of the cavity at the rim in fourteen nests is two inches. None vary an eighth of an inch from this measurement. The depth of cavity varies from .60 to 1.50, average about .90. The walls of the nest vary in thickness from a few fibres to an inch.

EGGS:

The complement of the first set of eggs is uniformly three. The second set sometimes contains but two. They are deposited every day, or at intervals of two or three days. The shell when blown is decidedly creamy in hue, occasionally almost buff. The tint varies some in different sets, and even in specimens of the same set, but the egg is never white. The markings consist of blotches, spots, and minute specks, of chocolate or reddish-brown, confined chiefly to the basal half, often forming a ring. They are never very numerous, seldom numbering more than twenty blotches and spots, and as many specks. Deep shell-markings are wanting or few. About one egg in every six or eight is plain or marked with only one or two spots. They measure in long-diameter from .70 to .79 of an inch. In short-diameter from .53 to .59. An average egg measures .74 x .55. The smallest egg in nine sets is .71 x .53, the largest .79 x .58.

DIFFERENTIAL POINTS:

The nest is unique. It may always be recognized by the description. The eggs alone may be mistaken for those of *E. trailli*, to which the reader is referred for details.

REMARKS:

Fig. 1, PLATE XIX, represents a nest of the first type. The original was taken May 30, 1877, from a black-haw. The eggs figured show the average and extremes in ground-color and markings, and the ordinary shapes and sizes. When the Acadian Flycatcher is approached while sitting, she will permit the hand within a few inches of her nest before flying. If driven off, she will alight on some low limb nearby, and sometimes will utter, in measured succession, her faint, mellow cry; but generally she silently watches the intruder. If the nest contains young, she may perhaps show more concern, but she never blusters or loses her slow, dignified air. The male seems to be entirely free from any anxiety or concern about the family, let happen what may. The young leave the nest the thirteenth or fourteenth day after they are hatched.

PLATE XIX.

Fig. 2. *CONTOPUS VIRENS*—Wood Pewee.

The time of arrival and departure of this species is about the same as that of the preceding. In mild seasons the nest may be built the last of May, but June is the usual month in which the cares of housekeeping begin. It is probable that two broods of young are often hatched. I have not, however, determined this with certainty.

LOCALITY:

The Wood Pewees are fond of quiet and solitude, but they do not habitually resort to the dense woods so dear to the Acadian Flycatchers. As a rule, the nest is built in a large tree, in the interior or about the border of a wood, on the bank of a stream, or by a roadside, but it may be placed in any suitable tree in almost any locality. Frequently they come into town and build in apple-trees, pear-trees, and shade-trees. In the country, oak and hickory-trees furnish the majority of nesting-sites.

POSITION:

Ordinarily the nest is situated either on the upper surface of a limb, or in a horizontal fork. Occasionally it is placed among a number of irregular branches. The limb in the first instance is, I believe, never quite as large in diameter as the nest, and is generally covered more or less with lichens. When the nest is in a fork, the supporting branches are rarely less than half an inch in diameter. If the angle formed is small, the nest is built as when upon a single limb, but if the angle is large, as is frequently the case, it is let down between the branches so that the rim projects little if any above them. Dead as well as living limbs are chosen for the site. The distance from the ground varies from six to forty feet.

MATERIALS:

Slender or split grasses, weed-fibres, fine weed-stems, narrow strips of grapevine-bark, and pieces of moss-fibres, in various proportions, form the nest proper. Ordinarily, fine round grass and split blue-grass are the principal materials. Exteriorly the nest is covered with pieces of lichen, which are held in position by web, and the whole is secured to the limb by an entanglement of web and lichen with the bark. The diameter of the cavity varies from 1.80 to 2.25 inches, average about two inches; depth of cavity averages about .75. The wall of the nest at the rim is from .25 to .75 of an inch. The limb upon which it rests frequently forms the bottom, with no covering, but if it is in a fork the wall through the bottom may be .75 of an inch.

EGGS:

The complement of eggs is generally four. They measure from .65 to .79 in long-diameter, and from .50 to .59 in short-diameter. The largest egg before me is .79 x .59; the smallest .65 x .54. The

average size is about .73 x .56. The shell is creamy in hue, sometimes as deep as that of the Acadian Flycatcher, sometimes as white as the egg of the Kingbird. The markings consist of blotches, spots, and specks of chocolate-brown or reddish-brown, confined to the base, where they form a ring; often they are confluent; deep shell-markings have a lavender tint, and are about as numerous as the surface-marks. Plain eggs are rare.

DIFFERENTIAL POINTS:

The nest may always be identified, as it is the only lichen-covered nest of its dimensions built in the state. The eggs may usually be distinguished from those of *E. acadicus* or *E. trailli* by the abundance of deep shell-marks, and by the larger size and greater quantity of surface-marks. It is rare to find surface-marks superimposed upon large, deep shell-marks in the eggs of the Acadian or Traill's Flycatcher, while it is the ordinary arrangement of the marks on the eggs *C. virens*.

REMARKS:

Fig. 2, PLATE XIX, represents an average nest in position, materials of construction, size, and shape. The eggs show the common sizes, shapes, ground-colors, and markings.

The nest of the Wood Pewee is difficult to find, owing to its small size, lichen-covered exterior, and obscure position. Even when situated in a conspicuous place, upon a dead branch, it is easily mistaken for a lichen-covered excrescence so common upon the trees which the Pewee frequents. When the nest is disturbed the owners often show considerable courage, but different individuals are as variable in valor as are individuals of the human family. One pair may fight for their nest, another only scold, and still another may silently see home and eggs demolished or carried away, without uttering the least protest. Mr. Maynard has so pleasantly written of this species, that I can not do better than quote from him. Although penned in New England, the text is equally true of Ohio: "Among the summer birds which visit New England in summer, there are none that come with less display than the Wood Pewees. Almost all of our returning migrants announce their arrival more or less ostentatiously; the flocking Blackbirds chatter loudly as soon as they enter the meadows; the Bobolink greets his old home with his most cheerful song; the notes of the Oriole seem the clearest when he sings among the blossoming cherry-trees; and even the little chipping sparrow does not allow an hour to pass after he enters the garden without informing his old friends of his advent by uttering his peculiar notes. In fact, field, meadow, and woodland are ringing with the melody of newly-arrived songsters, and amid this joyous outbreak, the gently-given *pe-wee* of our somber-colored little friends passes almost unheeded. But later, in June, when the oaks and maples are covered with delicately-tinted foliage, when the ferns have fully unrolled their beautiful pinnate fronds, when Nature has clothed all vegetable life with her loveliest greens, and the air in the groves is redolent with that spicy odor only to be observed in early summer, then the plaintive lay of the Wood Pewee is heard to perfection. It is more noticeable near the middle of the day, when many birds are taking their noon-time siesta, and naught is to be heard excepting the long-drawn notes of the Flycatcher, which are given very low, as if the bird was not desirous of breaking the stillness. They sing throughout the day all summer long, constantly reiterating their lay even during the most sultry days of August."



Pl. XX.
ICTERIA VIRENS,
YELLOW-BREASTED CHAT.



PLATE XX.

ICTERIA VIRENS—Yellow-breasted Chat.

Early in May, a singular sound may be heard in the woods, especially in the southern portion of the State. It is a mellow whistle rapidly uttered in cadence six or seven times, and after a short interval repeated perhaps with variations. It is a sound not easily described, though readily imitated. The listener who hears it for the first time, will be puzzled to know the cause, so spirit-like it seems to move about. First it may come from the bushes upon the left; then from the tree-top upon the right; then from behind close by: and then immediately it may come from a distance in the thicket in front; when suddenly from the tall tree overhead a curious bird launches into the air, and, as if his wings were disjointed, flaps them slowly, almost striking them, first above and then below, uttering, as he tumbles to the opposite tree, the same ventriloquous sounds that at first deceived the ear. This is the male Yellow-breasted Chat. The clownish actions and peculiar whistles are his best endeavors to please his chosen partner, who, concealed in the thick foliage, admiringly watches his queer antics. After oviposition is completed the male ceases his courting melody and his droll flight from tree to tree, but still continues his varied song at intervals throughout the day from some perch near by the nest. The young are usually all hatched by the 15th of June. In 1879 I found a nest on the 16th of May, which contained a full complement of eggs partly incubated. This pair probably arrived the last week in April. But one brood is reared during the season.

LOCALITY:

Thickets in upland woods are the favorite resorts of the Chat. The nest is sometimes placed in the depth of the forest, but generally it is built about the outskirts, or in some narrow belt of timber; for being very susceptible to cold these birds like a southern or eastern exposure, or an open spot in the forest, where, though the nest is concealed by a thicket, they are not deprived of the sun's warm rays. Young black-haws, hazel, briars, and other young trees and bushes furnish the usual nesting sites.

POSITION:

Usually the nest is supported by a number of perpendicular stems or branches, but sometimes it is built in an upright fork. Its distance from the ground is generally about three feet; rarely it is eight or ten feet high in the top-branches of a young tree.

MATERIALS:

The foundation and superstructure of the nest consist of pieces of weed-stems, long pieces of some trailing vine, dried and skeletonized leaves, and occasionally grape-vine bark and coarse blades of grass; these are loosely and indiscriminately arranged in the selected position, and lined with pieces of slender vine, having a gray, brown, or pinkish color, to which is sometimes added fine weed-stems or roller-grass. The exterior of the structure is unfinished in appearance and irregular in outline, and even the

cavity is often oval instead of round. When round it measures in diameter about 2.50 inches. The depth varies from 1.75 to 2.50 inches. The external diameter of the nest is from 3.75 to 6.00 inches; the external depth is from 4.00 to 6.00 inches.

EGGS:

The complement of eggs is four or five. The ground color is white; sometimes the shell is glossy, sometimes dull. The markings consist of blotches, spots, and speckles of red-brown, at times almost burnt sienna, distributed differently in different specimens. The majority of eggs are marked with spots and minute specks over the entire shell, but thickest at the base where they are more or less confluent. Others have large distinctly outlined blotches, slightly confluent at the base, irregular elsewhere, interspersed with spots and speckles. Others have only a few faint spots and speckles; and still others have only a wreath of blotches and spots about the crown. Deep shell-markings are not conspicuous. The size of an average egg is .88 x .67 of an inch. The largest of thirty-eight eggs is .96 x .69. The smallest, .83 x .63. The greatest long-diameter is 1.00; the greatest short-diameter, .71. The least long-diameter, .80; the least short-diameter, .61 of an inch.

DIFFERENTIAL POINTS:

The nest and eggs of the Yellow-breasted Chat can generally be identified with certainty, though sometimes very similar to the Redbird's. For comparison, see *Cardinalis virginianus*. The eggs often resemble the Ground Robin's and the Catbird's, to which refer for details.

REMARKS:

The illustration was made from a nest collected on the 21st of May, 1878. It is in the usual position, composed of the ordinary materials of construction, and is of the average size. The eggs figured represent the common sizes and markings.

The nest of the Chat is very easily found, as the male bird always betrays the secret by his continual song. When undisturbed he faithfully keeps watch over his property; on the approach of danger he at once sounds an alarm note, and then endeavors to persuade the intruder to follow him right to the nest, being careful however to go in an opposite direction. If not successful in his attempts to mislead, he commences a terrible tirade of abuse. Dr. J. M. Wheaton, describing this performance, says: "Then follows a medley of sputtering, cackling, whispering, and scolding notes, frequently interspersed with loud whistles, and continued as the bird runs, hops, or flies in the deepest thicket, with a pertinacity which knows no fatigue. He tells you that your gun won't shoot, that it is a flint-lock; that your ramrod is broken, that you shot it at a buzzard; that you haven't got a gun; that you are a bald-headed cripple; that there is a horrid suicide in the bushes, and a big snake, and a nasty skunk; that your baby is crying, your house is afire, and the bridge broken down; that you have missed the road to the reform-farm, and that the poor-house is over the creek, and he calls the dogs; says that you have gone to seed; that you are taking up too much of his valuable time; that you must excuse him for a moment. During all this time he remains invisible; or at most his black eye and mask, or golden breast, appears for a moment as he peers at you from the tangled branches of the brambles, or flashes from branch to branch, dancing an accompaniment to his fantastic notes. At the last, he suddenly appears upon the top of a bush not ten feet from you, makes a profound bow, and with a derisive whisk of his long tail, exposes his immaculate white crissum and dives again into the deepest thicket. You take a long breath and wipe your face, and he returns to the assault from the rear. Should you move on, he follows, and if you approach, he retires, and, keeping at a respectful distance, he laughs defiance, shouts mockery, and tantalizing sarcasm. He is a fearful scold, and it is no wonder the inside of his mouth is black."



Pl XXI.
GEOTHLYPIS TRICHAS,
MARYLAND YELLOW-THROAT.

PLATE XXI.

GEOTHYLPIS TRICHAS—Maryland Yellow-throat.

The Maryland Yellow-throat arrives in Central Ohio the latter part of April, and remains until the first or second week in September. Two broods are commonly hatched during the summer, the first nest being constructed about the middle of May, the second in July.

LOCALITY:

The nest is built in a thicket growing about the border of an upland woods, along the edge of a field, or by a country roadside; or in rank grass or weeds in a low meadow or swamp, or about the bank of a ditch, creek, river or pond. In fact, almost any locality where long grass grows or a thicket is to be found, except in the interior of forests, may answer for the site.

POSITION:

Generally the nest is placed upon the ground in a tussock or at the root of a bush, or is built two or three inches above the ground among upright stems, with its base resting upon an accumulation of old leaves, weed-stalks or grass. Rarely it is situated among the stems of a brier or tangled bush, several feet above the ground.

MATERIALS:

Dried leaves, coarse grasses, and pieces of weed-fibres and stems compose the walls of the ordinary nest. The lining consists of well-selected blades of grass and roller-grass. Besides the materials mentioned, strips of bark from the wild grape-vine and from dead trees, together with other suitable substance found in the locality, occasionally enter into the foundation and superstructure. The lining sometimes contains a few horse-hairs. Mr. Maynard mentions a nest which was lined with feathers from domestic fowls.

The diameter of the cavity averages about 2.25 inches; the depth varies from 1.75 to 2.50, average about 2.00 inches. The external diameter varies from 3.00 to 4.00 inches, average about 3.50; external depth varies from 2.25 to 3.50, average 2.75 inches.

EGGS:

The complement of eggs is usually four; sometimes five are laid. The ground color is pure white. The marks consist of blotches, spots, speckles, and irregular fine lines of sepia of varying shades. Some eggs are sparingly but uniformly marked with irregular-shaped spots and speckles of light shade, with more deep-shell than superficial marks. Some have very dark, almost black, blotches at the base only, interspersed with deep shell spots and speckles; the marks are sometimes well-defined in outline, sometimes are faded at the edges, like a blotch of color placed upon a damp porous paper. Some have a ring about the crown composed of confluent lines, blotches, spots, and speckles. Others are a combination

of any of the above types, and still others are immaculate. But upon all marked specimens the deep shell-marks generally outnumber the surface ones.

The average size of the egg is about .69 x .52. The greatest long-diameter observed is .73; the greatest short-diameter, .55. The least short-diameter is .49; the least long-diameter, .61. The largest egg is .72 x .55; the smallest, .61 x .51 of an inch.

DIFFERENTIAL POINTS:

See Table.

REMARKS:

The nest figured on Plate XXI. was found the 17th of June, 1880. and contained four fresh eggs. It was built among the perpendicular stalks of a clump of golden-rod, growing along a little used river-road. A recent freshet had drifted leaves, broken stems, and rotten wood against the old stalks of the plant, two of which, bent and broken, are shown in the illustration. Upon this debris the bottom of the nest rested, while all about it long blades of grass and various weeds were forcing their way through the covering of drift.

The eggs exhibit the common sizes, shapes and marking.

The Maryland Yellow-throat is the most terrestrial of any of the family. Much of their time is spent among grass, weeds, and low bushes; rarely they resort to the tree-tops, and then to utter for a few minutes only their sharp and shrill notes. Throughout the entire State they are very common, usually attracting attention by their song and brilliant plumage. In their domestic relations they are very model birds. The male assists the female in collecting the materials for the nest, and he seems to take the greatest interest in all affairs of the home. During the period of incubation he stays close by the nest, and accompanies his partner when she leaves for food. They guard their treasure with the greatest solicitude, resorting to various strategies at the approach of danger to draw attention from their domicile. But when these means fail, and the nest is about to be robbed, they sometimes show a remarkable degree of valor.

Part 8

ILLUSTRATIONS

OF THE

NESTS AND EGGS

OF THE

BIRDS OF OHIO

WITH TEXT

CIRCLEVILLE, OHIO

COPYRIGHTED BY GENEVIEVE E. JONES AND ELIZA J. SHULZE

APRIL

1881



Pl. XXII.
CARDINALIS VIRGINIANUS.
CARDINAL RED BIRD.

PLATE XXII.

CARDINALIS VIRGINIANUS—Cardinal Redbird.

This beautiful Grosbeak is sufficiently hardy to endure the coldest weather and deepest snows of this latitude. Being granivorous, a good sustenance is easily gained from the cornfield and cribs of corn, even in the most unfavorable seasons. With the return of spring, a new energy seems to enter the song of the Redbird; for hours at a time he now whistles his loudest notes; nor later do the duties of the household lessen his splendid performances. By the time the leaves have put forth upon the maples, a mate has been chosen, and the business of the summer is seriously contemplated. A few years ago I found young birds large enough to fly on the fourteenth of May. But this is exceptionally early. Nest-building generally occurs between the first and twentieth of May. Sometimes, however, it is much later. Occasionally two broods may be raised by a single pair during the season.

LOCALITY:

Wherever trees abound with underbrush, the nest may be built. There seems to be no preference between river-bottoms and uplands. It is usually situated in a thicket of briars or other bushes, or upon a low tree, either in the interior or about the border of a woods. Sometimes it is placed among the stems of the wild grape-vine, or close to the trunk of a large tree. In towns, the birds build in evergreens and ornamental bushes.

POSITION:

The nest commonly rests upon a tangled mass of horizontal stems, or upon two or three horizontal branches; but sometimes it is in a perpendicular fork having a large angle. When it is placed close to a tree-trunk, it is supported either by short shoots or by thorns. Its distance from the ground rarely exceeds ten feet; ordinarily it is between three and four feet.

MATERIALS:

A large number of nests collected during the last ten years, within a radius of a dozen miles of Circleville, are very similar to each other in materials. The foundation and superstructure of these nests are composed principally of long, slender weed-stems of various kinds, together with strips of grape-vine bark, in varying quantities. The lining consists of pieces of a slender vine of a pinkish-gray or brown tint. Old leaves, strips of corn-husks or blades, and weed-fibres now and then enter into the foundation or superstructure, and occasionally the superstructure is composed entirely of strips of grape-vine bark. The diameter of the cavity averages about three inches, but it may vary a quarter of an inch on either side of this measurement. The depth of cavity averages an inch and one-half, but it may be much shallower. One nest which I remember to have seen, was nearly flat on top.

EGGS:

The usual complement of eggs seems to be three; but the number varies from two to four, and perhaps even five. They measure in long-diameter from .90 to 1.10; in short-diameter from .68 to .78. The largest egg in fifteen sets is 1.08 x .78; the smallest, .90 x .69. The average is .99 x .73. The ground-color of the shell is white, sometimes faintly tinted with green, rusty-brown, or yellow, and is either glossy or dull. The markings consist of blotches, spots, and speckles. Several eggs before me are spotted and speckled with light yellowish-brown so thickly as to conceal the ground-color. Several others have only a few bold blotches of rich brown interspersed with a few well-defined specks, and deep shell-marks of a lavender tint. Between these extremes various combinations of blotches—often drawn out into broad lines which run lengthwise with the shell—spots, and speckles of numerous shades of brown exist. Sometimes the marks are all more or less confluent over the entire shell, and almost conceal the ground-color. Sometimes they are confluent only at the base, the rest of the shell being sparingly marked; and again they are distributed over the entire egg, and not confluent. Usually, the deep shell-marks are not conspicuous, though occasionally they outnumber the surface-marks. The eggs of the Redbird differ among themselves more than those of any other species. Even eggs from the same set are so variously marked, and such different shapes and sizes, that it is often hard to believe them to have been laid by the same bird. On this account, amateurs have often questioned the veracity of collectors from whom they have purchased unbroken sets.

DIFFERENTIAL POINTS:

As a rule, the cavity of the Redbird's nest is larger in diameter and not so deep as that of the Chat, and its foundation and superstructure lacks the dead leaves so abundant in the latter; but the lining is the same. Extremes of each might easily be confounded. The eggs, too, are often very similar in size, shape, and markings, to those of the Chat; but the brown in the former is rarely, if ever, quite so red. The egg of the Cowbird, when laid in this nest, can be distinguished from those which properly belong to it by the darker shade of the markings, and also by the color of the yolk, which will always be found to differ in hue from the others, as the yolks of each set are generally of a uniform tint.

REMARKS:

The illustration was drawn from a nest taken May 20, 1880, from a low branch of a young haw-tree (*Crataegus spathulata*). It represents the average nest in size, position, and materials of construction. The eggs show the usual sizes, shapes, and markings.

The Redbirds, in the winter, sometimes assemble in small flocks, and remain in thickets near by a suitable food-supply. They are also at this season seen in pairs, but whether the same relationship is continued during the summer I am unable to say. They are very fond of corn, which they readily peck from the ear with their stout bills. Being delightful songsters in captivity, the country lads set box-traps with a figure-four, and bait them with corn. Many birds are taken by this means every winter, and sold in the neighboring towns for twenty-five cents a piece, or as much more as can be had for them. During the summer, they visit the towns and farm-yards, and become quite tame. In the woods in Southern and Central Ohio, they nest abundantly. At the sight of man, the female sits upon her eggs closely; if driven off, she flies silently away, and will suffer her nest to be robbed without a cry. But when the young are hatched, she becomes much bolder, and will defend them to the last. After they are large enough to leave the nest, the male seems to take especial interest in them. When one of the young is caught, both parents will follow the captor long distances. The male is really a bold bird. When wounded, he scratches and pecks the hand that holds him, and exhibits a bravery and muscular strength that one would little suspect in so small a body.



Pl. XXIII, Fig. 1.
VIREO GILVUS,
WARBLING VIREO.



FIG. 2
VIREO OLIVACEUS,
RED-EYED VIREO.

PLATE XXIII.

Fig. 1. VIREO GILVUS—Warbling Vireo.

The Warbling Vireo is a common summer-resident throughout the state. In the neighborhood of Circleville, they arrive the third or fourth week in April, and remain until the first of October, and sometimes even until the month is well advanced. Early in May the site is selected for the nest, and if the weather is favorable, as it generally is, nidification begins at once. As a rule, but one brood is reared during the season. If the nest is accidentally destroyed, or the eggs broken or carried away, a second nest is built and another set of eggs deposited, as is the habit with all birds with which I am acquainted. If the second effort is interfered with, a third nest may be constructed, and, if it becomes necessary, perhaps even a fourth, so intent are they upon accomplishing their summer-mission.

LOCALITY:

In the country, the tree upon which the nest is placed is usually situated in a cultivated field, or beside a road in the near neighborhood of a dwelling. In towns, the favorite site is a shade-tree of a street or yard. The tree selected is usually a large one with dense foliage. The silver-poplar seems to be the favorite; next to it, the maple. In villages where poplars are grown for shade, I have always found this Vireo more abundant than elsewhere in the neighborhood. Dense woods are not frequented during the summer; it is even exceptional to find a nest about the border of a large woods. A few of these birds are, however, usually to be found breeding in every belt of large trees growing along the bank of some water-course.

POSITION:

The nest, which is always pensile, is built in a small, stout, horizontal fork, formed either by the bifurcation of a branch, or by an offshoot from it. Sometimes it is supported by two parallel twigs, growing but a few inches apart, from the same stem. It may be near the extreme end of the limb, or close to the main trunk; ordinarily, it is about midway between these two points. Its distance from the ground is usually between twenty and forty feet. Dr. J. M. Wheaton informs me that he has seen one nest at least seventy feet from the ground. Probably it is sometimes much lower than twenty feet.

MATERIALS:

The foundation of a typical nest, built in the country at a distance from any dwelling, consists of long, flaxen fibres from the inner bark of trees and weeds, and slender blades of grass; these are wrapped over and around the supporting twigs, and interwoven among themselves, until a basket-like structure is formed of the proper proportions. In this is placed a layer, about half an inch thick at the bottom, becoming thinner as the rim is approached, of bits of fibres, grass, plant-down, and such other soft, vegetable material as can be procured, and suits the taste of the builder. The entire cavity is then lined with wiry grass, and sometimes horse-hair, or both combined. The grass is that usually called roller-

grass, and blue-grass split into fine shreds. In towns and near farm-houses, where the majority of nests are built, pieces of string and thread may be used in the foundation, together with various other substances too numerous and inconstant to mention. But wherever built, and of whatever materials, the structure generally has a neat and compact appearance. The greatest external diameter of the nest, which is about midway between the rim and bottom, varies, in different specimens, from two and one-half to three inches; external depth, from one and seven-eighths to two and one-fourth inches. The cavity at the rim is very uniform in diameter, rarely varying more than one-eighth from two inches. Internal depth varies from one and one-fourth to one and five-eighths inches; general average, one and one-half inches. Usually the diameter of the cavity is a little greater half an inch below than at the rim.

EGGS:

The number of eggs in a full set varies from three to five. They are pure white, with from ten to twenty spots, and as many speckles of chocolate-brown of different shades, confined chiefly to the base. Some specimens have but one or two minute dots upon them; others sometimes have a blotch of light brown; and still others are said to be immaculate. In long-diameter they measure from .70 to .78; in short-diameter they measure from .51 to .60. Average of twenty-one specimens, .73 x .57.

DIFFERENTIAL POINTS:

While no rule can be given which will differentiate with certainty the nest and eggs of this species from that of the Red-eyed Vireo, yet it may be stated, as a general fact, that the nest is more compact and situated higher in the trees, and the eggs smaller and less spotted. According to Dr. Brewer, the eggs are less spotted than those of any of the other Vireos. A careful reference to the materials and dimensions, as well as locality and position, will usually determine the species.

REMARKS:

PLATE XXIII, fig. 1, illustrates a nest taken the twentieth of May, 1877, from a silver-poplar, standing beside a country road. It was near the extremity of a limb, about thirty feet from the ground. It contained four fresh eggs. The foundation of this nest is composed of flaxen fibres and grasses; the superstructure, of fibres, grasses, bits of decayed weeds, and a downy substance from the poplar; the lining is made entirely of roller-grass. The external diameter is nearly three inches; from the lowest part of the rim to the bottom is about two inches; the cavity at the rim, two inches. It seemed unnecessary to figure more than two eggs, as they differ from each other so slightly; the two represented show the common sizes and markings.

I have never noticed the male or female display any unusual amount of combativeness when the nest is disturbed; but Mr. Charles Dury, of Avondale, has written to me as follows: "For years the Warbling Vireos have nested in the silver-poplars, near the house. They are very energetic and happy little birds, and very courageous and solicitous for the safety of their nests, darting at any intruder with such violence as to quickly clear the premises. When the female is sitting, should a Grackle or a Robin come near, she will dart at it and sound the war-cry. Then instantly the male will join her, and the trespasser will be quickly routed. From the vicious way they assert their rights, an old lady here calls them the 'Warbling Viragos.'"

The song of the Warbling Vireo may be heard in the neighborhood of the nest almost any hour of the day. The male, as he moves from branch to branch, peering now for an insect on a leaf, now on a twig, gives forth a sweet, flute-like melody, in striking contrast to the rattle of wagons, clatter of feet, and hum of busy voices in the street beneath. While, in the country, where all is quiet, the music charms the listener, and holds him a willing captive, as he endeavors to translate into English the words set to the music of the busy little bird.

PLATE XXIII.

Fig. 2. *VIREO OLIVACEUS*—Red-eyed Vireo.

The Red-eyed Vireo is the most abundant summer-resident of its genus. The time of arrival and departure is about the same as that of the preceding species. Nidification begins the first or second week in May. But one brood is generally reared in a season.

LOCALITY:

In the country, the nest is usually built in a tree or sapling, rarely in a bush, about the edge of a woods with thick underbrush; but sometimes it is placed in a much less sequestered locality, such as a tree among the shrubbery that lines the bank of a ditch, creek, canal, pond, levee, road, fence-row, or a similar place. Near farm-houses, as in towns, the shade and fruit-trees furnish the favorite sites.

POSITION:

The nest is pensile, and is supported like that of the Warbling Vireo. It is generally near the extremity of a limb, and is distant from the ground from three to fifteen feet. The ordinary distance is about six feet. Dr. Brewer states that it is sometimes fifty feet high.

MATERIALS:

Four nests, representing the usual materials of construction, are composed as follows:

No. 1. Collected June 21, 1880; contained four young birds large enough to fly; situated five feet from the ground in a horizontal fork of a young sassafras tree, at the edge of an oak woods. Internal diameter, two inches; internal depth, one and three-eighths; external diameter, two and three-fourths; external depth, two and three-eighths inches. Externally there is nothing to be seen but large pieces of hornet's nest, with here and there a fibrous band and bits of yellowish silk holding them loosely together. Upon one side is a large bulge formed of hornet's nest. It is bound to its supports with vegetable fibres and yellow silk. Within this basket is a superstructure composed of pieces of reddish-brown bark, probably the inner bark of the grape-vine, from a sixteenth to a quarter of an inch wide. The lining is composed of shreds of the same bark, from three to eight inches long, loosely arranged.

No. 2. Collected May 20, 1878; contained two fresh eggs; situated six feet from the ground in a black-oak tree, near the edge of an oak woods. Internal diameter, two; internal depth, one and three-fourths; external diameter, three; external depth, two and one-eighth inches. The basket is composed externally of wide blades of grass, strips of inner bark of trees, and pieces of hornet's nest, bound together and to the supports by white threads of silk. The superstructure and lining are similar to No. 1.

No. 3. Collected May 21, 1878; contained five fresh eggs; situated three feet from the ground in a horizontal fork of an elder bush, on the bank of a levee. Internal diameter, two and one-eighth; internal depth, one and three-fourths; external diameter, two and three-fourths; external depth, two and one-half inches. Externally the basket is covered so thickly with rolls of white silk that it is only here

and there that a bit of hornet's nest and grass can be seen. The superstructure is composed principally of wide blades of soft grass; the lining is similar to No. 1.

No. 4. Collected June 1, 1877; contained two fresh eggs; situated about fifteen feet from the ground in a horizontal fork of a water maple, on the bank of a creek. Internal diameter, two and one-half; internal depth, two and five-eighths; external diameter, three; external depth, two and one fourth inches. Externally it is composed of flaxen fibres, strips of bark, and chips of rotten wood. The superstructure and lining are similar to No. 1, but of a lighter shade. There is no web or silk about the structure.

Nests before me, built in towns, contain, besides the materials mentioned above, paper, threads, ravelings, and bits of cloth. The average size of the nest is about two inches in internal diameter; one and five-eighths in internal depth; two and three-fourths in external diameter; and two and a fourth in external depth. The widest part of the nest is usually at the rim.

EGGS:

The number of eggs in a set varies from three to five. They are pure white, spotted and speckled, principally about the base, with chocolate-brown of different shades, at times so dark as to appear almost black; occasionally very fine, wavy lines are added to these marks. Rarely an egg is almost immaculate; deep shell marks are yellowish-brown. In long-diameter they measure from .75 to .95; in short-diameter, from .52 to .66. A set of four eggs before me, of about the average size, measure respectively, .80 x .60, .81 x .59, .79 x .60, and .80 x .60. A set of four eggs in the possession of Mr. Dury, average .90 x .54.

DIFFERENTIAL POINTS:

See *Vireo gilvus*.

REMARKS:

The nest illustrated was taken the second of June, 1880. It was situated at the extremity of an oak branch, seven feet from the ground. The exterior is composed of pieces of hornet's nest, strips of inner bark of trees and plants, shreds of the inner bark of the wild grape-vine, and bits of web. The hornet-paper is bound tightly with flaxen shreds, frequently a stitch is taken in it, as shown in the large piece in front. The interior is composed entirely of long shreds of the inner bark of the grape-vine. The two eggs figured show the average in size, shape, and markings.

The external measurements given for this nest as well as for that of the Warbling Vireo, are a little less than those given by eastern writers for the same species. The internal measurements are, however, the same. It seems probable, therefore, that less material is used by these birds in the construction of their nests in the West than in the East. It may, however, be entirely accidental that I have met with none over three inches in external diameter.

The Cowbird frequently selects this Vireo's nest in which to deposit her eggs. Sometimes they are hatched with apparent indifference, and, sometimes, the nest will be deserted on this account. Several years ago I found a deserted nest containing three Cowbird's eggs. The same season I discovered another containing two Cowbird's eggs and three Vireo's, all partly incubated. Recently, while examining the materials of a nest, a dull pop was heard to come from the bottom of the structure. Investigation showed the cause of the noise to be the bursting of an addled Cowbird's egg concealed between the foundation and lining. It had evidently been deposited before the nest was completed. Mr. Dury mentions an instance which came under his notice, where the parasitical egg was disposed of by placing a new lining in the nest. The Cowbird, not discouraged by this performance, laid another egg. At this the Vireo became disgusted, and abandoned the nest, notwithstanding she had deposited two of her eggs.



PLXXXIV
ZENAUDURA CAROLINENSIS.
CAROLINA DOVE.

PLATE XXIV.

ZENÆDURA CAROLINENSIS—Carolina Dove.

The Turtle Dove is an exceedingly hardy bird; swift on the wing, well clothed with an abundance of compact feathers, and very tenacious of life, they brave our coldest winters. At any time of the year, when the weather is not too severe, nidification may occur, but the majority of nests are of course constructed during the summer months. I have seen Doves sitting on fresh eggs in every month except December and January; and I have no doubt but that they build nests and lay eggs occasionally during these months in mild winters. How many broods a single pair rears during a year I do not know, but imagine the number varies, according to circumstances, from two to four.

LOCALITY:

Like the Robin they build almost any place and every place. Cultivated fields and thick woods, river-bottoms and springless hill-sides, country roads and village streets, are each and all common localities. The usual site is a tree; but in the early and late months, when the foliage is sparse or absent, the nest is often placed upon the ground in a pasture, plowed field, or prairie; or upon a stump in the woods, the rail of a worm-fence, the top of a straw-stack; or in the loft of a barn or cattle stable; or some such place where protection and warmth are to be secured. Thorn-trees and hedges also furnish sites for the early nests, while apple-trees and evergreens in country and town yards are favorite trees in the summer.

POSITION:

The position of the nest when built in a tree is variable, sometimes it is placed upon a large horizontal limb against the main trunk; this is especially the case when in a thorn-tree or elm. Sometimes it rests upon two branches close to the bifurcation from the main limb. Sometimes it rests upon a small branch, and is prevented from tipping over by slender twigs which grow out from either side. Sometimes it is built upon a platform of tangled vine-stems and twigs. Its distance from the ground varies from three to thirty feet; usually it is about six or eight feet. When not placed in a tree, the nest is situated upon some horizontal plane, such as is afforded by the ground, a shelf, or a beam.

MATERIALS:

Dried twigs, weed-stems and roots, grape-vine tendrils, old leaves, leaf-stems from the walnut and other trees, straws, and blue-grass, in various proportions, are the common materials of construction. Some nests are composed entirely of roots having long slender fibres; others entirely of weed-stems and twigs; and still others are made of straws and grasses alone. But usually when the nest is in a tree, most if not all the materials mentioned above are combined in it. When the bird selects a stump, the ground, or a straw-stack for the site, frequently no nest is prepared, the eggs being deposited upon the stump, ground, or straw, as the case may be. If a fence-rail or ratter is the chosen place, a nest

similar to that built in a tree may be prepared, but commonly only a few sticks and straws are gathered, and so arranged as to prevent the eggs rolling off. No lining is added even to the most perfect structure; but the upper surface often consists of better selected materials than the base. The average diameter of the nest is about four inches, not taking into the measurement the loose sticks which generally project on all sides.

EGGS:

The complement of eggs is always two. They are elliptic or oval in shape, have a pure white shell, moderately glossy, and measure in long-diameter from 1.00 to 1.20; in short-diameter from .72 to .90. The largest egg before me measures .89 x 1.15; the smallest .74 x 1.10. The average is .82 x 1.11. As soon as the first egg is laid the Dove begins sitting, and as several days may elapse before the second egg is deposited, it is not infrequent to find young birds of somewhat unequal sizes in the same nest. Occasionally when the young are almost half-grown the mother lays again; the trouble of incubation is thus transferred to the nestlings. The same habit exists among tame Pigeons.

DIFFERENTIAL POINTS:

The nest and eggs can generally be distinguished from the Wild Pigeon's by their smaller size. The nest alone resembles somewhat the Cuckoo's, except that it contains no catkins.

REMARKS:

The nest illustrated was selected on account of the simplicity of its surroundings. It is a compact and elaborate structure, but no more so than is necessary for security. The position in which it is placed requires more material and better workmanship than if it had been situated upon a large limb. It is composed of twigs, roots, weed-stems, and straws; the upper surface is made up of the same but finer material than the base.

During the period of incubation the male Dove is very attentive to his partner; he often brings her water and food, which he feeds to her after the manner of the family, that is by regurgitation. When the young are hatched both parents supply food; as soon as they are large enough to fly, the male takes them in charge and the female busies herself about the cares of another brood. In summer, Doves are commonly seen in threes, flying here and there, or feeding in the field or road. The trio usually consists of one parent and two young. By the time the fall months come the majority of young are hatched and well able to take care of themselves; they now congregate in flocks with the old birds, and resort to the stubble and corn-fields to feed. As night approaches they make long flights to some orchard or weedy field to roost. During these flights, which occur just at dark, many are killed by the telegraph wires which interlace the State. I have picked up numbers of these birds with broken heads, disjointed wings, and severed necks from under one wire which stretches across a favorite route. At this season their numbers are also thinned by the insatiable hunter, who, placing himself near a roost, can, if a good shot, kill dozens in an evening. The small boy, who has not yet become a wing-shot, also kills his share of the Doves. He shoots them in the trees upon which they alight, in the road when feeding, in the yard of a pork-packing house to which they resort for salt, or some such place, where he can take advantage of their moments of quiet. So persistent and common has this raid become that there is now comparatively few Doves in the State. When no other shooting can be had, wing-shooting at Doves affords tolerable sport, as the birds in the proper season are strong flyers, and require a good charge to penetrate their thick armor. Sometimes in the afternoon when feeding in stubble they will lie well to a dog, and may then be shot over points like quail; but it is only occasionally that they behave in this manner. When properly served, a Dove in good condition is quite eatable; this is all the more reason however for their protection. They should not be killed before October or after February, and never except while on the wing.

Part 9

ILLUSTRATIONS

OF THE

NESTS AND EGGS

OF THE

BIRDS OF OHIO

WITH TEXT

112502

CIRCLEVILLE, OHIO

COPYRIGHTED BY GENEVIEVE E. JONES AND ELIZA J. SHULZE

JULY

1881



PL XXV. FIG. 1
TROCHILUS COLUBRIS
RUBY-THROATED HUMMINGBIRD.



FIG. 2.
POLIOPTILA CÆRULEA.
BLUE-GRAY GNATCATCHER.

PLATE XXV.

Fig. 1. *TROCHILUS COLUBRIS*—Ruby-Throated Hummingbird.

There is a belief among those who give little attention to ornithology, that there are several species of Hummingbirds in the state. This error has probably arisen from the different coloration of the male from the female, and also from the various iridescent hues produced by change of position and light. As a matter of fact, there has never been a Hummingbird seen in Ohio except *T. colubris*. This species, which is the smallest of any of our birds, arrives the third week in April, and remains until about the same week in September. During their stay each pair, as a rule, raises but one brood. The nest is built the latter part of May, or early in June, according as the season is advanced or backward.

LOCALITY:

In the country, the nest is usually built in the woods, upon a tree, bush, or vine. Among the trees there seems to be no partiality shown. The wild trumpet-vine is a favorite place. In towns and about farm-houses, orchard-trees are the most frequently selected sites. Without regard for the configuration of surface or the condition of the soil, they build both in town and country in the vicinity of a suitable food-supply. As the flowers among which they feed are numerous, and often grow spontaneously in unlooked-for or out-of-the-way places, the location of the nest becomes a matter of considerable latitude.

POSITION:

Generally the nest is saddled upon a small branch—inclined at an angle of 45°, or less, from a horizontal plane—of a tree, bush, or vine, from five to forty feet above the ground, in such position that one or more small twigs increase the base upon which it rests, or support it at the side. The nest is said to have been found fastened to the trunk of a tree, and also upon a weed stalk.

MATERIALS:

Externally the nest is always covered more or less with lichens of various shades. Some nests are entirely and uniformly covered with these little scaly plants, arranged like so many small shingles or tiles. The lining is composed of plant-down of different kinds having a white or yellowish appearance. This down is probably collected from willow blossoms and from the leaves of some of the forest trees. Between the lining and the external covering fine vegetable shreds and fibres are at times found; but generally the same material which constitutes the lining makes up the bulk of the superstructure and foundation. In one nest, before me, the plant-down is three-fourths of an inch in thickness through the bottom; at the rim it is not more than one-sixteenth of an inch. The lichen covering is attached directly to this by means of web. There are no other materials in the structure. Some writers have stated that the lichens are glued on by the saliva of the bird. In some instances this may be the case; but in all nests which I have seen they have been “glued” by fine web, to the nest and to each other. The nest itself owes its security, to a large extent, to its web attachments to the limb upon which it

rests. The greatest diameter of the cavity, which is about three-eighths of an inch below the rim, varies from .90 to 1.25, average 1 inch. The diameter of the cavity at the rim is .20 to .30 smaller. The depth of the cavity varies from .60 to 1.50 inches. The external dimensions are subject to considerable variations, easily accounted for when we consider the various positions, the difference in skill of the architects, and the amount of time at their disposal. An average specimen measures in depth 1.75 inches, and about the same in diameter.

EGGS:

The complement of eggs is two. The shell is dull white, unmarked. They vary but slightly in size from .50 x .34 of an inch. The ends are similar in shape.

DIFFERENTIAL POINTS:

The small size of the nest and of the eggs will always insure identification.

REMARKS:

The nest illustrated was taken from the limb of an apple-tree near Gambier, in June, 1879. It contained two fresh eggs. It is a beautiful specimen of Hummingbird architecture. The two eggs figured represent the usual sizes and shapes.

The Hummingbird's nest is very difficult to find, even when the actions of the birds designate the tree on which it is built. When the locality in which the nest is placed is approached, both birds may attack the intruder in the most savage manner; they never actually strike, but they dart at the trespasser with such velocity that nothing can be seen but a hazy streak, while their buzzing wings and squealing voice indicate their anger. About the time they seem to have given up the attack and deserted the place, back they come with such suddenness as to startle any but the strongest nerves.

The domestic life of the Hummingbird is a model in every respect, and in strict harmony with the beautiful little home they occupy. Dr. Brewer, in "North American Birds," says: "About thirteen days elapse between the full number of eggs and the appearance of the young." Never having had the opportunity to observe the period of incubation, I can not verify the above. The period has been placed by a recent writer at eight days. After the young are old enough to leave the nest, they follow their parents for some days, seemingly taking instructions in the manner of gaining a living. Among their own species, and even among larger birds, the males are very pugnacious. During their battles they utter repeated squeaks in a threatening tone, and strike at each other in a violent manner, until one of the combatants shows the white feather.

In confinement the Hummingbird soon becomes tame, but always at a loss of health and spirits. In 1875 one came into my room through an open window, and was captured without injury in a butterfly-net. A cage of mosquito-bar was constructed, and the little fellow was imprisoned. Here he remained until the following winter, when he died, apparently of a broken heart. After a few weeks' confinement he became so tame that at times the liberty of the room was given him. He knew his name, and would come when called and perch upon my finger. One chilly winter day I found him unable to sit upon his perch. He had been rapidly losing vitality since the period of their migration had passed. I took him from the cage and placed him in the warm palm of my hand, and procured some hot-house flowers for him. The little fellow, though too weak to stand, endeavored to probe the flowers for their insects and nectar. When removed from my hand he would crawl back with the most human expression of a broken heart I have ever seen in a bird. In this position, chosen by himself, my hand warmed the little body until it ceased to live. The amount of intelligence and feeling displayed by this bird was really surprising—so much so that I resolved never again to rob one of that liberty which must be so dear and pleasant.

PLATE XXV.

Fig. 2. *POLIOPTILA CÆRULEA*—Blue-gray Gnatcatcher.

This species is next in size to the Ruby-throated Hummingbird. It arrives, according to Dr. Langdon, April 10th, and departs September 15th. The nest is constructed between the first and the last of May. When two broods are reared, as is frequently the case, a second nest is built in July.

LOCALITY:

Tall trees along the banks of streams, sides of ravines, and in woods without much underbrush, are the usual nesting places. Sometimes trees along country-roads are selected. I have never known the nest to be built in towns, though it is probable that it is at times, as the birds are apparently very tame and unsuspecting. Dr. J. M. Wheaton, in his forthcoming report on the birds of Ohio, says of *P. cærulea*: "For their summer home they choose a side of a ravine, or a glen, or glade in mixed woodland."

POSITION:

The nest is saddled upon a small branch, which is horizontal or nearly so, at such a point that it receives the support of one or more small twigs at the base or side. Its distance from the ground varies from ten to fifty or sixty feet. Its distance from the trunk varies with the kind and shape of the tree upon which it rests, and also with its distance from the ground. Usually, however, it is nearer the extremity of the limb than the trunk of the tree.

MATERIALS:

The foundation and superstructure are composed of very fine vegetable fibres and slender pieces of roller-grass, intermixed with plant-down and various soft vegetable materials rolled into irregular pellets or felted in with the fibres. The lining is sometimes made of the same substances as the superstructure, but usually it consists of a thin but compact layer of soft plant-down, white, dun-colored, or reddish-brown. The down from willow-blossoms, and cotton-trees is frequently employed. Occasionally a nest is lined with more or less horse-hair or small feathers. Externally the structure is covered with scaly lichens, grayish-colored ones are ordinarily used. These lichens are fastened by web in the same manner as those on the Hummingbird's nest. Some nests are uniformly and beautifully covered, in others less care is taken. One specimen before me is not more than half covered, and that is slovenly done; while the nest illustrated rivals in workmanship and beauty its smaller companion. The thickness of the walls differs considerably in different nests; the external dimensions, therefore, are subject to greater variations than the cavity. The average external diameter, mid-way between the rim and base, is about two and one-half inches. At the rim it is a little less, and at the base a little more. Sometimes the average central diameter is as great as three and one-half inches. The external depth varies from two to three and one-half inches, usually it is about the same as the diameter. The cavity at the rim averages about one and one-fourth inches; an inch below the rim it increases to about one and three-fourths inches; from this measurement it varies but little. The depth varies from one to two inches; average about one and one-half inches.

EGGS:

The complement of eggs is usually five; sometimes as few as three. According to Mr. Ernest Ingersoll, a set is sometimes composed of six.

When an egg is recently blown, the ground-color has a faint greenish-tinge, which never entirely fades. The markings consist of spots, dots, and speckles of dull reddish-brown, usually distributed over the whole surface, though most abundant about the larger end. Some specimens are marked exclusively with dots of a very uniform size; others are marked principally with large spots; but the most common form is a combination of dots and speckles. Although the markings are most abundant at the base, it is only occasionally that they form a well-marked wreath. The deep shell-marks are bluish and purplish tinted. In long-diameter they measure from .55 to .62; in short-diameter from .42 to .49. Average, .46 x .58.

DIFFERENTIAL POINTS:

The nest and eggs together can always be positively identified from the above description. With the eggs alone identification becomes a more difficult matter.—See table.

REMARKS:

The illustration, Plate XXV, Fig. 2, represents a nest kindly loaned to me by Dr. F. W. Langdon. It was taken from an oak tree by Dr. Langdon, at Madisonville, on the 7th of May, 1878. It contained, at the time, five fresh eggs. It was about twelve feet from the ground, and six feet from the tree-trunk. The diameter of the cavity at the rim is about one and one-fourth inches; an inch below, it is one and three-fourths inches; the depth is one and three-fourths inches. The walls are composed of very fine fibres and shreds, compactly interwoven with little rolls of white and reddish plant-down. It is a beautiful specimen of the nest of the species. The eggs show the common sizes, shapes, and markings.

Yesterday—June 2nd—I discovered a nest, fifty feet from the ground, in a hickory tree standing at the edge of an open woods, upon the bank of a very small stream, not more than twenty yards from a much traveled road. Both birds were busily engaged gathering down from the neighboring trees, with which to line their house. Every bird that came to the tree was attacked in such a savage manner that a hasty retreat seemed to be the better part of valor. When a pair of Blue-gray Gnatcatchers are seen during the nesting-season, it is good evidence that their domicile is near by, for they never go far from the locality chosen for their home. The discovery of the nest is, however, by no means an easy matter, even when the tree upon which it rests has been pointed out by the uneasy actions and angry squeaks of the birds in their endeavors to drive away the intruder. In fact, if the owners can not be seen going to and from the nest, there is, ordinarily, but little chance of finding it, owing to its small size and great distance from the ground.

It has been suggested, that this nest is covered with lichens that it may appear like a natural woody excrescence, and thus, by deluding enemies the safety of its contents is greatly increased. This may be the fact, but I receive the statement with doubt. The lichens and web make such a secure sheath about the walls, that these nests owe much of their strength and firmness to them. I can conceive of nothing better calculated to preserve the shape, to keep the walls dry, and at the same time give strength and lightness, than a lichen covering as found upon this nest and that of the Hummingbird.



Pl. XXVI.
SPIZELLA SOCIALIS.
CHIPPING SPARROW.

PLATE XXVI.

SPIZELLA SOCIALIS—Chipping Sparrow.

This well known and sociable species arrives from the South about the third week in March. In mild seasons a few come a week or two earlier. As soon as the foliage upon the trees and bushes offers the concealment desired they begin to build. Two broods are usually raised by each pair during the summer, and sometimes three broods are hatched.

LOCALITY:

In the country, wet timber-lands are seldom resorted to for the purpose of nesting. I have never seen the nest upon a low island or in a swamp, though about the banks of rivers and ponds it is far from rare. The remarks concerning the locality of the Field Sparrow's nest, page 73, so far as they go, are equally true of this species, except that it is never situated upon the ground.

With the exceptions noted above, the nest may be built in any locality, in almost any kind of tree, bush, or vine; but it is about farm houses and towns that they are especially abundant.

POSITION:

The distance of the nest from the ground varies from one to thirty feet; usually it is not lower than three feet nor higher than ten. When the nest is built in a tree, it is supported in any convenient place among the small branches. Sometimes it is in a perpendicular fork; sometimes in a horizontal one; but more frequently it is held by several irregular twigs. When in a bush or vine, it usually rests among an entanglement of twigs or stems, though sometimes it is saddled upon a stem of considerable size, and is held firmly by smaller ones at the periphery.

MATERIALS:

The materials of construction vary much with the locality and individual taste. The nest, as it generally occurs in the woods, has a foundation and superstructure composed of rootlets, fine grasses, fibres, and slender weed-stems; and a lining of still finer grasses and cow-hair, and long horse-hairs, if they can be obtained. About farm houses and in towns various other substances are utilized. Sometimes it is made entirely of hairs; sometimes strings and bits of rags are the principal materials; but, generally, whatever constitutes the exterior, the lining is composed of cow-hair or horse-hair. The external diameter is about three inches; the external depth varies from one and one-half to two and one-quarter inches. The diameter of the cavity rarely varies more than one-eighth from one and three-fourths inches.

EGGS:

The complement of eggs is from three to five. The ground-color of the shell is light bluish-green. About the base there is always a few blotches, spots, speckles, or lines of various shades of brown, sometimes so dark as to appear black; or, as is most frequently the case, a combination of them all. Deep

shell-marks have the usual purplish tint. I have never known of a white or an unmarked specimen being found; but it is probable that occasionally such variations do occur. The egg is in fact a miniature of the Red-winged Blackbird's, the remarks concerning the coloration of which apply also to the eggs under consideration. In long-diameter, they vary from .52 to .82. In short-diameter, from .49 to .58. An average egg measures .70 x .50.

DIFFERENTIAL POINTS:

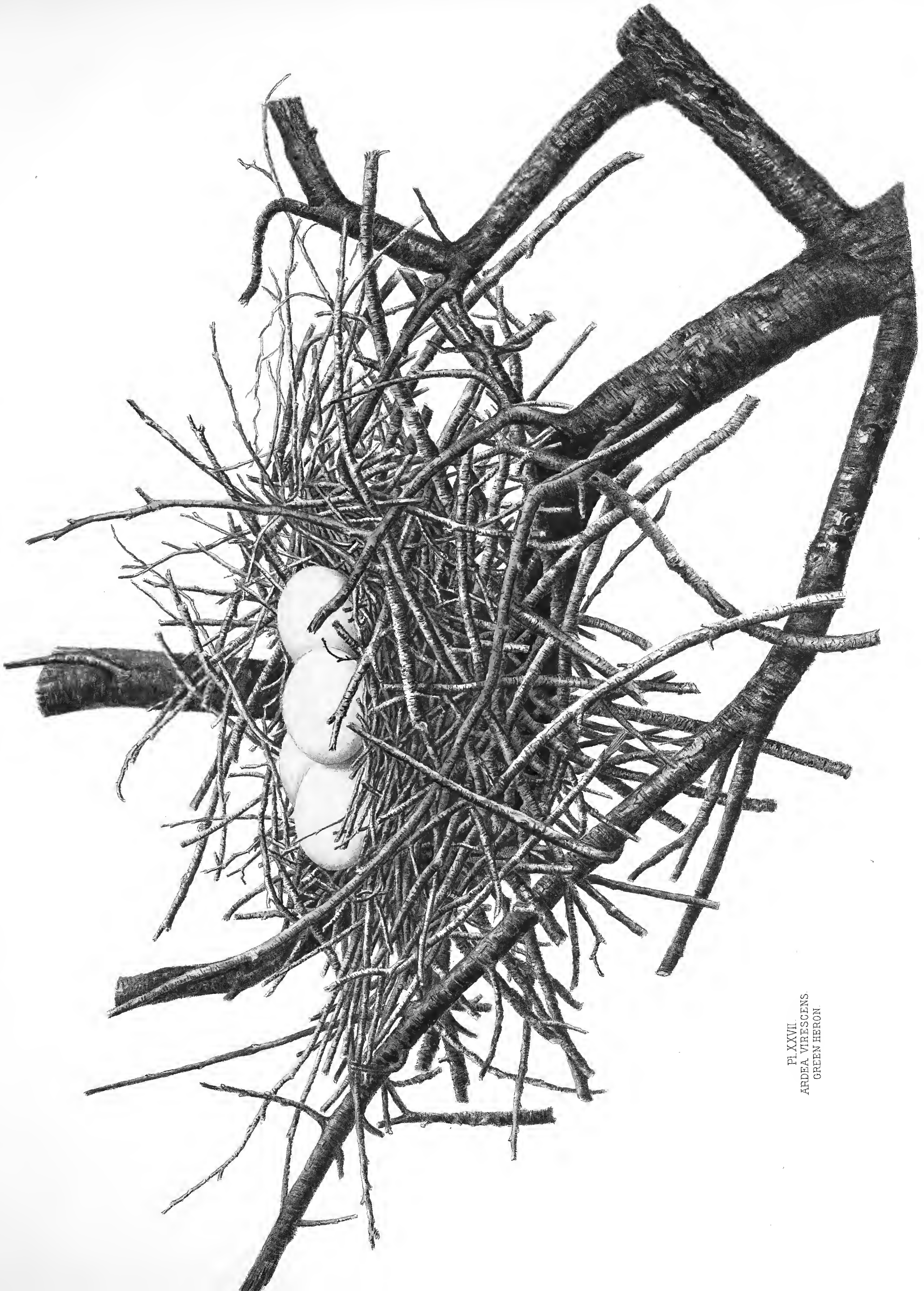
The nest and eggs together can always be recognized from the description given above. The eggs bear so little resemblance to any others of similar size, that even extremes can usually be identified at once. The identification of the nest, however, on account of the great variation in locality, position, and materials, is uncertain; still, one accustomed to the architecture of the Chippy will, generally, experience no difficulty in determining the species when the nest is met with.

REMARKS:

The illustration represents a nest built in an apple-tree, June, 1878. The nearest house was distant from the tree about half a mile. The foundation and superstructure are composed of fine rootlets, weed-stems, fibres, and slender grasses. The lining of fine weed-stems, cow-hair, and long, black horse-hairs. The cavity measures one and three-fourths inches in diameter, by one and three-eighths inches in depth. The eggs figured represent the average and extremes in size, ground-color, and markings.

The subject of this sketch is so well known that it seems unnecessary to speak of its habits, except in a general way. Few persons, perhaps, have passed the period of childhood without at some time having acted as guardian or destroyer of one or more families of these semi-domesticated sparrows. What person, as a child, has not seen the tiny blue eggs, with their dark, irregular lines and spots, in the nest in the evergreen or grapevine beside the door, and watched with pleasure and wonder their transformation into scrawny, half-clothed little birds, that lift their heavy heads and open wide their mouths—which seem to be the greater part of them—when the parent-bird with some unlucky larva makes known her presence by fluttering wings and satisfied notes? And when time has opened their eyes, and covered them with feathers; when the nest seems grown too small for the family; what innocent, having seen and watched their development, has ever resisted the temptation to pat them on the head, or to take one from the nest to squeeze for a moment? Then, just as the hand touches the soft brown feathers, away they go, but unable to fly, they fall struggling to the ground, or cling to the friendly branches. Having thus once tasted the liberty for which they longed, vain is the childish attempt to confine them to their former home. Amid the cries of the young, and lamentations of the parent-birds, the child regrets the meddlesomeness, while the favorite cat rejoices over a morsel so young and tender.

Several years ago, Miss Pritchett, of Ashville, gave me a nest, which illustrates well one of the many accidents that occur to mar the peace and pleasures of bird-life. One day, while passing an apple-tree near the house, her attention was attracted by the scolding cries of a pair of Chippies. Close inspection revealed a nest among the thick foliage. From the troubled actions of the birds, she thought a snake or some other nest-robber might, perhaps, be concealed about the premises. A step-ladder was procured, and the place cautiously approached, but instead of a snake, an apple about one-third grown was found the cause of all the disturbance. The site selected by these birds was among an irregular lot of stems, projecting over which was a small twig having on it, at the time the situation was chosen, a little apple, or perhaps a blossom. The nest was completed, the complement of eggs deposited, and incubation commenced. In about one week from this time the apple had grown to such a size that it drooped into and nearly filled the cavity of the nest. The last straw had broken the camel's back; the mother-bird had gone on and off for the last time. How many days she and her mate had been scolding the apple and vainly endeavoring to push it aside, can only be conjectured.



PL. XXVII
ARDEA VIRESCENS
GREEN HERON

PLATE XXVII.

ARDEA VIRESCENS—Green Heron.

The Green Heron, or Fly-up-the-creek, arrives the last week in April, though stragglers are occasionally seen a week or two earlier. Early in May the nest is constructed. But one brood is reared by a single pair during the season.

LOCALITY:

Trees and bushes in damp tracts of land, and on the banks of creeks and ponds, are the most frequented sites for the nest. But as good fishing streams and ponds do not always offer in their immediate vicinity suitable places to build, rather than abandon them, the birds will nest in the nearest trees or bushes that will answer their purpose. On this account nests are frequently found a mile or more from any water. It is by no means uncommon to find an old orchard occupied by the nests of a colony of these Herons, though it is considerable distance from their feeding grounds. They seem to have a natural liking for old apple-trees, and consequently, will often go out of their way to build in them, perhaps, because their size and shape afford suitable situations in their tops, at no great distance from the ground. Stunted wild cherry-trees, alder bushes, and dwarfed trees of various kinds, together with apple-trees, are the ones usually selected for the nest.

POSITION:

The nest requires, on account of the materials of which it is composed, a rather wide and firm base for its support. This is generally secured among an irregular mass of branches, but sometimes it is saddled upon a horizontal limb which has branches growing out from each side; and sometimes it is placed at the bifurcation of a horizontal limb. There is, however, no position constant enough to be characteristic. Its distance from the ground is never very great; sometimes as little as two feet; but, ordinarily, it is between six and twenty feet.

MATERIALS:

All the nests which I have seen have been composed entirely of slender dead twigs from trees or bushes, varying from one-sixteenth to one-quarter of an inch in diameter, and from five to fifteen inches in length; once in a while, sticks considerably thicker and longer are to be found. These are tangled among themselves and the branches of support, so that a platform of considerable firmness is secured, with a slightly concave top. Upon this rough mat of sticks the eggs are deposited. The periphery of the nest is commonly irregular in outline. The diameter of an average nest in its narrowest part is about seven inches; the diameter at right angles to this is from two to five inches greater. The depth is about two inches; sometimes it is so much less that the eggs can be seen from beneath. But when the same nest has been occupied for a series of years—as frequently occurs—the yearly repairs increase these dimensions considerably, especially the depth of the structure.

EGGS:

The complement of eggs is usually four; sometimes but two or three. The color of the shell is light bluish-green. The shade is very constant. Often they have large patches of chalky-white upon them, made by the excrement of the bird. The longest egg in nine sets measures 1.66; the shortest, 1.46; the broadest, 1.20; the narrowest, 1.08 inches. The average is 1.52 x 1.13. Ordinarily, there is but little difference in the shape of the two ends. As with most eggs, the longest specimens are usually the narrowest. The egg which is 1.65 in length measures but 1.09 in breadth, while the broadest specimens frequently are those of the least long-diameter.

DIFFERENTIAL POINTS:

See *Nyctiardea grisea* var. *nævia*.

REMARKS:

The nest illustrated was taken May 19, 1880, from the limb of a wild cherry-tree. It contained four fresh eggs. The structure, in comparison with some, is neat and small, but pretty fairly represents an average nest. The eggs show the color and common sizes. This species often builds in colonies, like some of the other Herons, but this is not always the case. In fact, it is a very common occurrence for a pair to make their summer home in some secluded little nook, apart from any of their near relatives.

In 1879, a pure albino was reared in an old apple-tree, which stands on the bank of a small pond. After he became large enough to take care of himself, he left his birth-place, and took up his abode at the mouth of a creek, about three miles from the place in which he was hatched. Here he remained a number of weeks, the admiration of all passers by; but his beauty and purity caused his early death.

One of the most interesting sights I have ever seen in bird-life, was a Green Heron catching minnows. He had taken a position upon a small log which was lying half immersed in a little stream. The current had washed a pocket under the log so that it formed a resort for chubs, silversides, and suckers. When I first saw him, he was stretched out flat upon the log, with his neck drawn up, and bill resting close to the surface of the water. While I stood wondering at his queer position, he suddenly darted his head into the water and withdrew a minnow in his beak. This he swallowed and immediately renewed his position as before. I watched with admiration the skill and patience displayed by the little fisherman. Nearly every dip he brought up a fish, though obliged to wait ten to fifteen minutes in the concealed position before one would come within his reach. Every day this bird returned to his fishing place, until all the minnows in the pocket were either captured or became too wary for the tricks of their enemy.

Part 10-11

ILLUSTRATIONS

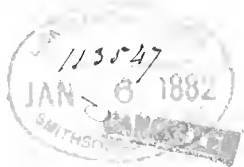
OF THE

NESTS AND EGGS

OF THE

BIRDS OF OHIO

WITH TEXT



CIRCLEVILLE, OHIO

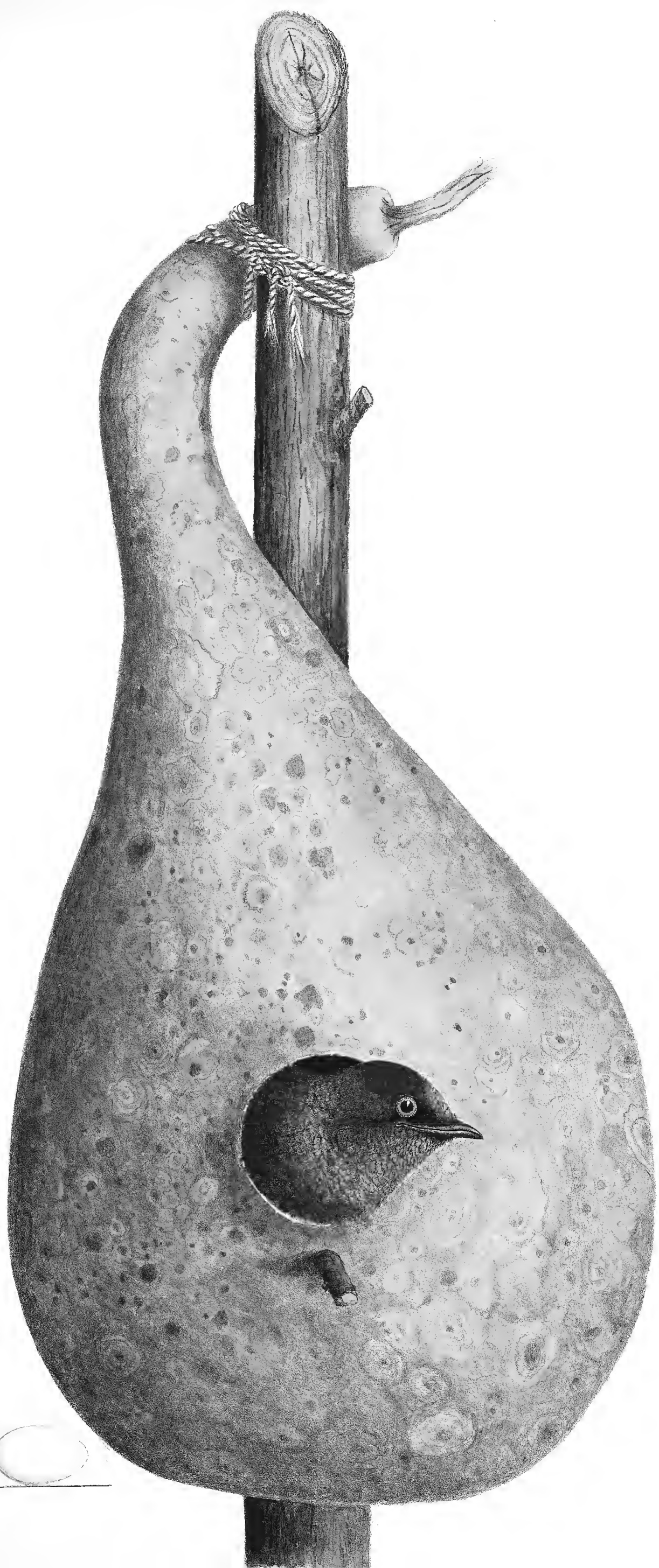
COPYRIGHTED BY GENEVIEVE E. JONES AND ELIZA J. SHULZE

OCTOBER

1881

JANUARY

1882



PL. XXVII.
PROGNE PURPUREA.
PURPLE MARTIN.

PLATE XXVIII.

PROGNE PURPUREA—Purple Martin.

The Purple Martin arrives in Central Ohio during the last week in March, unless the spring is unusually severe, as was that of the present year, 1881; their coming is then delayed until the first or second week in April. For three consecutive springs, previous to the last, the Martins which occupy a box near my office, made their first appearance on March the 24th; a circumstance I have just discovered by looking over my notes, and one which seems to me remarkable.

Immediately upon arrival, the birds which have formerly had homes in the locality, take possession of them, but they do not begin building before the latter part of May, or the first of June, when warm weather is assured. A single pair of birds usually rears but one brood during the season.

LOCALITY:

The Martins have become so domesticated that they follow man wherever he goes, provided, he offers the proper inducements in the way of building places. In town or country they are equally satisfied. The majority of nests are now built in boxes erected for the purpose, and in crevices and holes about buildings. The window-caps and cornices of buildings often seem designed especially for their use. The birds, however, which still hold sacred the traditions of their ancestors, are to be found along river-bottoms, about the narrow strips of tall, old trees, and similar spots, where they find accommodations for nesting in the deserted houses of the Yellow-hammer, and of other Woodpeckers, and in the natural cavities of dead or deformed limbs.

POSITION:

The artificial houses in which they build, as well as the natural cavities, vary greatly in their distance from the ground, and in their surroundings and position. Generally, the bottom of the cavity is upon a horizontal plane; but sometimes it is convex, concave, a plane inclined, or an irregular combination of all, in either case, it is leveled by a mass of well-packed material, upon which the nest proper rests.

MATERIALS:

The materials of the nest vary with the surroundings, and with the shape and size of the selected cavity. When the cavity is large and irregular, coarse straws, dried leaves, and even sticks are used in construction. In towns, straws, strings, grass, and such other like material as may be at hand, without much uniformity, are used. In the country, poultry feathers are often a prominent feature of the structure. It is impossible to state what constitutes an average nest, as the quantity and quality of material is so variable. I have seen eggs laid upon simply a few straws, so arranged upon the level floor, as to make a slight concavity, but so few in number, as to permit the floor to be seen at the center of the nest. While, at other times, the center of the nest is three or four inches thick. I have never been able to procure a nest from a tree; as those discovered have been inaccessible. It is probable that more

care is taken by such birds, than by the semi-domesticated ones, in constructing their nests. The chosen cavity is generally cleared of every movable thing, before a straw is laid. The materials of the old nest being, as a rule, torn out by the Martins before they begin the construction of the new. This is often a considerable task, and occupies as much time, if not more, than was consumed in its construction.

EGGS:

The number of eggs in a set varies from four to six; five is the ordinary complement. They are a pure white, without much, if any, polish. Some are even dull and rough. The shell often has the appearance of being rough-ground, and is sometimes marked with irregular raised lines about the crown, such as are frequently seen on hens' eggs. They measure, in long-diameter, from .90 to 1.02; and, in short-diameter, from .62 to .74; average size, about .97 x .68.

DIFFERENTIAL POINTS:

The size and shape of the egg, when normal, together with its unmarked white shell, will easily identify it. The nest without, or even with the eggs, is not usually of much value, and can not with certainty be always identified.

REMARKS:

PLATE XXVIII illustrates an old-fashioned Martin-box, with its female occupant. The house is such as was formerly erected at nearly every cabin, and such as is still to be seen in certain sections of the State. Now, boxes are generally made, representing dwelling-houses, churches, or court-houses. These are often handsomely painted, and placed upon posts or house-tops; but I doubt if they are any more acceptable to the birds than the old-time gourd,—with a hole cut in the side for an entrance, and a piece of branch driven in just beneath it for a perch,—tied to a long pole set in the ground, or fastened in an upright position to a fence or gate-post.

The Martin is a watchful and pugnacious bird, and on this account his friendship is frequently cultivated, and his qualities utilized by giving him a home in the vicinity of the poultry-yard, thereby assuring protection against the depredations of the Hawk. He delights in maintaining his own rights, and often has combats with the Bluebird, House Sparrow, and Wren, for the possession of a building site, each of which, generally has the advantage over the Martin, in being thoroughly quartered before the latter arrives; but, notwithstanding this fact, I think the Martin is usually victorious.

Although the species is single brooded, like most other birds they will lay a number of sets of eggs, if robbed. When the young are hatched, the parents become exceedingly noisy. Long before day, and often during the night, the males attempt what they seem to consider a song. This consists of a series of noises resembling somewhat those produced by saw-filing, gritting the teeth, an ungreased wagon wheel, and the like. If a colony of birds have nests near your bed-room, you are, perhaps, already familiar with the sounds. But, notwithstanding, the song is disagreeable in early morning, there is, later in the day, a cheerfulness and happiness about every action of the bird, which, at such a time, makes him an agreeable though noisy companion. After the young are large enough to fly, they collect in flocks, as evening approaches, and fly about in search of roosting places. When they find a good locality they return to it for a number of evenings, thus becoming a great nuisance to the shop-keepers, who sometimes fire roman-candles at them, to break up the roost. By the first of September they are no longer to be seen or heard, having departed to the South.



Pl. XXIX.
EUSPIZA AMERICANA
BLACK-THROATED BUNTING.

PLATE XXIX.

EUSPIZA AMERICANA—Black-Throated Bunting.

The Black-throated Bunting was mentioned by Mr. Audubon, and by Dr. Kirtland in 1838, as a rare bird in Ohio; but for the last twenty years, and perhaps longer, it has been one of the most abundant summer residents of its family, equaling in numbers, at the present time, the Song Sparrow or the Chippy. It arrives from the South during the first or second week in May, and remains until September, each pair ordinarily rearing but a single brood in the season. The old and young assemble in small flocks a few days before the appointed time to depart, as if desirous of associating on their voyage.

LOCALITY:

Upland fields of grass and grain are the favorite building places of this Bunting. In Central Ohio, as many as a dozen pairs often occupy a clover-field of but a few acres, and seem to take especial delight in their surroundings, and to be well pleased with each other's company. In small villages, where the awns are large, it is not an infrequent resident, but in cities it is rarely seen.

POSITION:

The nest is generally placed on the ground, in a slight depression, and is completely hidden by the vegetation which surrounds it. Sometimes it is placed in a bush or stunted tree, after the manner of the Song Sparrow's. Judging from the number of birds observed, and the number of nests found above the ground, not one nest in twenty is, however, so situated. It is probable that occasionally the nest is built above the ground a few inches, in the thick grass, as, Dr. Brewer, in "North-American Birds," says, is almost invariably the case where the nest is upon the prairies. Dr. P. R. Hoy, of Racine, is quoted on the same page as being confident that in Wisconsin these birds never nest upon the ground. The only nests I have seen off the ground were those in bushes or young trees, and, so far as my experience goes, I believe there are, as a rule, but two positions common in Ohio: one upon the ground, the other from one to five feet above it, in bushes or stunted trees.

MATERIALS:

The foundation of the nest usually consists of slender weed-stems and grasses. The superstructure is of similar but finer material. The lining consists of split grass and roller-grass, to which are sometimes added a few long horse- or cow-hairs. Dried leaves, bits of paper, strings, or strips of corn-husks are occasionally used in construction. Nests upon the ground differ from those above it only in having a less quantity of materials in the foundation. Exteriorly, the structure has a ragged and unfinished appearance, but the cavity is neatly rounded and evenly concave. The diameter of the nest measures about four and one-half inches. The diameter of the cavity varies from two and one-fourth to two and three-fourths: average about two and one-half. The depth of cavity varies from one and three-fourths to two and three-eighths: average about two inches.

EGGS:

The complement of eggs is four or five. The shell, commonly highly polished, is a beautiful light blue, a little darker in shade and not quite so greenish as the eggs of the Bluebird. They vary in long-diameter from .73 to .86, and in short-diameter from .55 to .65. An average specimen measures about .60 x .79. Dr. Brewer states, in "North-American Birds," that a common size is .90 x .70. I have never seen an egg of this species so large.

DIFFERENTIAL POINTS:

The nest and eggs together can always be identified with certainty, as no other similar structure contains light-blue eggs measuring between .73 and .90 in long-diameter. The eggs, although resembling the Bluebirds somewhat, can be readily distinguished from them by the deeper tint of the shell; they also average smaller.

REMARKS:

The illustration, Plate XXIX, is taken from a nest built three feet from the ground in a perpendicular fork of a stunted elm, situated near a railroad track, at the edge of a clover-field. It was constructed the last week in May, 1877. Four eggs, measuring respectively .80 x .61, .76 x .59, .74 x .60, and .80 x .59, constituted the complement. The eggs figured represent the color and sizes commonly found. The middle egg is an average specimen in size, shape, and color.

Of all our Fringillidae, there is perhaps none much more interesting than the Black-throated Bunting. The male is clothed in a suit attractive and neat, is trim in form and his dress fits exceedingly well. The clover-field is, above all others, his favorite. He delights to perch upon the top rail of a fence, or upon a weed-stalk, and sing to his mate, who sits upon her treasures beneath the fragrant blossoms. From dawn until dusk he utters at short intervals, first from one post and then from another, but never far from his nest, those pleasantly monotonous notes, which, pronounced, sound like *chip-chip-chē-chē-chē*; and which, translated into English, may mean, as has been suggested: "Look! look! see me here! see!" When thus employed, he seems unconscious of intruders unless his nest is approached too near. He then becomes silent and suddenly disappears, either to hide among the clover or to reappear at a place farther from the nest and again attract you with his song. If followed, he repeats this maneuver again and again, until he judges his home is safe, and that he has fooled you long enough; then he abandons the fun. If now you remain quiet he will soon be heard cheering his mate from the same point from which he was originally started.

The nest, when upon the ground, is very difficult to find, owing to its surroundings, and from the fact that the female can not be walked from the nest. She sits closer than either the Song Sparrow or Bay-winged Bunting, and if forced to leave, to save her life from the collector's foot, she often runs silently away, like the Bobolink, to be flushed at a short distance, where her nest is not. To find the nest upon the ground in a field of clover or timothy, requires skill and a thorough knowledge of the habits of the bird.

The nest, when in a bush or tree, is easily discovered, as but little effort at concealment seems to be attempted; indeed, it is an impossible task to hide so large a structure in such situations as are generally chosen. The female is not often seen, as she slips from the nest to the grass at the approach of danger. Sometimes, however, she may be observed sitting, if caution is exercised. While the nest is being robbed, neither the male nor the female makes the least demonstration. They seem to be unable to appreciate the fact that so base an act is about to be perpetrated, and that their home is about to be broken up. Even when the circumstance is fully impressed upon them by optical evidence, their philosophy seems equal to the occasion. In a few minutes, the male will sing his sweetest, perhaps from the same bush that contained his nest, and the female will assume her former air of timidity and indifference.



PL. XXX.
MELOSPIZA MELODIA.
SONG SPARROW.



PLATE XXX.

MELOSPIZA MELODIA—Song Sparrow.

The Song Sparrow is a common resident; but is not so abundant in winter as in summer. Except for its song, this species would scarcely be noticed by any but the naturalist. Its notes are full of vigor and roundness, and are especially conspicuous in late fall and early spring, and even at times during the winter season, when most birds are silent. At such times the male perches upon the top branch of some small tree, or upon the end of a fence-rail, and sings with a volume equal to his courting song.

Early in April, often before any leaves appear, or before the grass has earnestly commenced to grow, this Sparrow has selected a site and begun the construction of a nest. By such birds three broods are reared. The usual number of broods reared by a single pair, however, is but two—the first nest being constructed in May, the second in July.

LOCALITY:

Although the Song Sparrow nests in almost every locality, they are more partial to low, moist ground, than to uplands. Land not so damp as to be swampy, but cultivated bottom-land near creeks and rivers, which overflow during the rainy season, and leave drift piles scattered here and there among stunted trees and bushes. It is in such places that I have always found the nests the most plentiful. Occasionally nests are built about the border of thick upland-woods, and even several hundred yards in the interior. Farther than this they rarely if ever enter, being born to love the open and cultivated fields.

In towns the Song Sparrow is often a resident of the lawn and garden.

POSITION:

The nests are placed both upon the ground and in stunted trees, bushes, and drift piles. Perhaps two-thirds of all the nests are upon the ground; and when this position is chosen, a slight depression is selected in a grass-plot, often at the root of a weed or bush. When a tree or bush is selected, the nest rests upon a mass of horizontal twigs, or is placed in a perpendicular fork. When built in drift deposit, it is usually near the ground in an opening or cavity, and rests upon old leaves, grass, straw, and other debris left by the water. I have never seen the nest over three feet from the ground, but it is probable that it is often higher.

MATERIALS:

The materials of construction are very similar, wherever the nest is situated. Nests built in trees or bushes require a larger foundation than those built upon the ground; otherwise, they are alike. The foundation usually consists of fine dried weed-stems, often with their roots attached, blades of grass, straws, and sometimes pieces of dead leaves. The superstructure is composed of similar but better selected material, and the lining is made of slender blades of grass, generally split, and hairs. Ordinarily these hairs are from the tail of the horse or cow, are usually black, and so numerous as to cover up the first

layer of the lining. Besides the materials mentioned, bits of paper and rags, strings, and the like, are now and then used in construction. The external diameter measures between four and five inches. The cavity is very regular and smooth, and measures in diameter from two and one-fourth to two and three-fourths inches; the average is about two and three-eighths. The depth of cavity varies from one and one-fourth to two inches; the average is about one and five-eighths.

EGGS:

The usual complement of the first set of eggs is five or six, rarely seven. The second set contains one or two less than the first; and the third set, one less than the second. They are about as uniform in size and shape as the eggs of other birds of the family, but are very variable in coloration. The ground-color of the shell is sometimes as blue as that of the Chipping Sparrow, and sometimes is a muddy brown. Usually it is a faint, dull blue. The quantity of the markings vary from a few blotches and spots to almost a solid color. Some eggs have a well-formed wreath about the crown, either of confluent or distinct blotches, spots, and specks; others are as closely and uniformly speckled as the eggs of the House Wren. Between these extremes, all combinations are common. The color of the marks is always a reddish-brown; sometimes dull and dirty, but ordinarily clear. Deep shell-markings are a neutral tint.

The average size of forty-six eggs is .77 x .59. The greatest long-diameter measures .83; the least long-diameter, .70; the greatest short-diameter, .60; the least short-diameter, .52. The eggs of a set are, generally, nearly the same size and shape, and are marked after the same pattern; but, occasionally one egg is much smaller or larger than the rest, and contains more or not so many marks, and these arranged after a different pattern. This peculiarity does not, however, belong to the Song Sparrow's egg alone.

DIFFERENTIAL POINTS:

See table.

REMARKS:

The illustration represents a nest and eggs, discovered May 15, 1881. It was situated in a slight depression in a bank, sloping to a stream of water, and was protected only by the blades of blue-grass which surrounded it. The position is a characteristic one. The eggs in the nest are so in shadow that the average and extremes in size, color, and marking have been represented on a line beneath.

From Dr. J. M. Wheaton's forthcoming report of Ohio birds, I take pleasure in making the following quotation: "That this bird has a strong attachment to its nest; and, also, that it possesses mental qualities akin to reason, was happily illustrated by a pair observed by me in June, 1875. Their nest had been built upon the ground, within a few feet of the track of the Little Miami Railroad, about a mile west of this city, (Columbus, Ohio.) Some laborers, in clearing away the undergrowth and cutting the grass along the track, had discovered the nest and removed it, placing it very insecurely on a fork of a horizontal limb of a maple sapling, about three feet from the trunk. Instead of deserting the nest, as many birds would have done, or attempting to secure it to the limb on which it was placed, the birds gathered long stems of timothy-grass, and fastened them by twisting the tops together and around a limb extending over the nest, at a distance of nearly one and a half feet. The lower ends of these stems were firmly fastened into the rim of the nest, and other stems were knitted in transversely, forming a pretty, complete basket-work. The whole structure resembled an elongated hollow cone, or inverted balloon. The only openings sufficiently large to admit the passage of the birds, were an entrance over the limb at the fork, and an exit directly opposite. In this remarkable structure the eggs were hatched, and the young safely raised."

In regard to the materials used in the construction of the nest, Dr. Wheaton says: "It is composed mainly of leaves and grass, and lined with fine grass, rarely with horse-hair, perhaps with good reason, for I found two unfortunate females who had ensnared themselves in attempting to use this material."



PL. XXXI.
HARPORHYNCHUS RUFUS
BROWN THRUSH.

PLATE XXXI.

HARPORHYNCHUS RUFUS—Brown Thrush.

The Brown Thrush, or Thrasher, arrives often as early as April the 10th. The nest is usually constructed by the latter part of the same month or the first of May. The last week in May I have frequently seen young birds large enough to fly. May 14th, 1880, I found a number of nests containing the full complement of eggs, and one that contained half-grown young. The second brood is ordinarily hatched early in July. There are, however, always to be found a number of birds that do not build until about the first of June. Such hatch but one set of eggs during the season.

LOCALITY:

Borders of upland woods and cultivated fields with here and there clumps of trees and bushes, are the places most frequented for nesting. Although the Brown Thrush and the Wood Thrush are often found together in woods with thick undergrowth, they do not, as a rule, choose the same localities; the latter generally preferring places that are too secluded, damp, and lonely for the former. Thorn-trees, haw-trees, briars, and stunted elms are the most frequented building sites. Occasionally a nest is to be found upon a flat fence-rail, stump, post, or in a brush-heap. It is not uncommon to find the nest in some small tree or bush along the most public country thoroughfares; and I have often noticed that such structures are rarely robbed. It is but seldom that the Thrasher builds in towns.

POSITION:

The nest is placed either upon or above the ground. When in the former position, it rests in a slight concavity, among grass and dead leaves. Just what numerical proportion such nests bear to the others is difficult to estimate. I believe the position is an exceptional one, and only rarely observed. When the nest is above the ground, it is generally situated in a perpendicular fork formed by a number of small irregular branches, or in some tangle of twigs and stems. Occasionally it rests upon a mat of horizontal twigs, or upon a number of long thorns growing from the trunk of a honey-locust. Still more rarely, it is placed upon the horizontal surface of a worm-fence rail, stump, or post. The third or fourth rail from the bottom is the one usually selected, the nest being situated at the corner where the ends of the rails cross. The nest is seldom more than five, and, ordinarily, but two or three feet high.

MATERIALS:

The foundation of the nest above ground is composed of course sticks, varying in diameter from one-sixteenth to one-quarter of an inch, and in length from two or three inches to a foot or more. The number and size of the sticks vary with the position chosen, sometimes they are out of all proportion to the size of the nest proper; and sometimes they are but few in number.

The superstructure is composed principally of the dead leaves of the trees in the locality, combined with a few slender weed-stems, rootlets, and grass. The lining consists of a rather thick and compact

layer of rootlets, extending well to the rim. The diameter of the cavity varies from three to three and three-fourths inches; average three and one-half. The depth of the cavity varies from one and three-fourths to two and one-fourth inches; average one and seven-eighths. The external diameter of the nest is usually between six and seven inches, but sometimes it is a foot or more. Nests upon the ground usually lack the sticks of the foundation, otherwise they are similar.

EGGS:

The complement of eggs may be three, four, or five. The ground-color of the shell is either white or greenish. The marks consist generally of speckles, sometimes of dots or blotches, of light cinnamon-brown, distributed pretty uniformly and thickly over the entire egg. Occasionally the speckles are more abundant about the crown than elsewhere. The quantity of markings varies from a number of blotches and dots, so far separated as to give a good view of the ground-color, to a confluent mass of speckles. A set of four eggs collected last May is exceptional in that each egg has a well defined wreath about its point. There is not, however, as a rule, much departure from the common pattern in the color or quantity of the markings. The surface of the shell is sometimes polished and sometimes very dull. Eggs from the same set are always very similar. In long-diameter they vary from .93 to 1.18; and in short-diameter from .72 to .82. The ordinary size is about 1.03 x .78. Of forty specimens the longest measures 1.18 x .76, the shortest .93 x .80.

DIFFERENTIAL POINTS:

The nest and eggs together can always be identified with certainty. The nest alone sometimes resembles closely that of the Blue Jay; between the two, there are frequently no points of difference that can be described. Still a practiced eye can readily distinguish one from the other. The eggs, although they bear a general resemblance to those of many other birds, are, when normal, easily identified by their size and shape, together with the color and pattern of their markings.

REMARKS:

The nest illustrated was built the second week in May, 1881, in the fork of a haw-tree, at the edge of a thick woods. The materials of construction consist of sticks, weed-stems, old leaves, and rootlets, as described above. The external diameter of the structure is, on account of the position, a little less perhaps than usual. The diameter of the cavity measures three and five-eighths inches; the depth of cavity one and three-fourths inches. The eggs represent the various sizes, shapes, and markings commonly seen. The middle egg being an average specimen.

The female sits upon her eggs closely, and will suffer herself to be almost touched by the hand before she will fly. If driven from her nest she utters a peculiar alarm note, which at once summons her mate, who proves to be as big a scold as herself. If the nest contains young instead of eggs, both birds become exceedingly troubled, and solicitous for their safety; and exhibit in the highest degree, feeling, sympathy, and love for their offspring. The nestlings can be easily raised by hand, if not taken too young. In the fall following their birth, the males, when caged, begin to sing. At first in low, subdued tones, as if in doubt as to their ability to get the notes correctly. Day by day they become surer of themselves, and their song increases in loudness until some gloomy morning in midwinter, unexpectedly, the melody in all its perfectness is developed, rivaling in sweetness and variety that of the free bird singing to his mate and the rising sun, from the top branch of some friendly tree. How do these solitary prisoners, taken in early childhood from their homes and deprived of the inspiration which nature in woods and fields might incite, learn first to lisp, and then to speak, with unerring accuracy, the language of their parents? Answer me this.



Pl. XXXII.
HELMINTHOPHAGA PINUS.
BLUE-WINGED YELLOW WARBLER.

PLATE XXXII.

HELMINTHOPHAGA PINUS—Blue-winged Yellow Warbler.

The Blue-winged Yellow Warbler arrives the last of April or the first of May, and remains until the second or third week in September. The nest is usually built early in May, and the young are hatched by the last of this month or early in June. I believe but one brood is raised by each pair during the season.

LOCALITY:

Borders of woods, with heavy undergrowth of young trees, bushes, weeds, and grass, either on high or low land, are the most frequented localities for nesting. Weedy banks of small streams, and grassy fence-rows about cultivated fields, are sometimes resorted to.

POSITION:

The nest is generally placed at the root of a bush, weed, or young tree, and is supported by several upright stems, the proper distance apart to accommodate the bird. It is neither upon or off the ground, strictly, as its base rests lightly upon the dead leaves, or such other rubbish as generally surrounds such places. Nests have been reported which were built in grass-tussocks, and others which rested directly upon the ground.

MATERIALS:

The foundation of the nest consists of dead leaves, often unbroken, and a few strips of grape-vine bark. The superstructure is composed almost entirely of grape-vine bark, in strips, varying from three to six inches in length, and from one to four-tenths in width, with these are mixed a few pieces of dead leaves. The lining is also made of grape-vine bark, but it is here split into very fine shreds. Strips of the inner bark of dead trees and split blades of grass sometimes supply the place of grape-vine bark. The lining is quite thick at the bottom, but it only extends up the wall of the cavity an inch or two, and becomes thinner as the rim is approached.

The external diameter of the nest varies from three and one-half to six inches, according to the distance apart of the upright stems between which it is placed. It is rarely regular, measuring often in one diameter two or three inches more than in another. The external depth varies from three and one-half to five inches. It is always difficult to say where the rim really begins and where the bottom ends, as the one is ragged and the other rests upon dead leaves. The shape of the cavity varies with the exterior. It seldom measures in diameter less than two or more than three inches. The depth of cavity is usually between two and one-half and three inches. The structure is unsymmetrical and difficult to measure, as there are no well defined boundary lines. It is indeed wonderful that such tiny birds can manage such rough and crude materials as well as they do.

EGGS:

The complement of eggs is pretty uniformly five. They are pure white, sparingly dotted and speckled

with brown, varying in shade from almost black to a smoky tint, sometimes confined almost entirely to the basal half, sometimes distributed quite regularly over the whole egg. The shell is so transparent, that before the eggs are blown they have a pinkish tint given to them by the yolks. They measure in long-diameter from .62 to .70, and in short-diameter from .48 to .54—average, .64 x .51.

DIFFERENTIAL POINTS:

See table.

REMARKS:

Walking leisurely through the border of a woods, with a thick undergrowth of hazel, blackberry, and wild-rose bushes, on the 15th of May, 1881, I stopped to look about and to listen to the various bird-songs, when, nearly at my feet, a little bird flew out, and was in an instant lost in the thick foliage. The oracle was soon interpreted. After a few moments' search the nest was revealed, containing two eggs. Not being certain as to the identity of the species, I returned the following day and found the bird upon the nest. I had approached within a few yards of the spot and was cautiously peering to get a good look, when she disappeared among the neighboring bushes and began uttering a lispng chirp. These often repeated notes soon brought her mate, who uttered the same cry and seemed much disturbed. Both birds remained near their home during my stay, flying from one bush to another, but more frequently heard than seen. I remained only long enough to see that an egg had been added to the set since the previous day. For two days following I went in the morning to the nest, and found at each visit an increase of one egg. I drove the female from the nest each time, and once handled the eggs, and remained quite a time to watch the movements of the birds. Two days later I shot her as she left the nest—a cruel act, but one which I always resort to in the case of Warblers. For if the skin accompanies the nest and eggs no controversy as to identification can arise. This proved to be the nest and eggs of the Blue-winged Yellow Warbler, and is the one illustrated by PLATE XXXII. It is built between a young elm and several blackberry stems. Its foundation is made principally of oak leaves, and rests upon the dead leaves which are lodged about the roots of the bushes. The superstructure and lining are composed entirely of grape-vine bark. The greatest diameter of the cavity is three inches; the least diameter two and one-eighth. The depth of the cavity is two and three-eighths inches. The five eggs, which it contained, measure respectively .64 x .52, .64 x .51, .66 x .51, .65 x .52, and .64 x .51. The nest I consider a typical one in position, size, shape, and materials.

There is not much known in regard to the breeding habits of this species. In fact, I have been able to find but few well authenticated nests taken in the State. This is more owing to the difficulty of finding the nest, however, than to the scarcity of the birds. In the southern portion of the State they are by no means uncommon, but in the northern section, I am informed by Dr. Wheaton, they are quite rare. Mr. Ridgeway has found a number of nests near Mount Carmel, Indiana, as also has Mr. Jenks, near Norwich, Connecticut, and it is surprising how closely these resemble Ohio nests, in size, material, and situation.



Pl. XXXIII.
PYRANGA RUBRA (Linn.) Vieill.
SCARLET Tanager.

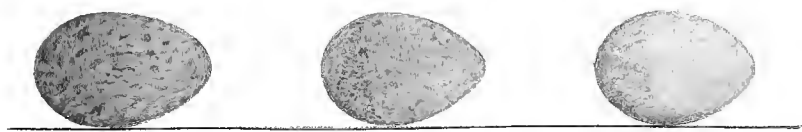


PLATE XXXIII.

PYRANGA RUBRA—Scarlet Tanager.

The beautiful Scarlet Tanager arrives early in May, and departs late in September. The nest is built the latter part of the fifth or first of the sixth month. But one brood is raised by each pair during the season.

LOCALITY:

The nest of this species, although nowhere abundant, may be found at times in almost any wooded district, from the sparsely timbered river-bank to the hillside woods with almost impenetrable underbrush. I have most frequently found the nest in pretty open woods of oak, hickory, and elm trees, situated upon high and level tracts of land. Like most birds that nest in woods, they prefer the border of the forest to the interior. Sometimes they build near roads which pass through or alongside woodlands; and sometimes they build in apple orchards, near farm-houses: but they rarely, if ever, enter towns, being naturally shy and suspicious. They nest indiscriminately in any of the larger forest trees.

POSITION:

The nest is always in a tree, and is between five and fifteen feet from the ground. The usual distance is about ten feet. It is placed either upon a horizontal limb of two or three inches diameter, or at the bifurcation of a smaller branch, and is generally supported at different points of its periphery by little twigs or leaf stems.

MATERIALS:

The walls of the nest are loosely woven and not very thick. The material of the foundation and superstructure usually consists of soft weed-stems or stems of some small trailing vine, such as the wild pea-vine, varying in length from three inches to a foot. The lining is made of pinkish tendrils, such as are used by the Cardinal Grosbeak and Yellow-breasted Chat, slender weed-stems, or light brownish, hair-like rootlets. Some nests are beautifully lined, others have only a little material at the bottom of the cavity. The external diameter varies from four inches to five or six inches, and is often an inch or so greater one way than another. The cavity is generally nearly circular, and varies from two and one-half to two and three-fourths inches. The depth of cavity varies from three-fourths to one inch and three-fourths; ordinarily it is about one inch. Dr. Brewer, in "North American Birds," speaking of this nest, says: "They are usually very nearly flat, five or six inches in diameter and about two in height, with a depression of only about half an inch." Every nest which I have collected has been one inch or more in depth of cavity, and I am led to believe that such very shallow structures as those mentioned by Dr. Brewer are rare.

EGGS:

The complement of eggs varies from two to five. I have never found over three in a set, and this

seems to be the common number; but there is good authority for the statement that as many as five are sometimes laid.

The ground-color of the shell varies from a light bluish-green to almost white. The marks consist of blotches, spots, and speckles of reddish-brown, in various combinations and shades. Some eggs are marked chiefly on the basal half; others are marked pretty evenly over the whole shell, excepting a slight wreath of more or less confluent blotches about the crown, which is present in nearly every specimen. They measure, in long-diameter, from .88 to 1.00—average about .92; in short-diameter, from .63 to .68—average about .65.

DIFFERENTIAL POINTS:

See *Pyrranga aestiva*.

REMARKS:

PLATE XXXIII represents a nest of the Scarlet Tanager taken May 27, 1881, from the branch of an elm tree which overhung a country road. It is composed entirely of soft vine-stems, except the lining, which is made of very clean, fine rootlets. The diameter of the cavity is two and five-eighths, the depth one and one-half inches. The illustration gives a better idea of the arrangement of the materials of construction than can be conveyed by a description. The eggs figured represent the average and extremes in size, shape, color, and markings commonly observed.

During the fall of 1880, I noticed one day, as I was driving, a nest which seemed to be a Tanager's, on an elm limb that projected across the road. In May, 1881, I went to the place to see if the same tree would again be occupied. To my surprise, I found a new nest, with the bird sitting upon it, on the very limb which had contained the nest the previous year. With some difficulty, I drove the bird from her eggs by throwing clods at the limb. She perched upon a neighboring branch and began to peer about, stretching her slender neck to its utmost limit. To make sure that she was not a *P. aestiva*, I shot her. I then procured the nest, which is drawn on PLATE XXXIII, and two eggs far advanced in incubation. The male was not seen, but I was told by a gentleman that he had just seen a Tanager feeding in a hedge about half a mile away. This, I suppose, was her mate.

Part /2

ILLUSTRATIONS

OF THE

NESTS AND EGGS

OF THE

BIRDS OF OHIO

WITH TEXT

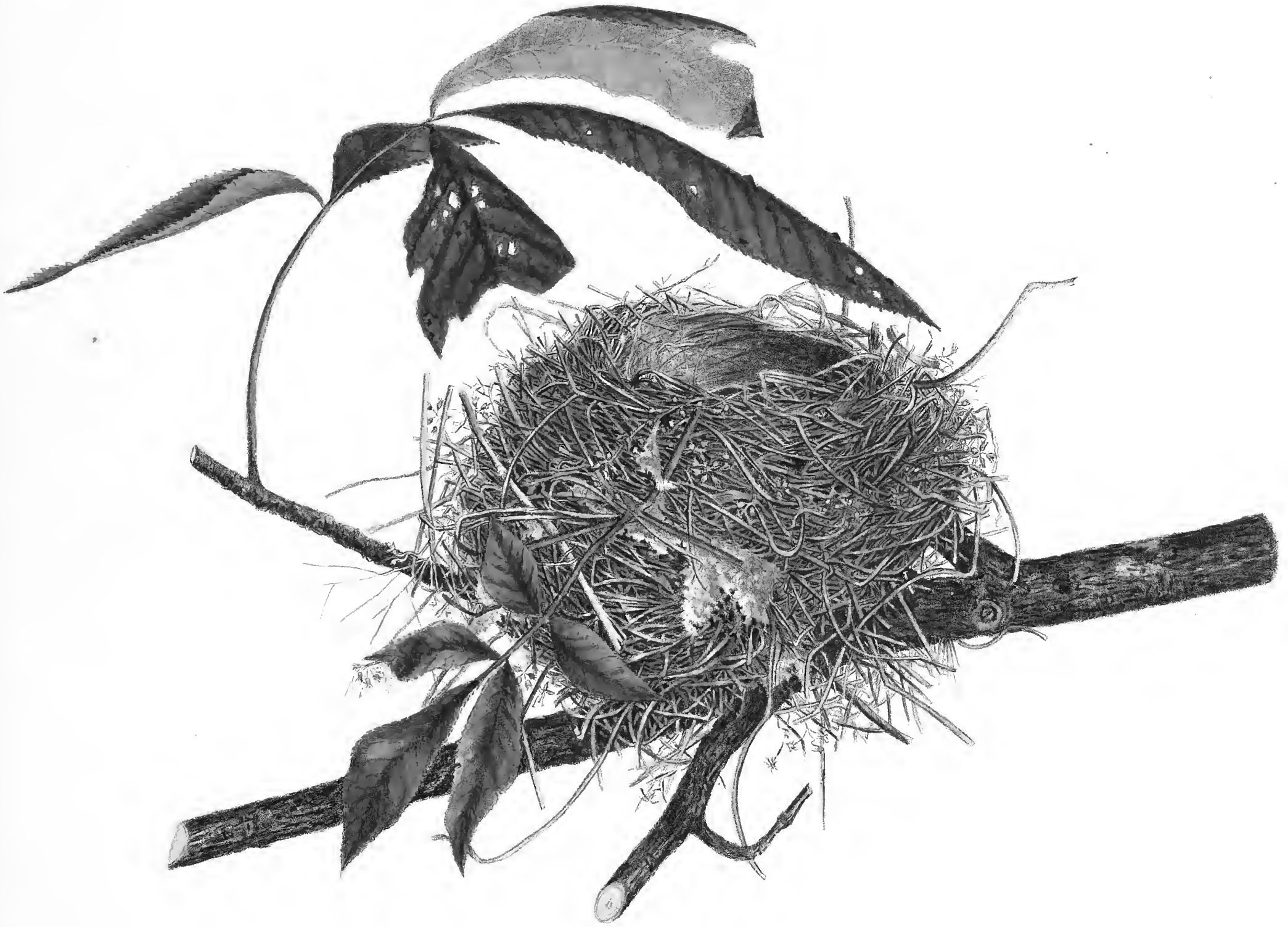


CIRCLEVILLE, OHIO

COPYRIGHTED BY GENEVIEVE E. JONES AND ELIZA J. SHULZE

APRIL

1882



PL. XXXIV.
PYRANGA ÆSTIVA.
SUMMER REDBIRD.

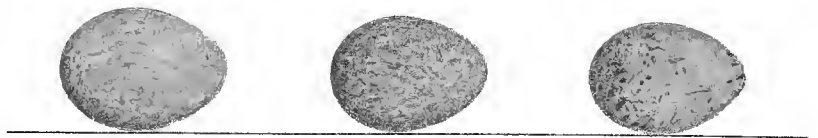


PLATE XXXIV.

PYRANGA ÆSTIVA—Summer Redbird.

The Summer Redbird arrives in the neighborhood of Columbus the latter part of April, and remains until the first of October. Nest-building begins the second or third week in May. The young are generally all hatched by the 10th of June. But one brood is usually reared by a single pair during the season. The female is very difficult to distinguish from the female Scarlet Tanager; the closest inspection being necessary for correct identification.

LOCALITY:

Three miles east of Circleville, on the slope of rising ground which bounds the great trough of the Scioto Valley, is a large tract of woods composed principally of oak and hickory trees of various kinds. The soil is well set with grass, and, at short intervals, small clumps of briars or haw-trees are to be seen. The woods is divided into two unequal sections by a turnpike, and, for the want of fences, is open to the use of such loose horses, cows, and other animals as choose to pasture there. On one side of the road a small stream flows, during the rainy season, between deep-cut banks, and, in the dry summertime, little pools of water may be found along its shaly course. In this locality, I remember having first seen the beautiful Summer Redbird. Every year numbers of them come to this woodland to rear their young, and in no other section of the State, so far as I can learn, are they so plentiful. This locality may, therefore, be taken as a typical nesting place.

The Summer Redbird does not, however, live only in such choice timber-land, nor are they common to every kind of woods. As a rule, they do not nest in other than woods of oak and hickory, and where these trees abound, it is immaterial whether the land is high or low, or whether it is densely or sparsely overgrown with weeds and bushes. In the woods referred to above, I found three nests in about as many hours, one day in June, 1881. All were in hickory trees, as every nest which I remember to have seen has been. In this particular my experience agrees with that of Mr. Ridgway, in Indiana.

POSITION:

The nest is generally placed upon two or three small horizontal branches, and is supported at two or three points on its circumference by small upright twigs. The position selected is usually near the end of a limb, from five to twenty feet above the ground; ten or twelve feet being the usual height. Sometimes it is built among a number of irregular stems, such as occur at the free extremity of a hickory branch.

MATERIALS:

Dead grass of various kinds is the chief material of construction. It is sometimes well selected, and of a light straw-color; at others, it is poor in quality, and dirty-brown in color. The foundation and superstructure are ordinarily inseparable. Occasionally a few slender weed-stems are added to the grass-

straws. One nest before me is exceptional, in that it has a well-marked foundation of rather coarse weed-stems, and measures in external depth five and one-half inches.

Within the dingy and loosely interwoven walls of the nest is commonly a bright and clean lining, composed of slender blades of nicely bleached grass, and split and round grasses, orderly arranged, and forming a smooth and elastic covering to the walls of the cavity. There is but little art displayed in the structure, being so poorly made that the early fall winds blow it from its supports.

The diameter of the cavity of the nest varies from two and three-eighths to two and three-fourths inches; the average is about two and one-half inches. The depth of cavity varies from one to one and three-fourths inches; usually it is about one and one-half inches. The external diameter varies from four to five and one-half inches; and the external depth, from two and one-half to five and one-half inches, being ordinarily about three and one-half inches.

EGGS:

The complement of eggs in every set I have seen has been three. There is, however, good authority for the statement that as many as four or five are sometimes laid. Mr. Ridgway, in Indiana, found three to be the usual number. The ground-color of the shell is light bluish-green, varying in purity and shade in different specimens. The markings consist of blotches, spots, and speckles of yellowish-brown, distributed over the whole egg. About the crown there is generally a slight confluence of the marks forming a faint wreath. The blotches and dots have ragged outlines, and less color at their edges than in the center. The deep shell marks are dull-purplish. The variations that occur are of a nature not easily described, consisting more in minute differences in tints, than in any marked characteristics.

The eggs vary in long-diameter from .85 to .93; and in short-diameter, from .61 to .70. The average specimen measures about .88 x .68. The dimensions here given are taken from five sets.

DIFFERENTIAL POINTS:

A typical nest is so characteristic that it can be readily recognized from the position, materials, and measurements. The eggs resemble closely those of *P. rubra*, and can not always be distinguished from them. Usually they measure less in long-diameter, and are not so pointed, the ground-color is not as bright greenish-blue, and the markings are duller. The nest and eggs together can not be mistaken for that of any other species if the description of each is considered.

REMARKS:

The nest illustrated on Plate XXXIV was found May 30th, 1881, in a hickory tree, in the woods referred to above. In position, size, shape, and materials it is an average specimen, as they occur in Central and Southern Ohio. The eggs figured represent the average and extremes, in size, shape, ground-color, and markings. The center egg being the most typical one.

The nest of the Summer Redbird is hard to find, even when the tree in which it is placed has been located, as it can most always be by a little patience. If there is a Summer Redbird in the woods in which you are, he is pretty sure to see you before you do him, and will at once give the alarm note to his mate, and endeavor to scold you from the premises. Excepting the Yellow-breasted Chat, he is the greatest scold in the woods. His voice is not harsh and loud, on the contrary, it is low and mellow, but there is in it a plaintiveness which expresses, plainer than words could do, the irritation of the bird, and his hearty wish that the intruder was out of his way. The female sits so closely upon her nest that the hand can almost be placed upon her before she will fly. When driven from her eggs she usually flies away silently, and hides among the foliage, but if she has young she will defend them bravely. She utters the same cry as the male when disturbed.



Pl. XXXV.
EMPIDONAX TRAILLI.
TRAILL'S FLYCATCHER.

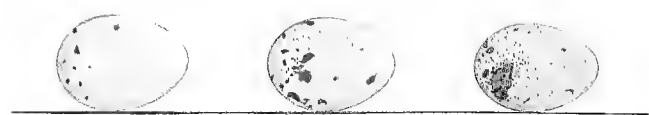


PLATE XXXV.

EMPIDONAX TRAILLII—Traill's Flycatcher.

Traill's Flycatcher arrives in Central Ohio about the beginning of the second week in May, and remains until early in September. Nest-building commences the last of May or the first of June. Occasionally two broods are raised by a single pair.

LOCALITY:

The nest is generally placed in a bush or small tree, in a damp and shady spot, such as an island in a river or creek, or a low piece of woodland. The species may occur in abundance in a locality of only a few acres, and be entirely absent for miles around. A piece of moist land, near a small water-course, overgrown with elders, willows, and such rank weeds as are common to these places, and interspersed here and there with large elms or sycamores, is a typical nesting locality. The majority of nests in my possession have been taken from elders, and my impression is that this is the favorite bush for the site, and next in choice is the willow. I have never found the nest in upland woods, such as is frequented often by the Acadian Flycatcher. It is probable, however, that such timber-land is sometimes selected.

POSITION:

The nest is almost always built in a perpendicular fork formed of two or more small branches, and is never but a few feet above the ground, the average distance being somewhat less than that given for *E. acadicus*. When in an elder bush, its height is between two and five feet; but when in a willow or small tree it is usually double this distance. Nineteen nests out of twenty-one examined were placed in perpendicular forks; the remaining two were built upon horizontal branches, and were supported at the side by several small upright twigs.

MATERIALS:

The foundation and superstructure ordinarily consist of flaxen fibres from the inside bark of dead trees and weeds, mixed with a few blades of grass and pieces of slender weed-stems. Some nests are made of flaxen fibres alone, tightly felted, and are very tidy in appearance, and some are made almost entirely of grasses and weed-stems; these are much rougher externally. In fact, the compactness and neatness of the nest bear an inverse ratio to the quantity of grasses and weed-stems that are mixed with the fibres. Whitish pieces of felt-like material, composed of plant-down or very fine fibres, are frequently to be seen hanging loosely about the rim or from the sides of the nest; and pieces of rag or paper are sometimes utilized in construction. Occasionally a nest is seen that, although compact and well made about the rim, is very loose and scraggy about the base, having long grass or fibres hanging several inches below the lowest point of support. The lining is most frequently made of narrow or split blades of soft grass and pieces of roller-grass in various proportions, to which are sometimes added shreds of grape-vine bark, a few horse-hairs, feathers, or plant-down. Of the twenty-one nests examined, one con-

tained, in the lining, a soft feather from the Great Horned Owl; two, feathers from the breast of the builder. One was very neatly covered at the bottom of the cavity with white plant-down; one was lined almost entirely with black horse-hair; and five contained a considerable quantity of grape-vine bark; the remainder were lined with grasses alone. The diameter of the cavity is pretty uniform, averaging about two inches. The measurements of fourteen nests are as follows: least external diameter, two and three-fourths inches; greatest external diameter, three and one-half inches; least external depth, two inches; greatest external depth, four inches; least diameter of cavity, one and seven-eighths inches; greatest diameter of cavity, two and one-eighth inches; least depth of cavity, one and three-eighths inches; greatest depth of cavity, two and one-half inches. An average specimen measures about three inches external diameter, by two and three-fourths inches in depth; the cavity measuring two inches in diameter, by one and one-half inches in depth.

EGGS:

The complement of eggs is generally three. Mr. Oliver Davie, of Columbus, Ohio, found two sets of four eggs each out of eleven nests collected in 1881. Much oftener but two eggs are laid. The ground-color of the shell is a delicate buff or creamy tint when blown. The markings consist of large blotches, spots, and speckles, of various shades of chocolate-brown, varying from a light wash to almost black. The number of marks ordinarily varies from two or three to fifteen or twenty. Some eggs have but a few blotches, light in tint, but of large area; some have but few minute speckles, almost black; others vary between these two extremes. The markings occur principally about the basal half. Occasionally a plain egg is found. The greatest long-diameter is .74; the greatest short-diameter is .58; the least long-diameter is .66; the least short-diameter is .51, of over forty eggs. The largest specimen measures .72 x .58; the smallest, .66 x .53; an average, .70 x .54.

DIFFERENTIAL POINTS:

The nest of *E. traillii* has often been compared to that of the Summer Warbler, *D. aestiva*, and very aptly, for the similarity is great in certain instances. As a rule it can readily be distinguished by its larger size and different lining. The eggs resemble closely those of *E. acadicus*, and can not always be told with certainty. They are, however, a trifle smaller, and not exactly the same outline, being less pointed and broader for their length.

REMARKS:

Plate XXXV illustrates a nest of Traills' Flycatcher, taken June 10th, 1881, by Dr. Wheaton, from an elder bush, in a low piece of land beside the Ohio Canal, a few miles from Columbus. It is in size, shape, materials, and position about an average specimen, save the bit of newspaper. The eggs figured represent the average and extremes in size, shape, and markings commonly seen.

In June, 1874, Dr. Wheaton discovered near Columbus, in a piece of low land overgrown with elders, the first nest of this species recorded as occurring in Ohio. The next season numerous nests were found near the same place. The following is quoted from Dr. Wheaton's State Report, now in press: "In one locality, a swamp, in an extensive forest, about four miles east of the city, I found both species together. Traills' Flycatcher, frequenting the swamp, and, when disturbed, flying to the forest trees, while the notes of the Acadian Flycatcher were heard at but a short distance beyond. . . . No bird is more wary when its nest is approached, quitting it as soon as an intruder comes within a dozen yards. I have seldom been able to discover the female on her nest, but, when disturbed, she retires to a safe distance, and utters a plaintive *whit*, expressive of her anxiety. During the breeding season the ordinary notes undergo some change, becoming a louder, deeper, *hojt-te-ar*."



PI XXXVI.
CYANURUS CRISTATUS.
BLUE JAY.



1882

JULY

Part 13

ILLUSTRATIONS

OF THE

NESTS AND EGGS

OF THE

BIRDS OF OHIO

WITH TEXT



CIRCLEVILLE, OHIO

COPYRIGHTED BY GENEVIEVE E. JONES AND RIZA J. SHULZE

JULY

1882

PLATE XXXVI.

CYANURUS CRISTATUS—Blue Jay.

This species is a permanent resident of the State, being especially conspicuous in the winter, when the woods have lost their green leaves and the ground is covered with snow, as their beautiful plumage shows to great advantage against the dark tree-trunks, or the white back-ground. The Blue Jays are also at this season more noticeable on account of the absence of most of our brilliantly-feathered birds. The nest is built late in April or early in May. Two broods are generally reared during the season.

LOCALITY:

The Jay-bird is not very particular in regard to locality. Wherever a food supply is offered, there they may build. In the country, the most frequented nesting places are thorn-trees, along canals or roads, and large oaks and elms, and other forest trees about the borders of woods, or upon the banks of creeks and rivers; but almost any tree (and, according to Dr. Brewer, sometimes a bush,) in almost any location may answer for the site. In towns and about country residences, apple and pear-trees in orchards, and pines and other evergreen-trees in lawns, are the favorite situations.

POSITION:

The nest is generally built in a perpendicular fork, formed of three or more branches, or upon a horizontal limb, at such a point as to receive support from several perpendicular twigs. Any combination of branches, however, that will afford a suitable resting place, may be selected. I have seen two nests built upon long thorns against the trunk of a honey-locust tree. Its distance from the ground varies from three or four, to seventy or eighty feet. Usually it is between ten and twenty feet.

MATERIALS:

The foundation consists of slender sticks or weed-stalks, varying in length from a few inches to a foot or more. Thorny sticks are generally used when they can be had. Upon this bed of twigs is a superstructure composed of mud alone, or mixed with dead leaves, grass, fibres, paper, rags, strings, or feathers, in various combinations and proportions. The lining is made of rootlets matted compactly together, forming a smooth and regular interior. Usually the rootlets are in abundance, and form the rim of the nest. However much the materials of the foundation and superstructure may vary, the lining is always made of rootlets.

The external diameter of the nest usually measures about six and one-half inches, but it may be as little as six or as much as eight inches. The external depth varies from three to four inches. The diameter of the cavity seldom varies more than one-eighth of an inch from four inches. The depth of cavity is commonly about one and three-fourth inches.

EGGS:

The complement of eggs is four or five, rarely six. The ground-color of the shell varies in different specimens from a light shade of dirty ochre to a tolerably dark olive-green; a shade between these two being the commonest. The markings consist of small blotches, spots, and speckles of a darker shade of the ground-color, or, at times, of a yellowish-brown. The deep shell-marks being somewhat purplish. Some eggs are thickly speckled over the entire shell, the marks being confluent in a ring about the crown. Some have but a few spots and speckles, and these principally about the base; while others, and this is the usual pattern, are marked with three or four small blotches, and five or six times as many spots interspersed with speckles, the majority being on the basal half. Twenty-six eggs vary in long-diameter from 1.05 to 1.22, and in short-diameter from .78 to .84. In "North American Birds," the short-diameter is said to be from .82 to .88. The largest specimen before me, measures 1.22 x .79; the smallest, 1.05 x .78. The usual size is about 1.12 x .79.

DIFFERENTIAL POINTS:

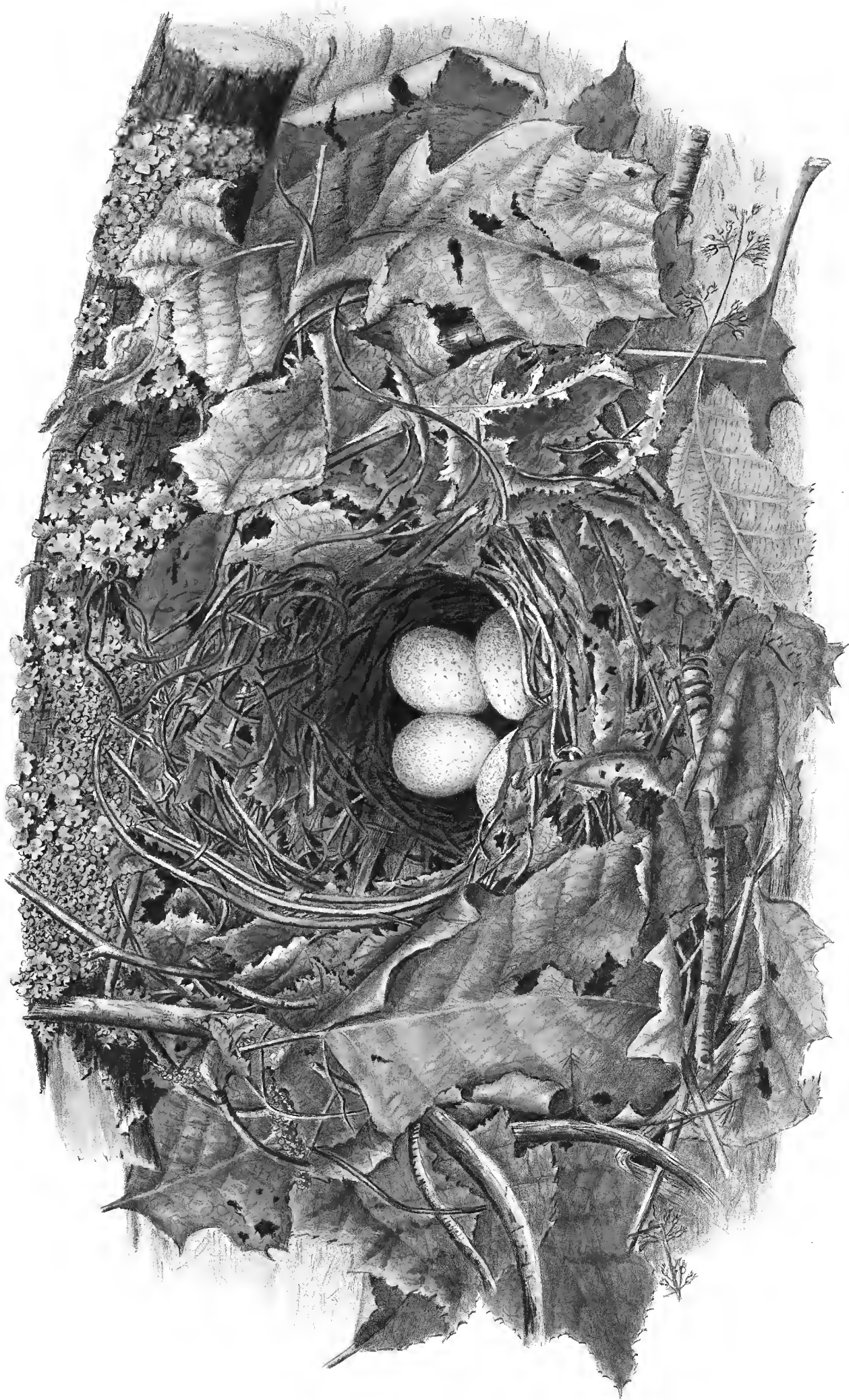
The nest and eggs, either together or separate, have but few points in common with those of other birds, and may always be recognized if attention is given to the above description.

REMARKS:

The nest illustrated was taken from a pine-tree in a country lawn, May, 1880. The thorny sticks in the foundation were selected from the trimmings of a neighboring hedge. In size, shape, and materials, the specimen is characteristic. The eggs figured, were selected from a large number, and represent the sizes, shapes, and colorings usually seen. The middle egg being the commonest pattern.

The blue and white plumage of the Blue Jay, together with his fine proportions, makes him one of the most conspicuous birds of our fauna. His character I can perhaps best portray by comparing him to his near relative, the common Crow, for in his method of thought and action he is very crow-like. In the summer he makes his living by robbing the nests of others, and none of the small forest birds know him but to fear him. He is always active, hopping about from branch to branch, and peering into every cluster of leaves, with his keen and cunning eye, in search of some home to despoil. The eggs of the Dove and Yellow-billed Cuckoo are not too large for him, and I am inclined to believe he would peek into common hen's eggs, if the opportunity afforded. A small egg he will carry from the nest to some safe place, and there suck the contents. I do not know from observation that he disturbs the nestlings, but it is probable that at times he does. Although an arrant coward when plundering a nest, and afraid of the smallest bird, he assumes great courage, and generally leads the rag-tag and bob-tail militia in their daytime attacks upon the Great-horned Owl. And it has frequently occurred to me, from the twinkle in his eye, that he is fully conscious that he is making a fine reputation for valor, where there is not the slightest danger. In captivity his shrewd and mischievous nature readily develops, and may be directed easily into various channels. If taken young and properly reared for, he makes a rare pet, and may be the source of much amusement. He will steal every thing he wants to eat, and any thing he wants and can not eat, he will carry off and hide. But to counterbalance this natural depravity, he is a pretty fair songster, his notes being low and sweet, and in great contrast to his common cat-calls.

The male and female are very solicitous for the safety of their nest and eggs, and one of them is always pretty near by. When the young are hatched the parents frequently show considerable courage in protecting them from enemies. I have known a female to follow a person carrying away one of her young nearly a mile, fighting him all the way. Notwithstanding the general meanness of the Jay Bird, some good things may be said of him, but, as the space at my disposal is consumed, whatever of excellence he possesses is left for the genius of the reader to discover.



PL. XXXVII
PIPILO ERYTHROPHthalmus.
CHEWINK.

PLATE XXXVII.

PIPILO ERYTHROPHthalmus—Chewink.

The Chewink, Ground Robin, or Towhee, as this species is variously called, usually arrives from the South about the second week in April; stragglers are, however, sometimes seen in February and March. The nest is constructed early in May. The 21st of May, 1880, I saw young Chewinks large enough to fly. It is not uncommon for two broods to be reared by a single pair, and possibly this may be the rule. Between the second week in October and the first of November, they depart for their winter home. A few linger some weeks or even months later. December 24, 1879, I saw a male bird, and on several occasions I have seen them nearly as late. It is probable, that in a favorable locality and season, a few may remain during the winter.

LOCALITY:

The nest is always built in timberland, preferably that strewn with brush-heaps and covered with undergrowth. High, dry wood is the Towhee's choice, still, the nest is sometimes found even upon such low, damp ground as a river-island.

They do not frequent the edge of woods as much as most birds, but seem to like the depth of the forest better. Sometimes a pair will build among a small clump of trees standing in a cultivated field, and sometimes about land on which the trees have recently been felled, but not yet brushed. They do not often build about country dwellings, and are rarely seen in towns. Their absence is due more to a want of a suitable locality than to any timidity or fear of man.

POSITION:

The nest is placed upon the ground, in a slight natural depression, at the root of a bush or a clump of grass, or a concavity is scratched among the dead leaves under a brush-heap, a fallen tree-top, beside a small fallen limb, or a low bush. The rim of the nest is usually on a level with the surrounding surface.

MATERIALS:

Dead leaves of the oak, or such trees as are common to the locality, compose the bulk of the nest. They are selected and arranged when damp and pliable. The cavity is lined with slender vine-stems, such as are used by the Yellow-breasted Chat and Cardinal Grosbeak. Generally a few weed-stems, straws, blades of grass, leaf-stems, strips of grapevine-bark, or rootlets are intermixed with the leaves of the foundation and superstructure, and sometimes a few blades of grass or strips of grapevine-bark with the lining.

The structure, although not very compact, can, with care, be lifted from its position without falling to pieces. The external diameter and depth are not very constant, but ordinarily they do not vary much from five and one-half and three inches respectively. The diameter of the cavity does not often vary more than one-fourth of an inch from three inches. The depth varies from one to two and one-half inches.

EGGS:

The number of eggs in a nest varies from three to five, four being the usual complement. They measure in long-diameter from .88 to .98, and in short-diameter from .68 to .80. The largest of twenty specimens is .96 x .72; the smallest, .89 x .68. The usual size is .93 x .70. The ground-color of the shell of a fresh egg, when blown, is white, slightly bluish-green tinted; but the markings, which consist of small blotches, spots, and speckles of brown-madder, are sometimes so abundant as to nearly if not entirely conceal it. The deep shell-marks are obscure purplish. Usually the shell is well spotted and speckled, but the ground-color is apparent, except about the crown, where there is a slight confluence of the marks. Some eggs have a few irregular, small blotches and round spots upon them, but small, oblong spots and speckles are the rule. There is not much variation in pattern, although there is considerable difference in the depth of color of the markings in different specimens.

DIFFERENTIAL POINTS:

The locality, position, size, and materials of the nest, together with the size, shape, and markings of the eggs, will always insure identification. But even where these data are not all known, and the nest and eggs are separated from each other, identification is still possible. The former may be recognized by its size and lining; the latter, by the characters described above. There are several eggs of nearly the same size and pattern as the one under consideration, among which, may be mentioned the Cow-bird's, the Chat's, and certain forms of the Cardinal Grosbeak's. The first averages less in size, and the markings are not so pinkish, being brown inclined to yellow instead of to red. The Chat's also average smaller. The markings are of exactly the same tint, but of a larger pattern. The eggs of the Cardinal Grosbeak average larger, but small specimens are met with, which differ in tint only, from some eggs of the Chewink. These differences, while minute and not easily described, are emphatic. They are better presented in the illustrations than by a word description.

REMARKS:

The illustration, Plate XXXVII, represents a nest and four eggs of the Chewink, taken 1879, from an upland woods, dense with underbrush. It was situated in a bank of dead leaves, which had drifted and lodged against a small lichen-covered branch, part of a dead limb that the winds had blown from a tree near by. Two eggs are figured below, giving the full outline, and the common sizes and markings.

The male Chewink is much more frequently seen than the female, partly because he is a noisy fellow and of conspicuous plumage, but mainly, I think, because his partner is much more retiring in disposition. The nest is very difficult to find on account of its resemblance to its surroundings, and because search is generally made for it in the wrong place, the hunter being misled by the uneasy actions of the male. He is a clever cheat, and wherever he happens to be found during the nesting season, he behaves as if his home was within a few yards, when, in fact, it is rare to discover him within considerable distance of his nest.

The nests which I have collected I have usually found by walking up the female, and, until she would give the alarm note, the male would keep quiet and out of sight. Indeed, he seems to avoid going too near the nest, unless the female calls him. Both parents show great anxiety and solicitude for their nest and eggs, and especially for their young. I have seen the female feign lameness when driven from her nest. The young run about some days before they can fly, and follow their mother wherever she calls. They are very active little chicks, and slip along through the grass and brush so rapidly that it is almost impossible to catch them.



PL. XXXVIII.
STURNELLA MAGNA.
MEADOW LARK.

PLATE XXXVIII.

STURNELLA MAGNA—Meadow Lark.

Meadow Larks remain in Central and Southern Ohio throughout the winter, but are not so abundant at this season as during the summer. In the winter of '79 and '80, which was noted for its severity, the mercury frequently being many degrees below 0° F., I several times flushed Larks from the snow-covered fields, where they had alighted and remained motionless, or were snowed in, as no tracks could be found.

It is probable that these winter residents breed here instead of going farther north as is the custom with some species, the individuals being only apparently resident during the year.

The nest is sometimes built very early in April, and soon after the eggs are deposited; but the usual time for nesting is the last week in April or the first week in May. Very often two broods are hatched.

LOCALITY:

The nest is placed in any open field of grass or small grain. Fields of wheat, timothy, and clover are the most frequently selected. Sometimes it is built in the tall grass along a fence, or in an orchard; and sometimes it is in a clump of grass in a piece of very open woods. Occasionally the nest is near a country dwelling, but, as a rule, it is a considerable distance from any house, and is rarely, if ever, built in town.

POSITION:

Usually the nest rests in a slight hollow in the ground, found among the growing wheat or grass, with no particular effort at concealment; but sometimes it is well hidden by a tussock, clump of weeds, or a small bush. The bottom of the cavity is generally about on a level with the surrounding surface.

MATERIALS:

Grasses and straws are the chief materials of construction. Occasionally pieces of slender weed-stems and strips of weed-bark are used. The grasses are generally long blades of blue-grass or timothy. The structure is well interwoven, and is the same within as without, except that the cavity exposes a little better quality of material than the exterior. The majority of nests are more or less perfectly domed, or, in other words, the entrance is at the side, the cavity being roofed. Sometimes a walk leads through thick vegetation to the doorway. The cavity in the domed or roofed nest is nearly semi-spherical, and measures about three and one-half inches. In open nests its diameter is about the same. The walls vary in thickness from three-fourths to two inches in different nests, and even in different parts of the same nest.

EGGS:

Four or five eggs constitute the complement. The ground-color is white, very faintly tinted at times with greenish-gray. They are marked with blotches, spots, and speckles of light yellowish- or pinkish-brown distributed over the entire shell, but most abundant about the base, where sometimes they are

confluent. Some eggs are marked with small spots or speckles alone. Deep shell marks are fainter and somewhat purplish.

In long-diameter they measure from 1.00 to 1.15. And in short-diameter from .76 to .82. The largest specimen in four sets is 1.13 x .80; the smallest, 1.00 x .78. The ordinary size is about 1.05 x .79.

DIFFERENTIAL POINTS:

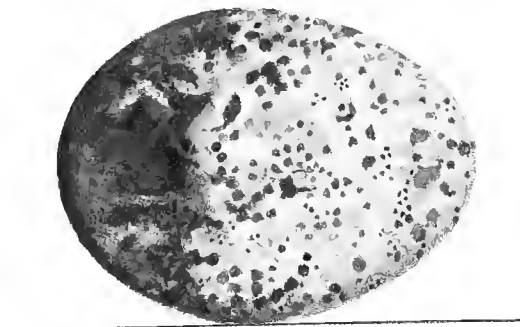
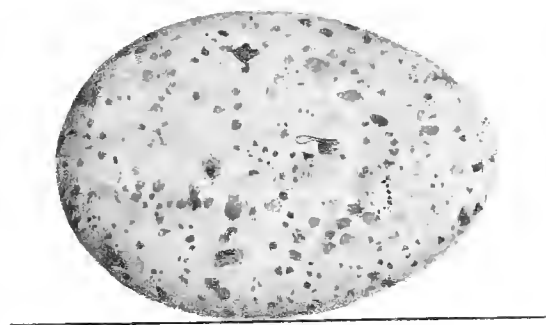
The nest and eggs, when together, can always be easily recognized by the characters given above.

REMARKS:

The illustration, Plate XXXVIII, represents a nest and four eggs, taken April 6th, 1882. The nest is a good specimen of the domed variety. It was lifted from its position in a clump of grass, and placed upon the ground near by, so that the drawing would show its composition and construction to better advantage. Below, two eggs are figured, representing the usual sizes and markings; as those in the nest are somewhat foreshortened and obscured.

The Meadow Lark is a very shy bird at all times, and particularly during the nesting season. They will rarely go near their nest when conscious they are observed, and they are always on the watch for danger.

The best way to find the nest is to walk back and forth slowly through the field in which it is supposed to be, with the expectation of flushing the bird from her eggs. Faithful watching may discern the birds at work building, and an experienced person may detect the nest by sight. The female sits closely, and will not leave her home without she is in imminent peril. When driven from her nest she often feigns lameness in leg and wing, and will flutter about, uttering a low cry in imitation of that of the young in distress, hoping in this way to divert the attention of the intruder, by tempting him to catch a wounded bird, apparently an easy thing to do. Larks are partial to country roads, and, at all seasons, are frequently seen perched upon the fence or feeding in the road-side grass. During the time the female is sitting, the male generally keeps guard from some neighboring bush or fence, occasionally singing a medley or uttering a few cheering notes. If approached he betrays anxiety by an uneasy jerk of his tail, and when he considers the danger past, sometimes he will fly directly to his mate upon the nest, perhaps to tell some trumped up story of his courage. In this way I have several times been led to nests. Only the other day, while driving through the country in a buggy, I passed a Lark, sitting upon the fence, that appeared to me more uneasy than necessary. He did not fly, however, until the buggy was well past, then he went straight to a little knoll in a wheat-field about fifty yards from the road. I stopped the horse, and walked to the spot, when, suddenly, from almost under my feet, two Larks flew up and off, and there, within a foot, was a beautiful open nest and five eggs.



PL XXXIX Fig 1.
PANDION HALIAETUS CAROLINENSIS.
FISH HAWK.

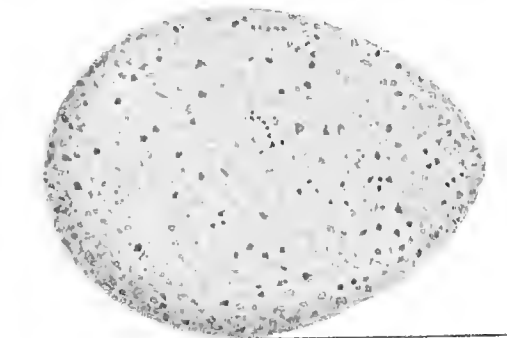
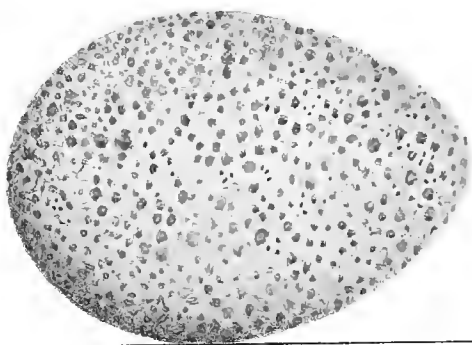


Fig 2.
MELEAGRIS GALLOPAVO AMERICANA.
WILD TURKEY.

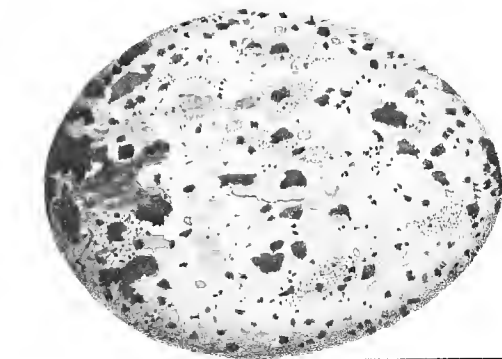


Fig 3.
CATHARTES AURA.
TURKEY BUZZARD.

PLATE XXXIX.

Fig. 1. PANDION HALIAETUS CAROLINENSIS—Fish Hawk.

The Fish Hawk, or American Osprey, is an irregular spring and fall migrant throughout the state. They are generally seen in pairs, but in the fall, occasionally in families. A few that enter the state in the spring do not go beyond its borders to breed, being induced to remain by the good fishing afforded in the lakes and large rivers.

LOCALITY:

The nest is placed always in a tree near the supply of food; and, as fish constitute the sole diet of this species, it is usually found near some considerable body of water. Along the shore of Lake Erie pines and oaks furnish the usual sites, but the sycamore and other hard-wood trees are occupied about reservoirs and rivers.

POSITION:

Dr. Brewer, in "North American Birds," says the nest is always built in the top of a tree. Sometimes it is many feet above ground, and sometimes it is in a small tree not more than twenty or thirty feet high.

MATERIALS:

The nest is made entirely of sticks. These are gathered from the ground, and are as large and clumsy as the bird can manage. They are interwoven into a strong platform about three feet in diameter, and the first season about two or three feet thick. The same nest is occupied for a series of years, and each season a new lot of sticks is piled upon the old structure until in time it becomes five or six feet in height.

EGGS:

The number of eggs in a set varies from two to three. The ground-color of the shell is creamy white. The markings consist of large blotches, spots, and speckles, varying in different specimens from a wine-red to purplish-brown, but usually a tolerably pure brown-madder. The deep shell-marks vary from a faint blue-gray to smoky-brown, according to the depth of the color beneath the surface.

No particular pattern can be described as usual among eggs so variable. Sometimes the shell is entirely washed with brown, and sometimes there are but few spots upon it. The color of the markings is the only thing of any uniformity about them. They measure in long-diameter from 2.20 to 2.60, and in short-diameter from 1.75 to 1.90. A common size is 2.35 x 1.80.

DIFFERENTIAL POINTS:

There is no other nest and eggs with which this is at all likely to be confounded.

REMARKS:

The eggs figured were selected from several dozen specimens taken on Long Island, as representative of the variations which occur. The center one is probably the commonest size, shape, and pattern of marks.

The nest of the Fish Hawk I have never been able to find. There is, however, no doubt that they build sometimes in the northern portion of the state, and also along the Ohio River and in the neighborhood of the Licking and St. Mary's Reservoirs. The above, respecting locality, position, and materials, is entirely compiled.

I have frequently seen the Osprey, singly and in pairs, fishing in the rivers for suckers, and on one occasion I was greatly astonished to see the height from which the bird would plunge into water not more than three feet deep. Three dives were made before a fish was captured. Each time the Osprey descended at least one hundred feet and perhaps more, like an arrow, and struck the water with a sharp thud and disappeared from view for several seconds. The last time he came up I thought him hurt, as he extended his wings on the surface and remained motionless for a moment, then, with great effort, he arose from the water and in his talons carried, head foremost, a sucker over a foot long. At another time I found an old bird feeding her young. They were full grown, and were perched upon the top branches of a large sycamore tree a few hundred yards from a river.

H. D. Minot says, in "Land and Game-Birds of New England:" "They are well known frequently to migrate and build their nests in companies, to remain mated for life, and to feed their young longer, even more abundantly, than any other hawks. Though repeatedly robbed by the tyrannical eagles, they continue to fish undisheartened, and are said never to feed in any other way. . . . The Fish Hawks are very spirited, and have been known to wound seriously intruders upon their nests, which, by the way, they are said by Wilson to repair in autumn to withstand the winter."

PLATE XXXIX.

Fig. 2. MELEAGRIS GALLOPAVO AMERICANA—Wild Turkey.

In February the Wild Turkey hens separate from the flock formed the previous autumn, and each mates with some chosen gobbler. In April the nest is constructed and the eggs deposited. Incubation lasts four weeks. But one brood is reared during the season.

LOCALITY:

The locality generally selected for the nest is a dry piece of woods adjoining the bottom-lands in which the winter is passed. Often Turkeys make considerable excursions from their accustomed haunts to some high ground with large trees and thick undergrowth, in which to build and rear their young, away from the gobblers of the flock, and out of the reach, as far as possible, of the hawks and crows.

POSITION:

The nest is placed upon the ground, under the top of a fallen tree, beside a log, in a clump of bushes, or some such place that offers the proper protection and concealment.

MATERIALS:

The nest shows but little art, and occupies in construction but little time. A slight hollow is scratched in the soft loam, and this is covered with dead leaves, so as to make a dry, soft concavity in which to place the eggs.

EGGS:

The complement of eggs varies from ten to twenty. Sometimes thirty or forty eggs are found in a set, but in such cases probably two or more hens occupy the same nest.

The ground-color of the shell is a light dirty buff. The markings consist of spots and speckles, rarely blotches, of a darker shade of the same color or yellowish-brown. They are distributed over the entire shell, but are most abundant about the base, where they are also sometimes larger, darker color, and at times slightly confluent. Nearly every egg has upon it a group of spots larger and darker than the rest, and while this generally occurs at the base, it may be upon any part of the shell, or there may be two or three such groups. They measure in long-diameter from 2.30 to 2.80, and in short-diameter from 1.70 to 1.94. The usual size is about 2.50 x 1.88.

DIFFERENTIAL POINTS:

The nest and eggs of the Wild Turkey can be easily identified; the former by its position, materials, and size; the latter by their dimensions, shape, and markings.

REMARKS:

The eggs illustrated, Plate XXXIX, fig. 2, were taken in Morrow county, in the spring of 1881, and purchased by Mr. Oliver Davie, of Columbus, Ohio. They represent the usual variations in size, shape, color, and markings.

The following remarks in regard to the habits of this species have been prepared, at my request, by my father, Dr. Nelson E. Jones.

The Wild Turkey is by far the most valuable and interesting of the birds indigenous to this continent. It surpasses all others in size, in beauty, and in delicacy of flesh. It has also, by successful cultivation, become an important article of food in almost every part of the world, and stands high at the head of domestic fowls.

The Wild Turkey, like most animals, has quite strong attachments to place, and in sparsely settled countries, and where subsistence can be obtained, seldom quits accustomed walks, or leaves the district where raised, but remains and breeds in the same locality from year to year. In the spring the sexes separate and occupy different portions of the forest, the gobblers going their rounds together, and the hens keeping more or less by themselves.

When the female builds her nest she exercises wonderful care and precaution to keep the secret from the males and depredators. She approaches the place with apparent indifference, but always by a circuitous route, differing with each visit, and when quitting the nest covers the eggs with old leaves and other light material common to the locality. The faculty of caution and desire to keep the nest secreted by false approaches, and to conceal the eggs by covering, is not entirely eradicated by domestication. I have frequently observed similar manifestations in the tame Turkey, and have often known them to cover their eggs after the fashion of the tame Goose.

When several broods are hatched by Wild Turkeys of the same family, they soon become associated as one responsibility, each mother giving alike attention to the united flock. In the fall, the young and old, male and female, come together and so continue throughout the winter. They subsist upon seeds, grain, nuts, berries, and insects. They seldom, if ever, roost two consecutive nights in the same locality; yet, by some plan, forethought, or design on the part of the leader, they always have good accommodations, although seeming to put up wherever dark overtakes them. They generally select the tallest trees and, when the foliage is on, roost upon the topmost cluster of twigs and leaves, letting themselves down among the small boughs in a way that quite conceals them. When the leaves are off, they take to great limbs, rough projections, and places adapted to concealment as best they can find among the branches of the largest and oldest trees; and as a measure of additional security, disperse themselves over a whole grove of timber, and when any disturbance or indication of danger is manifested at the outposts, it is readily understood, and quickly acted upon by the whole company. If undisturbed through the night, and when it is yet scarcely dawn of day, at the signal *cluck* of the leader, as he lights upon the ground, the rest fly for the spot, and in a few minutes every Turkey presents himself at this roll-call, and, after going through a quick but friendly recognition, all immediately start off on foot for some not far-distant field, in search of food.

It may be a matter of interest to here state, that as late as 1867, Wild Turkeys were quite numerous in many parts of Ohio, and in the fall and winter seasons, previous to this date, it was no unusual thing to see fifty to seventy-five of these birds in a single flock, in almost any wooded country found along the principal water-courses.

For many years I kept up an affectionate acquaintance with six flocks or families of these birds occupying different sections in one county. Their yearly increase preserved their numbers admirably, and every fall, from 1852 to 1866, I was pleased to compliment their size and numerical appearance. But, what is most singular, as well as sorrowful, these birds all disappeared during the summer of 1867, and

since then there has not been a Turkey killed in any of the ranges mentioned. The year previous to their disappearance from this part of the State, an acquaintance reared fourteen beautiful bronzed birds from the eggs of a Wild Turkey, and when a little over a year old they all died; also many tame Turkeys died about the same time with "chicken cholera," and I am inclined to believe the disappearance of the Wild Turkey, in Southern Ohio at least, was dependent upon some epidemic disease.

The Wild Turkey is exceedingly wary, and in disposition contains more of the wild nature than any of the birds of the forest. Even when taken directly from the shell and reared either by hand or with domestic Turkeys, they will, when grown, separate from friends, protectors, and accustomed comrades, and instinctively seek the more attractive life of the forest. Still instances are recorded, tending to show that these birds may at times exhibit, to a most remarkable extent, the faculty of memory and capacity for attachment to former friends and acquaintances, even after long periods of separation. J. J. Audubon relates a case of this kind in a bird he raised, and which, after being fed and fondled for two years, left all for the natural attractions of the forest, and was considered forever lost. But while on a hunting excursion some five miles from home, he saw a fine gobbler cross the path before him moving leisurely along, and he ordered his dog to put the bird up. The dog went off with great speed, and as the animal approached, the Turkey slackened his pace until both dog and Turkey were seen standing side by side, as if holding an interview. Mr. Audubon says he was greatly surprised at their actions, but still more so when he came up and found a mutual recognition of old friends, and that his favorite pet was willing to submit to his wishes and be taken back to civilization.

But no care and kindness can in one or two generations overcome the fear of man and love for the wilds, and it requires many years of skilled schooling to extinguish the instincts for roving, and give to the bird that contented and confiding disposition found in the domestic Turkey. I do not think it possible for a bird that has been reared in a state of nature, and felt the charms of the wilderness, to ever be made reconciled to any other condition in life. I once captured a full-grown young female that had been winged several weeks before. The poor bird was almost dead from starvation and injury, yet life seemed so dear that she cried most pitifully when she found resistance useless. The broken end of the wing was amputated, and the vermin vanquished, and the prisoner placed in a large open pen by the side of the walk to the barn. In the pen was a small box, large enough to afford the timid creature a place of concealment, a roost, and other measures of comfort. Here she was kept more than a year, with every attention to have her become accustomed to a new mode of life and presence of friends around her; yet she would remain concealed during the day, and would not even take food or water excepting at twilight; and then only in the absence of every object of fear. From here I sent her into a county having no Wild Turkeys, and placed her in a garden overgrown with an abundance of bushes of currants, gooseberries, raspberries, etc., interspersed with strawberry plants, and with her a pair of tame Turkeys. Here she remained over two years without manifesting the least inclination to make the acquaintance of her well-raised relatives. A misplaced board on the fence surrounding the place of confinement, finally gave her that boon she so much desired. It was the beginning of summer when she obtained her freedom, and was seen no more until the following spring, when she was noticed several times near the tame Turkeys, and this always very early in the morning. That she could get there at that hour in the day, or get there at all, from the timber-land, near a mile distant, through farms and fences, as she was unable to fly over an ordinary fence, seemed most remarkable. After harvest, she frequented the stubble-fields for food with four well-grown half-breeds as wild as herself. The following spring, she began her visits to her old acquaintances again, but unfortunately, on one of her trips, she fell in with a man and gun and was brought in as a great prize. Indignation is too mild a term to express the feelings of those who looked upon the lifeless form and reviewed the history of the poor unfortunate bird.

The great timidity and continual apprehension of danger found in the Wild Turkey, may at times be turned to the advantage of their enemies, as it may make them more readily bewildered or confused, and lead to their easy capture and destruction. Still, this is not by any means their general reputation, as they seldom show a lack of "presence of mind" under the most trying circumstances, and use all their resources to evade danger most admirably, and by running, flying, and concealing themselves on the ground and in the trees they manage to get out the way of both man and dog quite miraculously.

Some years since, during a severe blow and snow-storm, a large flock of these birds lost their "points of compass," and were driven into the city of Circleville, and, notwithstanding the great number of persons with guns and dogs that were after them immediately, they managed to get back to the woods again with the loss of only three or four of their number. They do, however, occasionally seem to show a very great want of ordinary sagacity, or rather, are sometimes found doing things not at all complimentary to their high reputation for shrewdness. Audubon fired into a flock of about thirty gobblers and killed three, and says: "The rest, instead of flying off, fell a strutting around their dead companions, and had I not looked upon shooting again as murder without necessity, I might have secured at least another." I once witnessed quite as silly a performance, while on a hunting excursion with a friend, near the mouth of Turkey River, in Clayton county, Iowa. It was the first of October, and fires were sweeping off the light vegetation, passing from the Mississippi westward. As if proceeding from the smoky district, and distinct from the roar of fire and wind and crackling of burning vegetation, we heard the voices of a multitude of Turkeys calling as if lost or in great distress. We were soon within twenty yards of the spot, with smoke and fire intervening. We now had a fair view, at every change of smoke and wind, of nearly fifty large Turkeys, standing in a compact circular mass, calling in their loudest tones, and whenever the fire approached sufficiently near to burn any one, that one would jump up in the air four or five feet, uttering their peculiar cry of pain, and instantly the whole mass would undergo silent but rapid confusion. Again they would form the circle, with heads erect, and commence their united and sorrowful utterances. They appeared distressed, confused, and almost paralyzed with fear, and gave no regard to our presence, although much of the time we were in open view. We watched these singular but unvaried movements for considerable time, but did not wait for the conclusion of the matter, as we preferred to see them roasted in another way, and, by signal fired into the black mass. One came tumbling, through the line of fire and smoke, down the hill, directly at our feet, trying to fly with one wing. He soon discovered this could not be accomplished, and put his legs to their most important use. The ground being just burnt over was clear of every thing but trees, bushes, and old logs, and by this and my best efforts I was enabled to keep in sight. After running a mile or more, I noted the disappearance of my leader by the side of a large black log far in the distance. I now slackened my pace most joyfully and reloaded my gun, took a position in shooting distance, and tried to signal my companion. He soon came up, and asked how the race had been decided. I told my story and showed him the log, but he only laughed at my credulity as the result of a florid complexion. We walked up to the place, and, when within a few feet of the spot, we saw the bird stretched out and wedged under the fallen tree almost invisible. We approached, little by little, until both exclaimed aloud "he is dead," and I stooped to pick up the bird, when he went out and off like a race horse, and was out of shot in the thick timber before either of us could recover from the unexpected backset. My friend was asthmatic, so it fell to my lot to again give chase, and a half-mile or more was made in good time; finally I gained on him sufficiently to get a shot, which terminated the race in my favor, leaving the question of sense and sagacity unsettled.

Hunger frequently makes the Wild Turkey less than ordinarily cautious, and taking advantage of this fact, during the winter, by a very simple device called a "pen," many thousands have paid the forfeit of their lives by walking unconsciously into this little parlor. J. J. Audubon describes these pens

as constructed of split timber, but the most successful trappers since, build them of old limbs and broken pieces of saplings, avoiding, if possible, the least appearance of workmanship or design. This pen forms an inclosure ten or twelve feet square, and three or four feet high, and is covered with like material well weighted with heavy pieces of old timber. Into this pen a trench is cut about eighteen inches in depth, and wide enough to admit the body of a large Turkey. The trench begins some distance from the pen and gradually deepens until it passes inside of the inclosure, and then it rises to the surface quite abruptly near the center of the trap. A number of poles are placed at right-angles over the trench where it enters on the inside of the pen, so as to form a bridge. Corn is placed in the pen and in the trench, and sparsely about the vicinity. When the Turkeys find the corn in the trench they follow it, and one by one enter the trap, with heads down, eating as they enter, pressed forward by the hungry ones behind. As soon as those inside are aware of the situation, they try to force themselves through the openings, all the time running around the inside walls of the pen, with heads erect, and passing over and over the trench on the bridge, never looking down or attempting to return by the door which they entered. Mr. Audubon kept an account of the produce of one of these pens which he visited daily, and found that seventy-six had been caught in about two months.

In settled countries, where food is furnished in abundance, and is so easily accessible in the large cornfields, the "pen" is a useless resort, and the dog and gun are the most general means used in their capture. With these, the sport is quite exciting, but requires great coolness, skill, and care to be successful. Early in the morning, just as daylight breaks in upon the tops of the forest trees, is the auspicious time to find them, and with a well-trained dog they may be detected at long distances, and frequently overtaken and scattered in different directions, greatly to the advantage of the hunter. If hard pressed and badly frightened, they will take to trees, to cover, or will drop down anywhere if unobserved, and when in cover will sometimes lay well, and may be shot at over point, similar to Quail and Grouse. Ordinarily, however, they will not admit the presence of man or dog within twenty-five or thirty yards, neither on the ground nor on trees without taking wing, and, at the long distances generally fired at, and on account of the great solidity of their bodies, it requires a good shot and a heavy charge to bring one down dead, and consequently birds frequently go off wounded, and sometimes fly out of sight, and then fall dead, or, they may come down and make their escape, and afterward die from the wounds received. I have repeatedly obtained the object of a shot by following in the line of flight, and have occasionally found them accidentally under these circumstances. I once had a fair shot at a fine gobbler as he was flying across the Scioto river, and the charge turned him over and around, and brought him back and down upon the same side from which he started. Although the nature of the ground did not permit me to see exactly where he fell, yet I felt quite certain he did not come down upon his feet, as I distinctly heard his body strike the ground. I was at the supposed place in a few moments, with a good dog, and searched diligently the drift-wood and brush which were in great abundance in the immediate vicinity, but all to no purpose; he was not to be found. On my way home, and about two miles distant from the place where he came down, the dog made a stand in the woods near the roadside. Expecting to flush any thing but a Turkey, I was greatly surprised to find him pointing the lost bird, dead, warm, and wet with the dew of the morning. Another time, while out with a friend, I heard the report of a gun far down in the timber, and while standing, listening and looking for some manifestation, a fine large gobbler fell dead at my feet. No doubt the hunter loses in this way very many of those he fails to bag, as the remains of birds frequently attest.

Time is also a matter of importance after the bird has fallen, as frequently a very little delay may loose the game. I once fired an "Ely's Green Cartridge, No. 5 shot," at a male bird, and he came down about forty yards distant. I ran up immediately and found him lying motionless, with wings and tail spread, and neck stretched out as if tetanized in the act of flying. I placed my foot on his head and

began reloading the empty barrel. The captive did not remain quiet long, but seemed to change his mind, and made such warlike demonstrations that I was obliged to drop my gun and take him by the neck, but before I could cut his throat, with spurs and nails, he riddled my clothing and tore the flesh on my arms and sides so that the cicatrices remain to this day, a permanent record of the fight. My curiosity was excited to know how this great native of the forest, and princely bird, so suddenly lost his locomotion, and then so soon regained his strength and vigor, and I had the feathers removed carefully for examination of his body, but could find no wound or mark excepting the one I made with the knife.

It is stated by good authority,* that "during winter many of our *real* hunters shoot them by moonlight, on the roosts, where these birds will frequently stand a repetition of the reports of a rifle, although they would fly from the attack of an Owl, or even perhaps from his presence. Thus sometimes nearly a whole flock is secured by men capable of using these guns in such circumstances." But I frankly admit, after testing this matter many times, many seasons, and in many places, that I am no *real* hunter, or that it is no easy matter to shoot them in this way, having never been able to find a Turkey for a target, although in the full enjoyment of good moonlight, and abundance of birds in the timber. It is almost impossible to see one of them by moonlight when roosting, for the reason the mere presence of a person at night, near their roosting place, is sufficient cause of alarm to give to such as have favorable locations, concealment by position, while others more exposed seem aware of their danger, and leave before the hunter approaches within seeing distance. And upon the arrival of the sportsman, and during his movements through the woods, there is nothing to be seen, as they are all well concealed or driven away. This statement is founded upon personal observation and experience, and every attempt of the writer to set it aside by assistants, by increased knowledge, and by additional care, always ended in a delusion quite as ludicrous as driving and bagging snipe by lamp-light. However, upon the principle that if you do not succeed, try, try again, I was persuaded by an old Turkey-hunter to accompany him to a place where he marked the birds going to roost. The night was still, cold, and bright moonlight; the timber consisted principally of sycamore and hickory and was free from foliage. With all our caution, as soon as we entered the timber, Turkeys began flying, and continued to do so far in advance, as long as we followed them, and for a mile or more. Frequently, after scanning a tree most carefully and seeing nothing, a bird would start from the top with an alarming racket. Being easily discouraged, from previous failures of this kind of hunting, I turned my steps in the direction of our wagon, looking all the time for something to shoot at, but seeing nothing; and, when near the place we entered the timber, I sat down on a log to await the return of my companion. He lingered, and, after calling a number of times without an answer, I fired my gun at random up into the limbs of a tall sycamore tree standing on the bank upon the opposite side of the creek, when, to my utter astonishment, a Turkey came flopping and bumping down through the boughs and brush into the water. My partner soon made his appearance, and after hearing my story and seeing my dead bird, agreed that this was the most successful way to shoot Turkeys by moonlight. One other bird which, at another time, I killed by a snap shot while flying across a river, are the only Turkeys I ever succeeded in getting after night. Hunting them in this way may have been quite successful in the early settlement of the country, but in later years, and with me, it has most certainly proved all "moonshine."

* Audubon.

PLATE XXXIX.

Fig. 3. CATHARTES AURA—Turkey Buzzard.

The Turkey Buzzard is common in the summer throughout the state, and even in winter some are usually to be seen in the central and southern portions on days, which, considering the season, might be called warm. The majority, however, go south upon the approach of the first real cold weather, and return as early in the spring as the temperature will permit. The place for the nest is selected the latter part of March, and in a week or two from this time the eggs are deposited.

LOCALITY:

The nest is in a tree or upon the ground beside a tree, stump, or log, not many miles from the place where the pair usually roosts. Most frequently it is in a cavernous sycamore stump, or the hollow in a log or limb, in woods which border a creek or river. Sometimes it is in most unexpected places in dense upland woods, either upon the ground, in a stump, log, or tree.

POSITION:

When the nest is above ground it is usually between five and fifteen feet to the cavity, and sometimes seventy or eighty feet. In perpendicular trunks the eggs are from three to six or eight feet below the entrance, and in horizontal limbs they are, at times, five to ten feet from the doorway.

MATERIALS:

No materials for the nest are carried into the cavity, but the decayed wood, which is usually abundant in the place selected, is loosened and scratched about until a suitable floor is formed to hold the eggs. Nests upon the ground are made among dead leaves and grass, and sometimes small sticks, bark, and moss. No materials are gathered by the bird, and often the natural arrangement of the grass and leaves is not disturbed. It has been stated, by several writers, that bulky nests of sticks and leaves are built upon the ground. In the Southwestern States this may be the rule, but in Ohio no materials for the nest are ever carried by the Turkey Buzzard.

EGGS:

Two eggs are the most I have seen in one nest, and sometimes only one is laid. The ground-color is creamy or greenish-gray; the shell is dull and marked with blotches, spots, and speckles of various shades of chocolate-brown, distributed over the whole egg, but most abundant at the base. They are not often much confluent. Deep shell-marks are purplish. There is but little variation in the markings. In long-diameter they measure from 2.56 to 3.03; in short-diameter, from 1.80 to 2.00. The largest specimen before me measures 3.01 x 1.80; the smallest, 2.58 x 1.90. The usual size is about 2.71 x 1.82.

DIFFERENTIAL POINTS:

The eggs, ordinarily, are so different in size and shape from those of any other species similarly marked, that they can be easily identified.

REMARKS:

The eggs figured represent the average and extremes in size, shape, and markings of specimens I have collected. The center egg is the commonest form.

The Turkey Buzzard is not so plentiful in Ohio as in some of the Southern States. Still, in certain sections they are quite abundant. In Pickaway county there are two roosts at which they congregate every night. As many as two to five hundred may be seen at times. One of these, the Walnut creek roost, has been frequented to certain knowledge for twenty-five years, and, without doubt, much longer. The timber is almost entirely large sycamore. The ground is low, and situated near the junction of the creek with the Scioto river. It is an interesting and curious sight to see the Buzzards, as night approaches, sailing in, from all directions, to rest their wings and bodies from their day's flight.

Whenever one Buzzard is seen, close inspection will generally discern more, for they are gregarious at all seasons. When carrion is found by one, others soon come, until a large flock is assembled. They seem never to be in a hurry to begin a feast, and will often sit upon trees, fences, stumps, or upon the ground, in the immediate vicinity, for considerable time before eating. When upon the ground they move about awkwardly, making a striking contrast with their grace of motion during flight. When they start to fly, they leap into the air with a clumsy jump, flap their wings rapidly until they are some feet above the surface, and then begin to sail in increasing circles.

My friend, Mr. William Stribling, found a nest of the Turkey Buzzard in an old sycamore stump, along a small creek, a few years since, and gave me the eggs it contained. The same stump had been occupied by a pair the year previous, and the eggs were taken. The mother-bird was upon the nest when Mr. Stribling reached down for the eggs. She did not fly nor make any resistance, except to vomit forth an offensive yellowish liquid. Finding this did not drive away the intruder, or having exhausted her supply, she ceased vomiting, and to all appearances was dead. Being pushed over on her side she remained there, and, finding it impossible to make her fly, she was left in the stump.

Dr. Elliott Coues in "Birds of the North-West," says: "When wounded and captured, the Turkey Buzzard warns off its aggressor very effectually by casting up the fetid contents of the crop, but offers no resistance. Several winged birds I have handled remained perfectly passive after this, and even seemed apathetic as they were being put to death. I learned, on one occasion, that they will simulate death. A bird that I had shot—through the lungs, as I judged from the crimson froth and blood that flowed from the beak—appeared dead soon after I picked it up, and I carried it home, some distance, holding it by the legs dangling, perfectly limp. I threw it carelessly down on the ground by my tent, and turned to something else; but, in a few moments, on looking at it again, I was surprised to find the bird I had thought dead had changed its position, and I caught its bright brown eye glancing furtively around. On going up to it its eyes closed, the body relaxed, and it lay as if dead again. I compressed the chest for several minutes, till I was satisfied life was extinct, and then went to supper. But the cunning bird was still "playing possum" and, I suppose, scrambled into the bushes as soon as my back was turned; at any rate it was gone when I returned."

Part 14-15

ILLUSTRATIONS

OF THE

NESTS AND EGGS

OF THE

BIRDS OF OHIO

WITH TEXT



CIRCLEVILLE, OHIO

COPYRIGHTED BY GENEVIEVE E. JONES AND ELIZA J. SHULZE

OCTOBER 1882

JANUARY 1883

INDEX TO COMMON NAMES,

From Part One to Thirteen, Inclusive.

NAME.	No. PLATE.
1. Blackbird, Red-winged.	v.
2. Bluebird.	xii.
3. Bunting, Black-throated.	xxix.
4. Buzzard, Turkey.	xxxix. Fig. 3.
5. Catbird.	xvii.
6. Chat, Yellow-breasted.	xx.
7. Cuckoo, Black-billed.	iii.
8. " Yellow-billed.	xiv.
9. Dove, Carolina.	xxiv.
10. Flycatcher, Acadian.	xix. Fig. 1.
11. " Pewee.	x.
12. " Traill's.	xxxv.
13. Gnatcatcher, Blue-gray.	xxv. Fig. 2.
14. Grackle, Bronzed.	vii.
15. Hawk, Fish.	xxxix. Fig. 1.
16. Heron, Green.	xxvii.
17. Hummingbird, Ruby-throated.	xxv. Fig. 1.
18. Indigobird.	iv.
19. Jay, Blue.	xxxvi.
20. Kingbird.	vi.
21. Lark, Meadow.	xxxviii.
22. Martin, Purple.	xxviii.
23. Oriole, Baltimore.	i.
24. Pewee, Wood.	xix. Fig. 2.
25. Quail.	xviii.
26. Redbird, Cardinal.	xxii.
27. " Summer.	xxxiv.
28. Robin.	viii.
29. " Ground.	xxxvii.
30. Shrike, Loggerhead.	ix.
31. Sparrow, Chipping.	xxvi.
32. " Field.	xvi.
33. " Song.	xxx.
34. Swallow, Barn.	xiii.
35. Thrush, Brown.	xxxi.
36. " Wood.	ii.
37. Turkey, Wild.	xxxix. Fig. 2.
38. Tanager, Scarlet.	xxxiii.
39. Vireo, Red-eyed.	xxiii. Fig. 2.
40. " Warbling.	xxiii. Fig. 1.
41. Warbler, Blue-winged Yellow.	xxxii.
42. " Summer.	xv.
43. " Maryland Yellow-throat.	xxi.
44. Wren, Great Carolina.	xi.



Pl. XL.
ICTERUS SPURIUS.
ORCHARD ORIOLE.

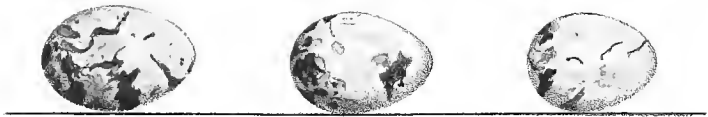


PLATE XL.

ICTERUS SPURIUS—Orchard Oriole.

The Orchard Oriole arrives in Central Ohio about the first week in May, and remains until the beginning of September. Nidification begins the last of May or the first of June. Two broods are frequently reared.

LOCALITY:

Apple-trees and pear-trees in orchards are the most frequented for nesting. Elms, oaks, willows, and other trees growing in cultivated fields, by road-sides, levees, canals, or forming the outskirts of timber-land are also favorite sites. The nest is rarely found in a large tree or in dense woods. It is equally abundant in the hilly country in the southern and western, and the low, flat plains in the central and northern portions of the state. In every section these birds are plentiful.

POSITION:

There are two common positions for the nest. In the first, the structure is placed at the extremity of a limb, suspended between several twigs, as shown in the illustration. In the second, it is some feet from the end of the branch, and is suspended from several upright twigs so that the bottom usually rests upon the horizontal limb that furnishes its perpendicular supports. These are the two usual methods of construction, but there are, of course, various combinations. The distance from the ground is between five and twenty feet, ten feet being about the average.

MATERIALS:

The basket of the nest is woven of long, fresh blades of blue-grass or other long, flat grasses. Fibres, bark-strips, threads, and such like materials as are used by the Baltimore Oriole are seldom, if ever, employed. Within, the nest is generally lined with chicken-feathers, wool, or plant-down. Sometimes there is no lining except perhaps a few soft grasses. Occasionally a few long horse-hairs may be found in the structure. By the time the eggs are deposited the grass has become dried and bleached to a light pea-green, and, by the time the young are ready to leave the nest, it is thoroughly dried and yellowed. The external diameter of a typical nest is about three and one-eighth inches; the external depth three and one-half inches. The cavity measures about two and one-fourth inches in diameter by two and three-fourths inches in depth. There is considerable variation in the thickness of the walls and consequently in the external dimensions, as the dimensions of the cavity vary but little.

EGGS:

The complement of eggs is usually four; sometimes one more or less. The ground-color of the shell is slightly bluish-green. The markings consist of a few large blotches, spots, specks, and irregular lines

of various shades of brown. The lines are usually about the crown, as are most of the spots and specks. The blotches may be on any part from point to crown. The deep shell-marks are purplish. In long-diameter they measure from .72 to .86, in short-diameter, from .56 to .62. The average size is about .58 x .80.

DIFFERENTIAL POINTS:

The position and mode of construction of the nests of our two Orioles are the same, but the materials are so dissimilar that they can each be recognized at a glance. The eggs also, while having many points in common, can generally be readily distinguished. There is with average specimens some difference in size, which, together with the tinted shell and large blotches of those of *I. spurius*, will generally suffice for differentiation.

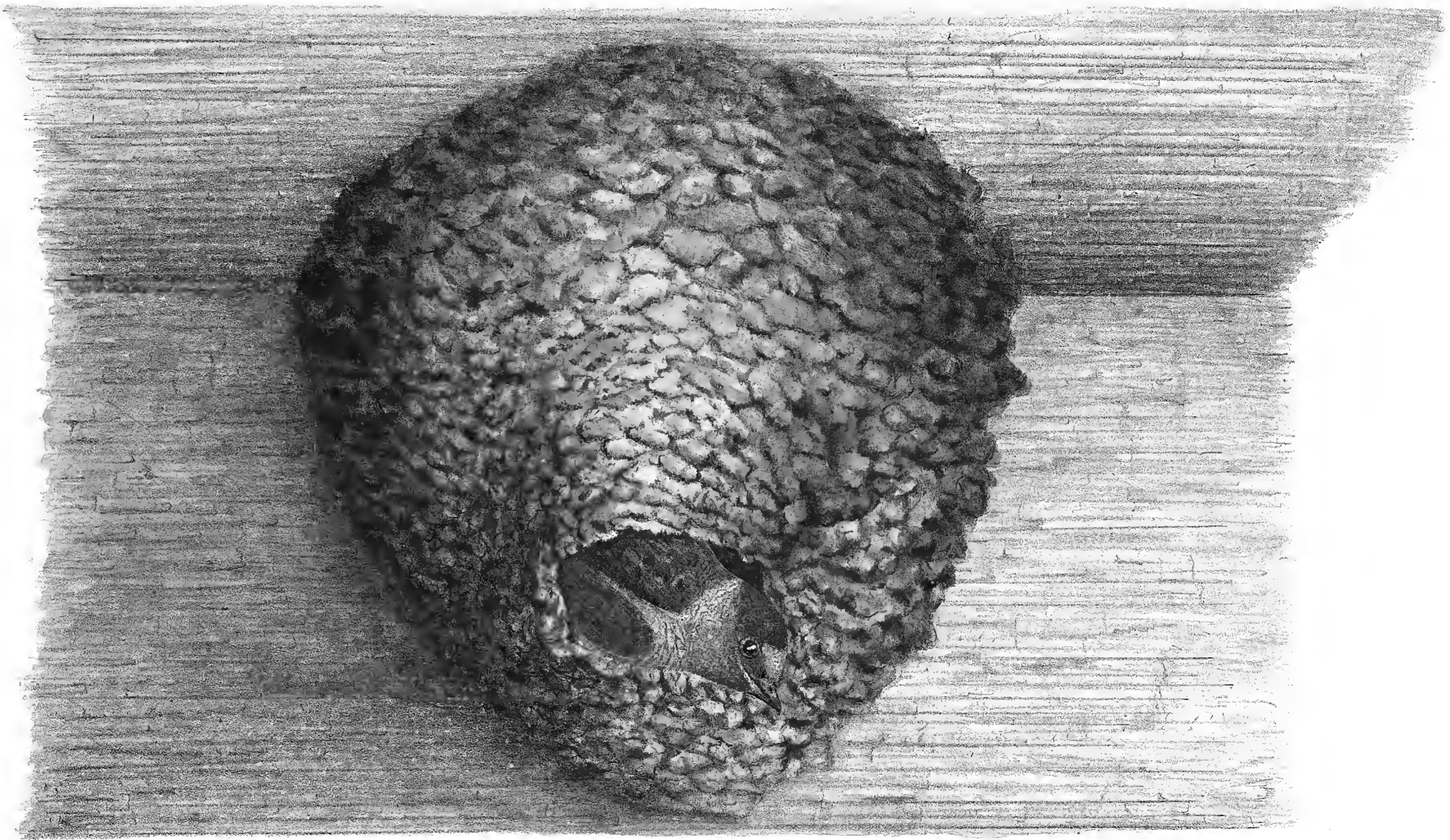
REMARKS:

The illustration, PLATE XL, represents a nest of the Orchard Oriole taken June 1st, 1881, from an apple-tree. It was situated at the extreme of a limb eight feet from the ground. It is an average specimen in position, size, shape, and materials. The eggs show the common sizes and markings.

The Orchard Oriole is a beautiful and graceful bird, and the male is a fine songster. Several pairs of them usually build quite close together, sometimes two nests being in the same tree. During the mating and nesting season, the males fly about rapidly from tree to tree and from branch to branch, repeating at every stop, and sometimes during flight, the pleasant notes of their song. In early morning their voices can be heard above the rest of the feathered tribe with which they associate, few, if any, birds of equal size being able to compete with them in roundness and loudness of tone.

When the young are hatched both parents show great concern for their safety. One of the prettiest objects I have ever seen in bird-life was a home containing five young Orioles. I decided to take two of them, and as the remaining ones would not stay in the nest, having once jumped from it, I brought it along with me and hung it up in my room. At night the little orphans would cuddle into this feather-lined basket and sleep quietly until dawn. They soon became very tame, and grew rapidly on pounded beef and hard-boiled egg. My sister, Genevieve, now took charge of them, placing them in a large cage with a number of other birds. Here they became so gentle and happy that they would fly upon her finger at the door of the cage, and while perched upon one hand would catch flies imprisoned in the other. They soon learned to eye the hands of every one that approached, and, if a hand happened to be closed, they at once became eager to examine it for flies which they supposed it contained. They had a curious habit of inserting their closed bills between the fingers, the wires of the cage, or any crack or small opening, and then endeavoring to open the mouth as if to enlarge the crevice. This they exhibited when very young, and continued to practice as long as observed—nearly three years.

The first fall after their capture, when the time came for their migration, both birds became restless and thin, and finally affected with cerebral disease. They refused their accustomed food and would, without cause, become suddenly frightened and fly around in the cage, screaming in terror at the top of their voices, and, trembling, would fall upon their backs and go through convulsive movements resembling an epileptic fit. My sister nursed them carefully, being very fond of them, but one, after some weeks, died. The other she kept in a darkened room for several months, having discovered that it would remain free from convulsions when excluded from the light. In the spring it seemed to be perfectly recovered, and proved to be a male and a fine songster. At the end of the second year the plumage was perfected. He became so noisy with his song that he was an annoyance, as no one could sleep in his neighborhood after daylight. He was always affectionate and good humored and liked to be played with, but would never permit any one to stroke his feathers. Often he would amuse himself for hours by tying and untying a piece of string, working and singing at the same time. At length, becoming overrun with birds, his liberty was given him, trusting that he might learn to provide for himself.



Pl. XLI.
PETROCHELIDON LUNIFRONS.
CLIFF SWALLOW.

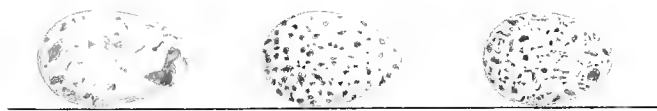


PLATE XLI.

PETROCHELIDON LUNIFRONS—Cliff Swallow.

Cliff Swallows arrive in Central Ohio about the beginning of the third week in April, and remain until about the end of the first week in September. The nest is constructed the last of May or the first of June, or even later if the season is cool and rainy. Two broods are frequently reared.

LOCALITY:

The nests are placed on the outside of a barn or other building, under the eaves or under some projecting timber that will afford shelter. Only occasionally are they built in town. Generally they are to be found under the eaves of an old barn in the country. In no other situation have I ever observed them, but Dr. J. M. Wheaton has seen them upon an old mill, and also under the eaves of a railroad depot at Georgesville.

POSITION:

The nest is adapted in size and shape to the place selected. Sometimes it is fastened to a single surface, and that perpendicular; but generally the side of the barn and the roof, or the projecting end of a rafter, offer two surfaces to which it is attached. Sometimes it is even attached to three or four planes, and often the nests are so crowded together that a common wall divides two interiors. The distance from the ground depends upon the building selected. I have seen nests under a roof so low that they could easily be reached, and again, under the gable end of the highest barn.

MATERIALS:

The nest is constructed of mud alone. No straw, grass, or hair is worked into it, as in the nest of the Barn Swallow. The clay, however, is collected in a similiar manner, and from similiar places, and is worked in the same way, pellet after pellet being laid, one upon another, the construction progressing from the surface of support toward the doorway. The structure when complete is frail, possessing only that strength which is natural to the clay of which it is made. It is difficult to detach them whole, and even when detached, any thing but the gentlest handling will crumble and break them. Usually the nests measure in width between four and a half and five and a half inches; in height between three and four inches, and in antero-posterior diameter between four and six inches. The walls are thin, commonly one-fourth to three-eighths of an inch, thus leaving a large cavity within, the floor of which is generally lined with a few straws, and sometimes feathers or wool. The external outlines of the nests are often irregular on account of the positions chosen. The entrance varies in diameter from one and a half to two inches, and differs much in construction in different nests. Ordinarily, the opening is in the lower half of the structure, and has a slight projecting rim below, which increases at the top so as to form a little roof, thus offering additional shelter from beating wind and rain. Sometimes this projection is

wanting entirely; at others, it is increased in size until it measures several inches, in which case the nest resembles a retort. Such long bottle-necked entrances are the exception.

Under the eaves of a very large high barn, eight miles from Circleville, a colony of Cliff Swallows have nested for several years; and here every nest has a beautiful bottle-necked entrance. A few miles distant is another colony, and, after some years search, I have been unable to find in their habitation a single nest of the bottle-neck pattern. Several times I have observed this difference in style of construction in neighboring colonies without any apparent cause. Rarer still is the nest without a roof. I have seen but one. It contained eggs, and was evidently just as finished, and not broken by accident. In shape it was similar to the lower half of the ordinary nest.

EGGS:

The complement of the first set is four, five, or six; commonly five, often four, rarely six. The second set contains but two or three. They measure in long-diameter from .74 to .87, and in short-diameter from .50 to .58. The usual size is about .55 x .80. The smallest of thirty-six specimens is .53 x .76; the largest, .56 x .86. The ground-color is pure white. The markings consist of spots and speckles, and occasionally small blotches, of various shades of brown, sometimes quite light, sometimes nearly black, but usually between these extremes. The marks are not very abundant; the base contains the greatest number. Frequently they form a wreath, though they are rarely confluent.

DIFFERENTIAL POINTS:

Even the most exceptional nests are characteristic of the species, and can always be at once identified. The eggs, however, resemble very closely those of the Barn Swallow; so closely, in fact, that differentiation is never satisfactory. In a large number of specimens small differences may be detected, but with individual eggs or sets, it is impossible to determine certainly to which species they belong. In regard to the nest, it may be further remarked, that the species under consideration builds out-doors, while the Barn Swallow builds in-doors. Both species frequently occupy the same building.

REMARKS:

The nest illustrated on PLATE XLI was built June, 1882. It was ten feet from the ground, the entrance facing the side of the barn. It was selected from dozens of nests from different colonies, as a typical specimen in size and shape. The female is represented peering from the entrance, just before flying away. The eggs represent the types usually seen, the middle one being the commonest form.

The earliest history of the Cliff Swallow in Ohio is by Audubon. In 1815 he killed several, but it was not until four years later that he discovered their nests in Newport, just across the river from Cincinnati. From this time they have apparently increased in numbers, and much has since been learned about their history. Before civilization afforded suitable nesting places, the species built against rocky cliffs, and, in the far West, this primitive location is still used occasionally. There is no record of nests in such a locality in this State, although it is possible they may have built here as in the West and Northeast. Until the present century these birds were scarce, and, while distributed throughout the United States, their colonies were only to be met with here and there at great distances. But civilization having decreased their enemies and increased suitable building sites, they have greatly multiplied.

With no apparent cause, a colony will desert a locality where they have built for years, never to return. On the other hand, when they have taken possession of a site, no amount of annoyance can persuade them to abandon it. When disturbed they show great uneasiness, flying in circles about the intruder and snapping their bills in angry manner. The winter season loosens their nests, and they fall to the ground.



Pl. XLII.
THRYSOMANES BEWICKI.
BEWICKS WREN.

PLATE XLII.

THRYOMANES BEWICKI—Bewick's Wren.

This species was discovered and named in the year 1821 by Mr. Audubon, but nothing was known of its breeding habits until 1844. According to "North American Birds," Mr. Baird, in this year, discovered its nest and eggs. Mr. Quick, of Brookville, Indiana, found a nest and eggs at that place a few years ago, but so far as I am aware it has never been found nesting in Ohio until the present season (1882). There are reasons to suspect that in the southern portion of the state this species is not an infrequent summer resident, but, if so, it has escaped observation. Where observed, its time of arrival and departure is about the same as the House Wren's, and two or three broods are reared during the summer. The following notes are compiled from various authorities and are doubtless correct for this state as well as for those in which the bird is plentiful.

LOCALITY:

Barns, stables, and out-houses of every description are frequented for nesting. Stumps, brush-heaps, hollow trees, fence-rails, and similar places are also selected at times. The country is preferred to the town.

POSITION:

The nest usually rests upon an horizontal surface, and is, almost invariably, placed in a box, can, mortise-hole, or some snug little nook into which the birds can creep, having in this respect the same habit as the House Wren.

MATERIALS:

Sticks, straws, bark, rootlets, leaves, strings, paper, rags, wool, hair, cobweb, and feathers, in various combinations and proportions, are the materials of construction. The foundation and superstructure are made principally of straws and small sticks; the lining is usually composed of soft feathers from the poultry-yard. The cavity is generally open above, measuring in diameter about two and one-fourth inches and in depth about one and seven-eighths inches. The external dimensions vary with situation.

EGGS:

The complement of eggs varies from four to six or seven. They measure in long-diameter from .60 to .68, and in short-diameter from .48 to .54. A common size is .49 x .64. They are spotted and speckled with reddish-brown, sparingly about the point but plentifully toward the crown, where the marks are often confluent forming a wreath. The deep shell-marks are purplish.

DIFFERENTIAL POINTS:

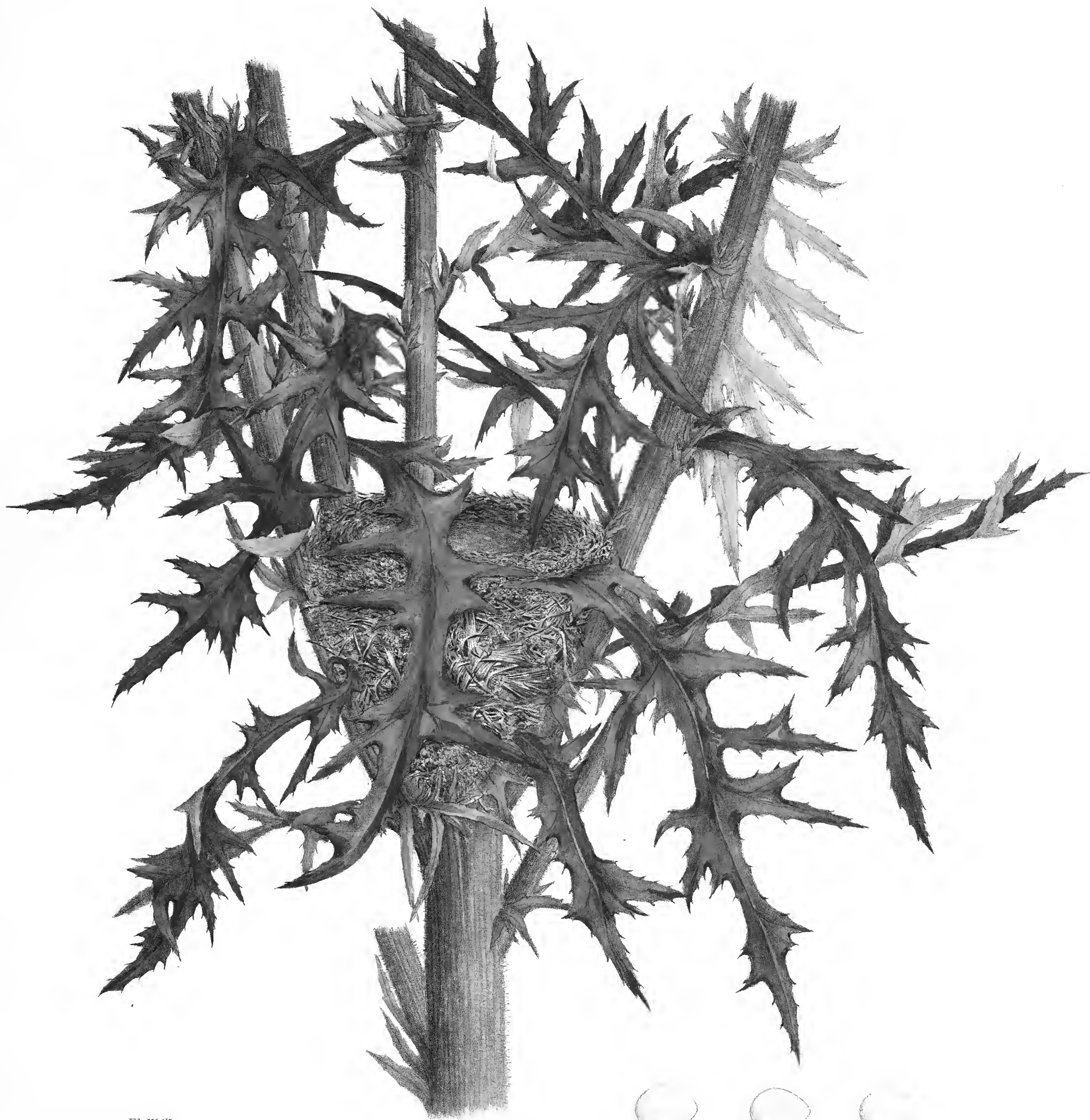
The nest and eggs of Bewick's Wren resemble very closely some specimens of the House Wren's in

size and shape, and, except in size, approach even closer to those of the Great Carolina Wren. The nest alone it would be difficult to distinguish from uncovered nests of *T. adon*, but the eggs are not nearly so thickly marked. Normal specimens of each can be always differentiated. The House Wren, however, sometimes lays eggs very similar to typical eggs of Bewick's Wren.

REMARKS:

The nest and eggs represented on PLATE XLII were taken May 17th, 1882, from a barn near the Chillicothe and Loudonderry road, nine miles from the former place. Its history is as follows: Upon the day and at the place mentioned above, having a few leisure moments, I entered an old barn, unused except to store away grain and hay, in search of a House Wren's nest. At different points on the ground-floor, four large hand-hewed oak timbers answered the place of supporting columns for the floor above. In one of these I observed a mortise-hole, about seven feet high, and from it protruding a few straws and small sticks. Supposing this to be a House Wren's home, I put my finger into it, and, finding four eggs, drew the nest from the hole. As I did not expect to be in the neighborhood again, I had decided at once to take it even with an incomplete set of eggs. When I saw the nest and its contents, I concluded it must be an exceptional specimen or that it belonged to some other species. Up to this time no bird had appeared to claim it, so I retired to a secluded place and waited all the time I could spare, but the owner did not return. I then searched the premises around the barn, and was gratified at finding a pair of Wrens which I thought belonged to the species *T. bewicki*, and the probable builders of the nest in my hand. So I left the place with a doubtful specimen. Three weeks later I revisited the barn, and, to my delight, found a new and similar nest in the same mortise-hole, and a pair of Wrens near by. I had a good view of them, and convinced myself that the birds before me were not House Wrens, but were Bewick's Wrens. As the nest was yet empty, I left it determined to go back again in ten days prepared to shoot its occupant, in order to satisfy myself perfectly as to the species. At the proposed time I returned with my gun, and was greatly disappointed at seeing the nest and broken eggs upon the floor, and no Wrens about. Upon inquiry I learned that some children had just a few days before destroyed the home. Again, later, I returned to the spot, but the objects of my search had left the locality, or at least could not be discovered.

Now, while there is no positive evidence that the nest and eggs figured is that of Bewick's Wren, I firmly believe it to be. It is true, I had never seen a live Bewick's Wren up to this time, nor did I see upon the nest either of the birds supposed to be Bewick's Wrens. But, taking every thing into consideration, I am quite positive of the identity of the specimen illustrated. I have not hesitated, therefore, to have it appear in the present work, although I am well aware that, by some, a doubt may be cast upon its authenticity, and that it may be considered only an exceptional example of the nest and eggs of the House Wren.



Pl XLIII.
ASTRAGALINUS TRISTIS.
AMERICAN GOLDFINCH.

PLATE XLIII.

ASTRAGALINUS TRISTIS—American Goldfinch.

The American Goldfinch, Lettucebird, Thistlebird, or Yellowbird, as this species is variously called, is a permanent resident of the State, but it is more abundant in summer than in winter.

The nest is constructed between the fifteenth of June and the last of July. The latter month is the usual time. Exceptionally the nest with eggs has been found in May and also in September.

LOCALITY:

In the country, a small tree, bush, or tall weed growing in a cultivated field, along a road, or about the edge of a woods, is the usual site for the nest. In towns it is commonly built in a shade-tree or in the garden shrubbery. Uplands and valleys are both frequented. The birds are particularly partial to sections having small creeks or spring-branches, and, accordingly, the nest is to be looked for in such localities.

POSITION:

The nest is commonly placed in an upright crotch, formed by two or more small branches; but it may be in various other positions. It is, however, always situated so that the base and sides are in contact with supporting branches. Its distance from the ground varies from three to thirty feet; ten feet being about the usual height when in a tree, and four feet when in a bush.

MATERIALS:

Grasses, fibres, straws, weed-stems, catkins, bits of leaves, cobweb, and similar materials, varying in different localities and with the taste of the builders, make up the foundation. The fibres, web, and grasses are securely wrapped around the supporting branches. Fine material of the same kind, together with plant-down from the thistle or milk-weed, and other soft vegetable downs, compose the superstructure. The lining is generally a soft, compact layer of slender fibres and plant-down; sometimes, also, horse-hairs are used. Wool, cotton, and threads are occasionally used when obtainable. The complete structure is neat and cozy. Externally it ordinarily measures about three and one-fourth inches in diameter by two and one-half in height, but the position chosen sometimes necessitates a considerably larger or smaller exterior. The cavity is quite uniform, rarely varying more than one-eighth of an inch from one and seven-eighths inches in diameter, or more than one-fourth of an inch from one and one-half inches in depth.

EGGS:

The complement of eggs is commonly five, sometimes four or six. The shell is unmarked, and, when freshly blown, is slightly bluish-green tinted. In time the tint fades some, but a tinge of it always

remains. Marked eggs have been reported, but such must be considered very exceptional. They measure in long-diameter from .60 to .67, and in short-diameter from .50 to .56. A frequent size is about .63 x .52.

DIFFERENTIAL POINTS:

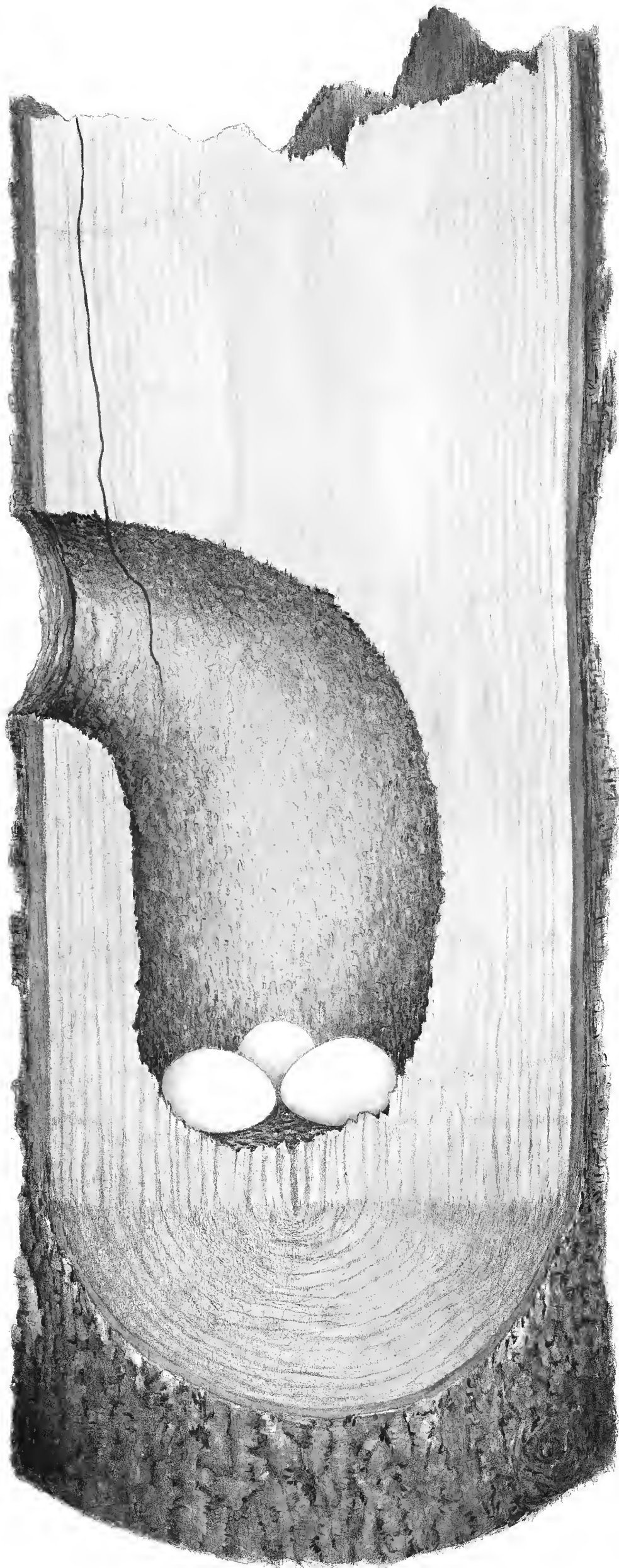
The nest and eggs, when together, can be easily identified by the characteristics given above. As there are but few eggs of similar size that are unmarked, and, as none of these have exactly the same tint of shell as the Goldfinch's, recognition of normal eggs of this species is attended with little difficulty. See Table.

REMARKS:

The nest illustrated on PLATE XLIII was taken late in July, 1880, from a large thistle, beside a spring-branch, near a public road. It was about four feet from the ground. It contained five eggs. The eggs figured were selected from several nests, as representing the various sizes and shapes generally observed. The center one is the commonest pattern. The nest is a typical specimen in position and materials. The cavity, however, measures a little more both in diameter and depth than the average. Externally, it is covered with catkins, and within it is compactly lined with a thick layer of thistle-down.

During the winter months small flocks of Goldfinches are occasionally seen seeking food from various weeds, or flying through the air in their characteristic wave-like flight. They are very fond of the seeds of the sunflower, which they crack with their stout little bills before eating. Day after day they return to an accessible pod, until every seed is devoured. As spring approaches, the flocks become larger and more numerous; and, until the last of June, they continue gregarious and nomadic. As soon as the quarrels of mating are over, and the nest is seriously thought of, each pair attends strictly to family duties, being greatly attached to their home and young. If their nest is robbed or destroyed another is generally built, and, sometimes, even a third is constructed, but, unless molested, only one set is laid by each pair during a single season. The young are bright and sprightly, and make very tame and affectionate cage-birds. I have, at different times, raised several, and have in each found the same characteristics well marked. In the wild state they are very fond of bathing during the warm months, selecting a little creek or spring-branch with sandy bottom. Three or four times a day the same birds will visit their chosen bath, and often wade about for half an hour at a time, occasionally wetting themselves so thoroughly that it is with difficulty they can fly. As soon as the young are strong enough, flocks are formed, and the same roving life is resumed by the old birds, accompanied by their young.

The song of the Goldfinch is not remarkable for any thing but constancy. The prominent notes are the same, at all times and all places. The sunniest day of May puts no more expression into them than the bleakest day of December. On this account, these birds have endeared themselves to me; as their song is always happy and cheerful. Especially does it seem welcome and suggestive of wild flowers and balmy breezes, at that season, when the barren trees and frozen ground have hushed all voices but the melancholy whistle of the Cherrybird, the croak of the Nuthatch, or the cold and shivering chirp of the Sparrow.



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

PLATE LXIV.

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:

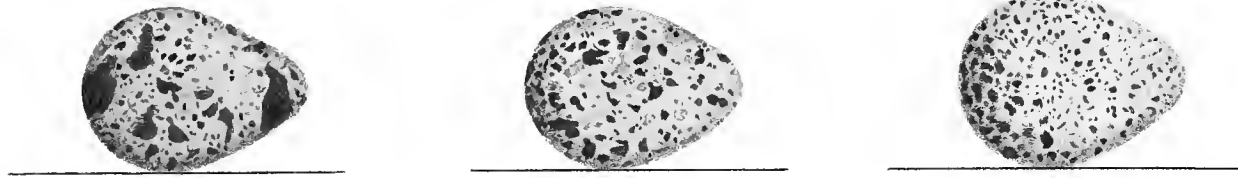
The illustration, PLATE XLIV, represents a section of a limb containing a Red-headed Woodpecker's nest and three eggs. The size of the entrance, the curve, depth, and diameter of the cavity are about the average. The eggs show the usual shapes and sizes.

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.



PLXLV. Fig 1.
TRINGOIDES MACULARIUS.
SPOTTED SANDPIPER.

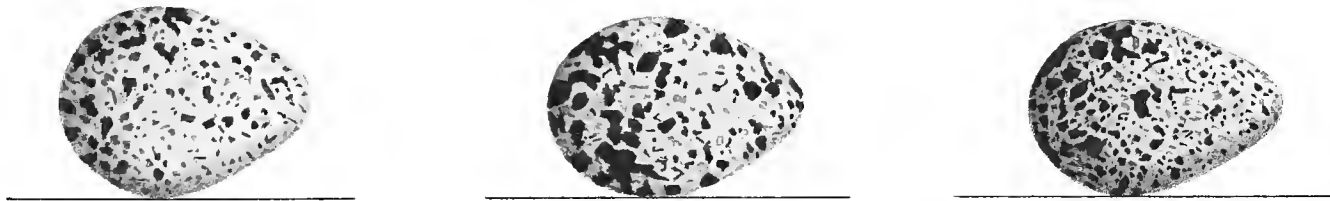


Fig. 2.
OXYECHUS VOCIFERUS.
KILLDEER.

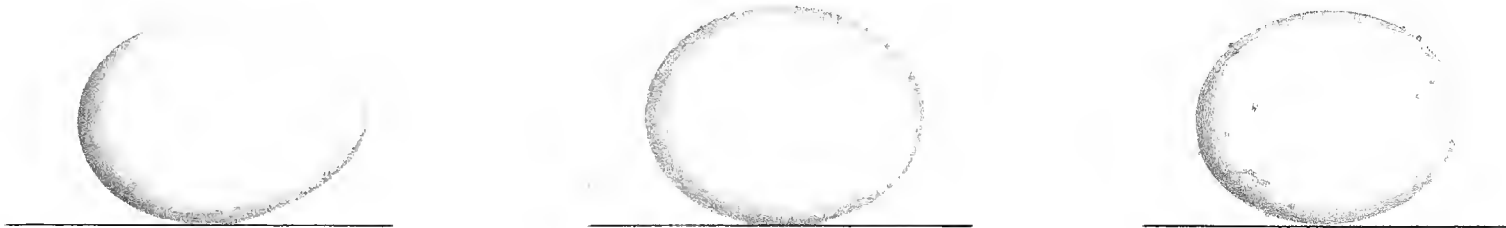


Fig 3.
ASIO ACCIPITRINUS.
SHORT-EARED OWL.

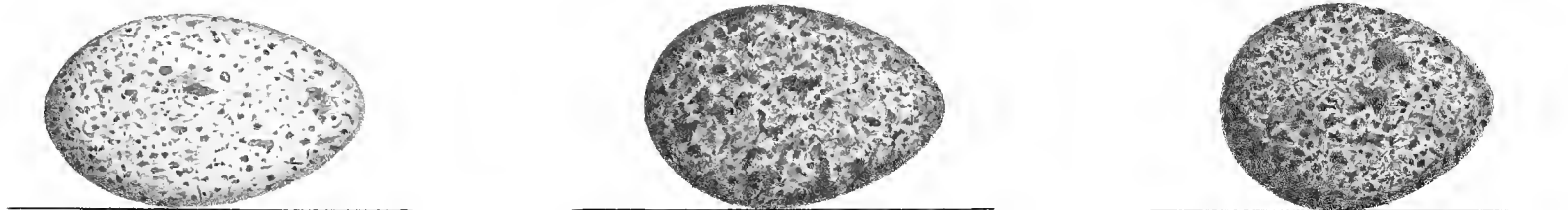


Fig. 4.
CORVUS FRUGIVORUS.
COMMON CROW.

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 tecter-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, 1882, 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.

Part XVI

ILLUSTRATIONS

OF THE

NESTS AND EGGS

OF THE

BIRDS OF OHIO

WITH TEXT



CIRCLEVILLE, OHIO

COPYRIGHTED BY GENEVIEVE E. JONES AND ELIZA J. SHULZE

APRIL

1883

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 cocoanut. 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

browened 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 .70; 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."

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.

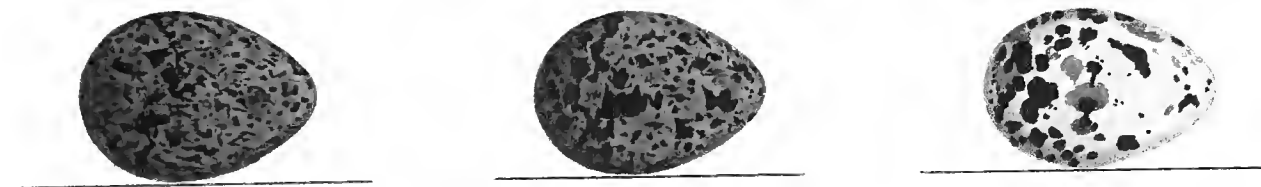
DIFFERENTIAL POINTS:

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.



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

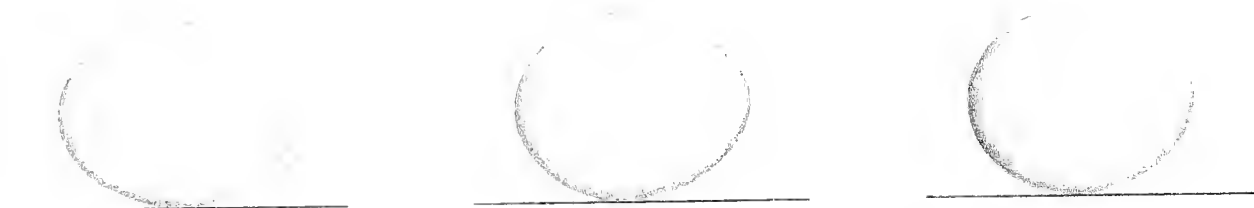


FIG. 2.
CERYLE ALCYON.
BELTED KINGFISHER.

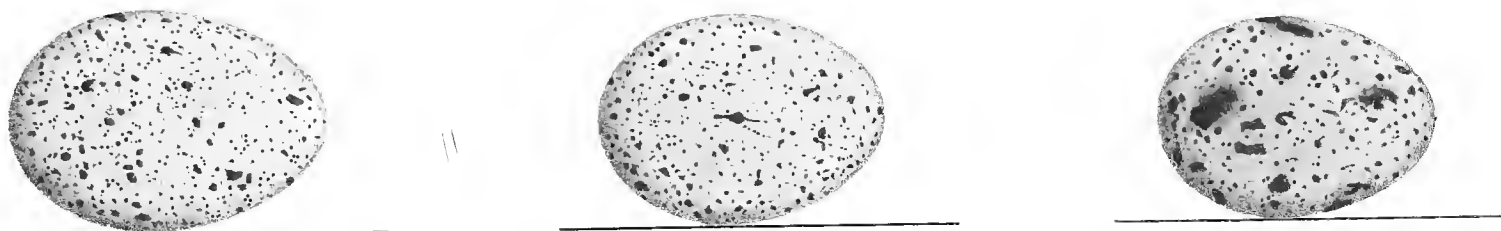


FIG. 3.
GALLINULA GALEATA.
FLORIDA GALLINULE.

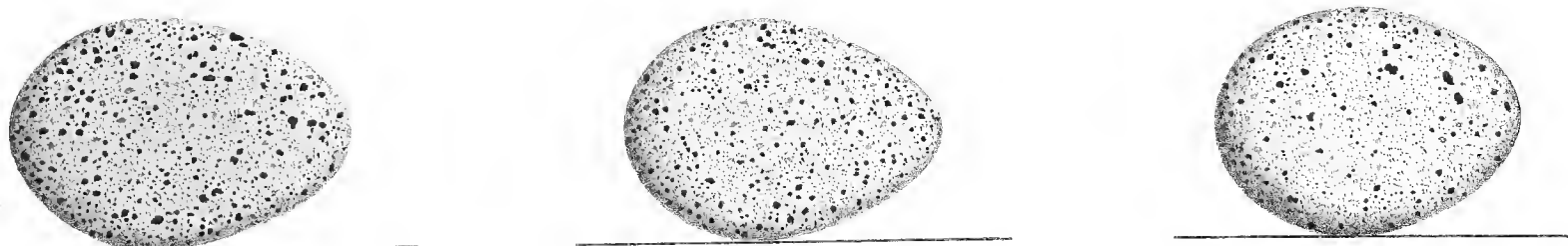


FIG. 4
FULICA AMERICANA.
AMERICAN COOT.



PLATE XLVII.

Fig. 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.

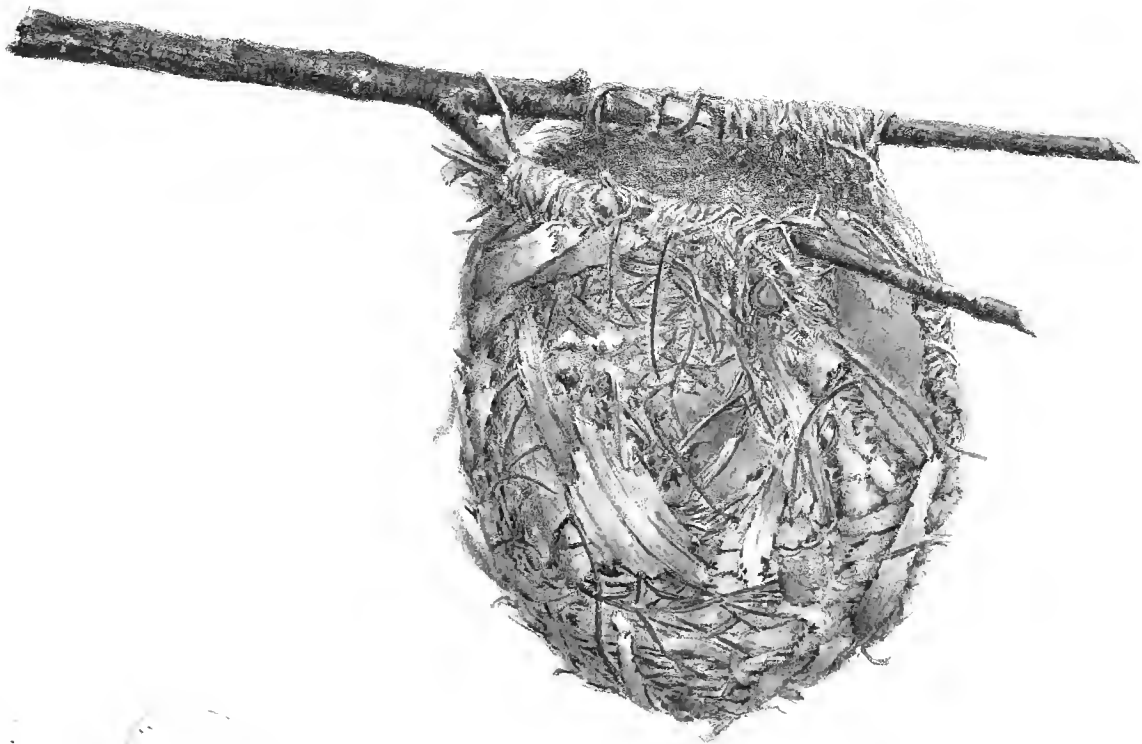
REMARKS:

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.

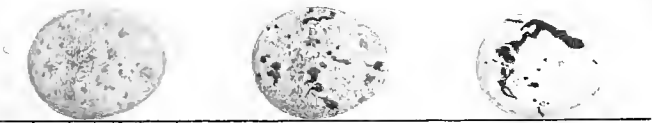


FIG. 2.
POECETES GRAMINEUS
GRASS FINCH.

Part 17 of 18

ILLUSTRATIONS

OF THE

NESTS AND EGGS

OF THE

BIRDS OF OHIO

WITH TEXT

147021
FEB 25 1884
THE UNIVERSITY OF CHICAGO

CIRCLEVILLE, OHIO

COPYRIGHTED BY GENEVIEVE E. JONES AND ELIZA J. SHULZE

JULY

OCTOBER

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 *Lanivireo 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. *POECETES 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:

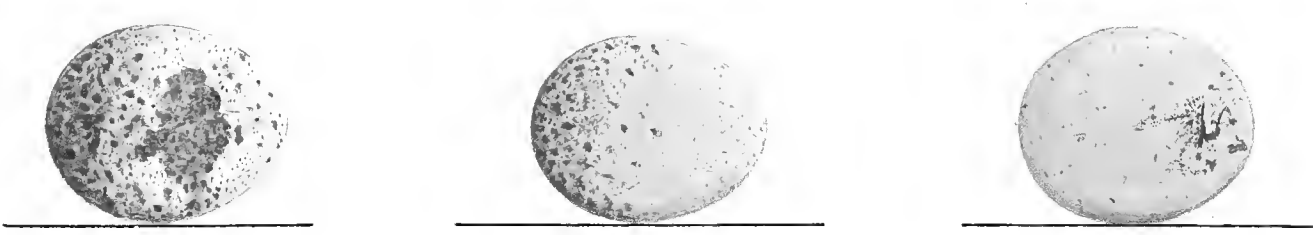
See Table.

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.

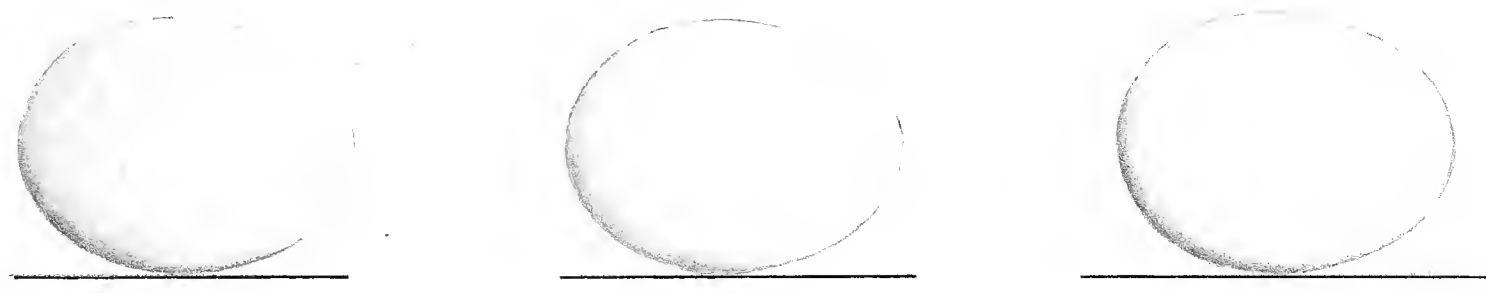


FIG. 2.
ACCIPITER COOPERI
COOPER'S HAWK.

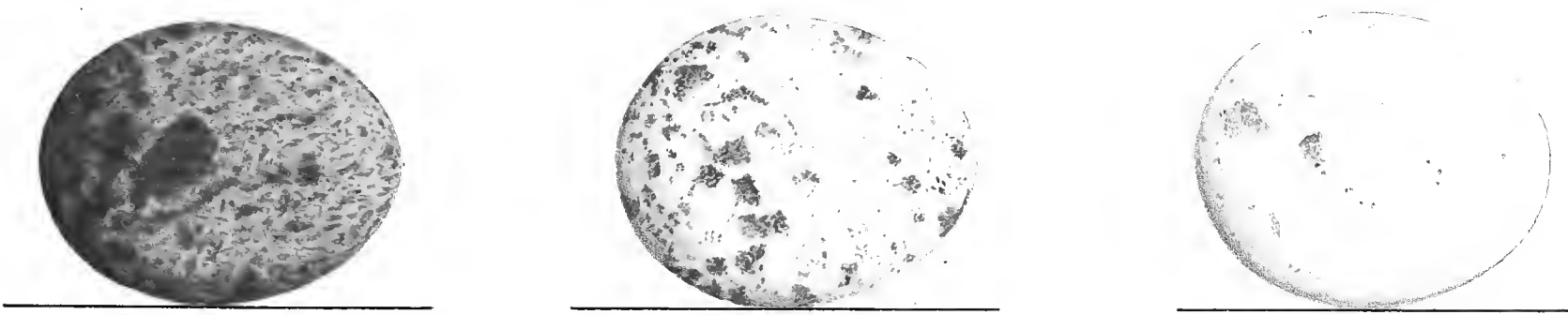


FIG. 3.
BUTEO LINEATUS.
RED-SHOULDERED HAWK.

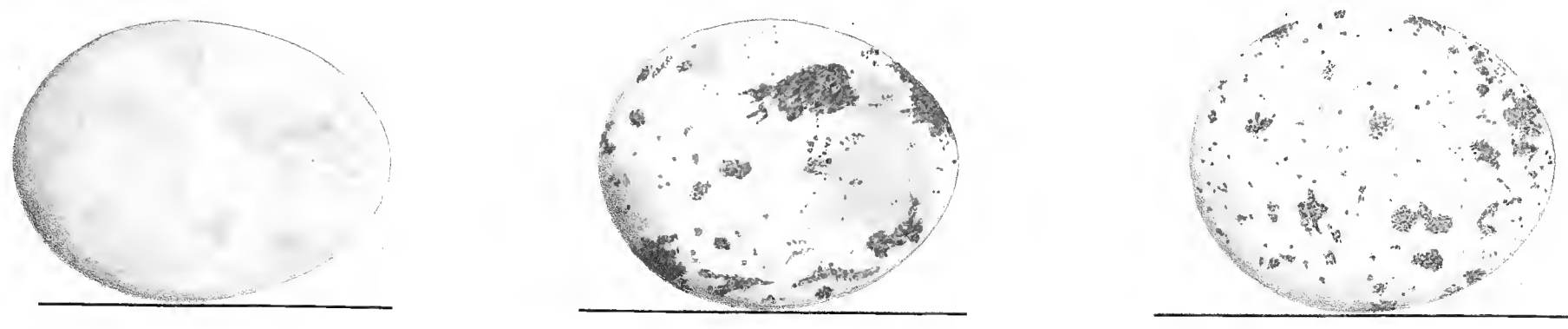


FIG. 4.
BUTEO BOREALIS.
RED-TAILED HAWK.

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 prependicular 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:

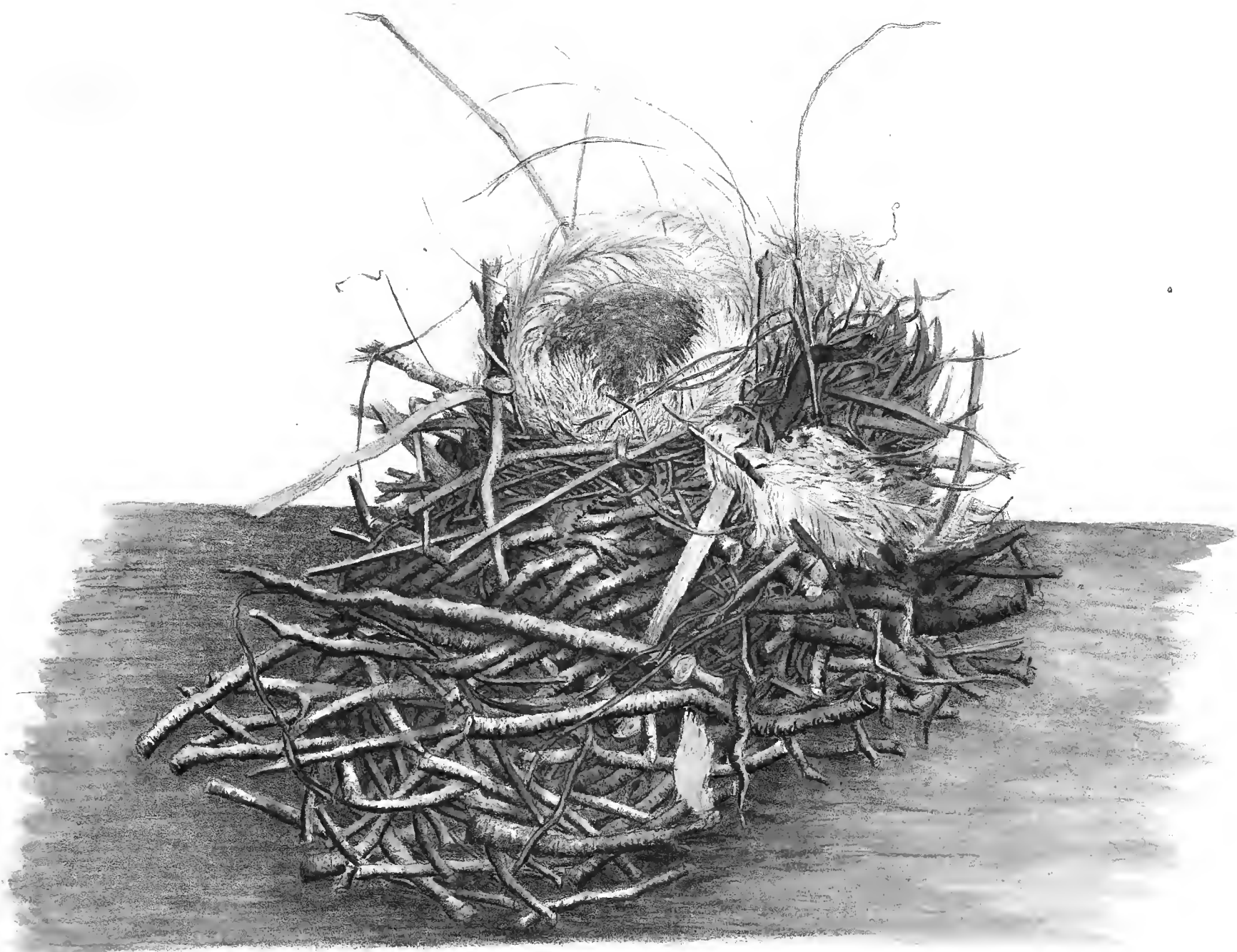
Fig. 4, PLATE XLIX, represents three eggs of the Red-tailed Hawk, selected from five sets. The egg at the left was taken April 19th, 1879, from a nest two miles south of Circleville. The other two were taken from nests east of the same town, in 1878 and 1882.

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. L.
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 rooflets, 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:

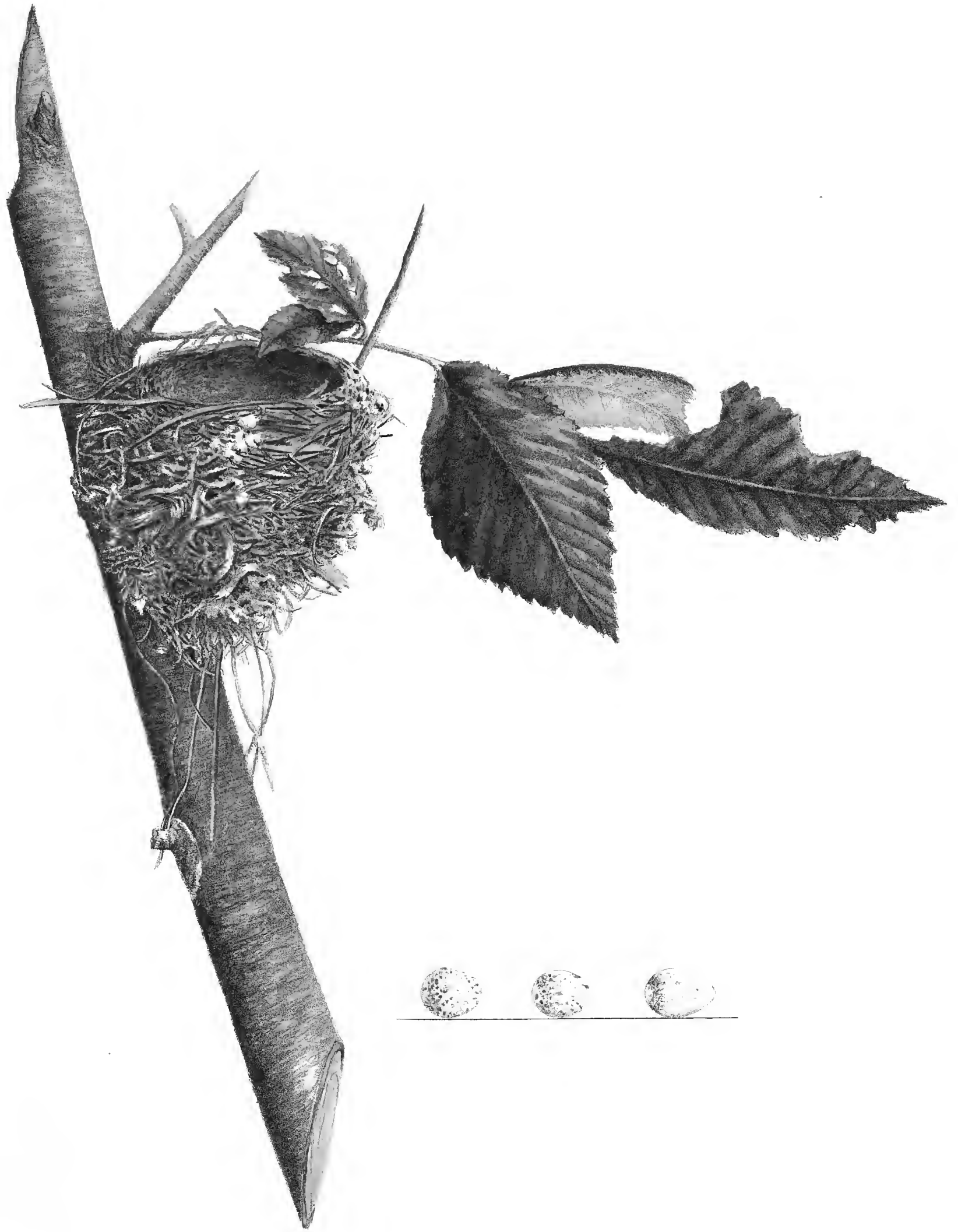
The complement of eggs varies from five to nine. The first set contains more than the second, and the second more than the third. They measure from .62 to .72 in long-diameter, and from .48 to .55 in short-diameter. A set of six eggs, collected by Mr. J. M. Thayer, of Cleveland, measures, respectively, .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.

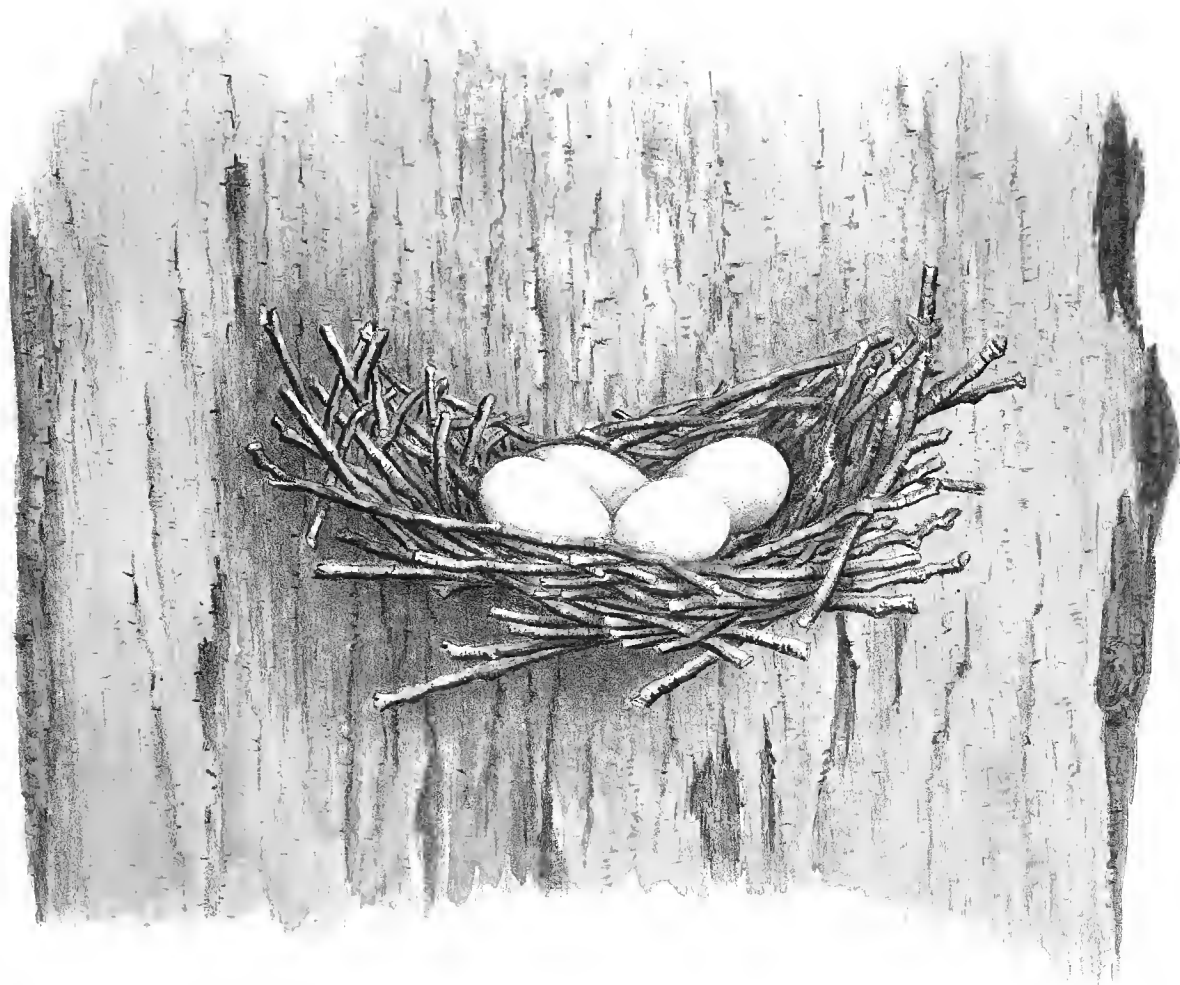


FIG. 2.
CHAETURA PELASGICA.
CHIMNEY SWIFT.

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-sienna. 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 PELASGICA*—Chimney Swift.

The Chimney Swift, or Chimney 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!



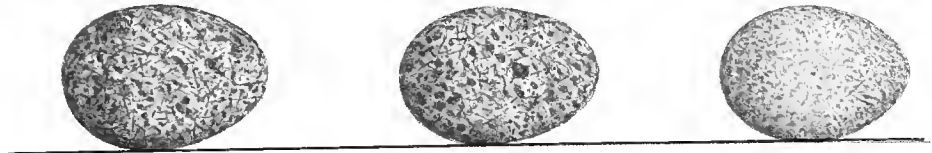
1.



2.



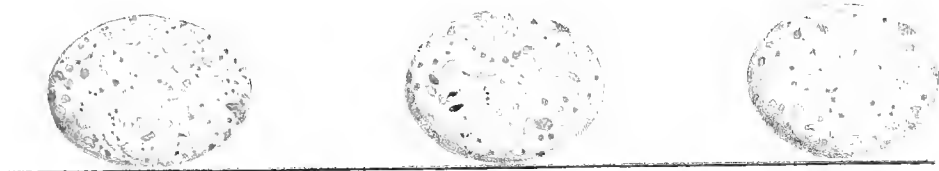
3.



4.



5.



6.



7.

PL. LIV.

FIG. 1. MYIARCHUS CRINITUS.
GREAT CRESTED FLYCATCHER.

FIG. 3. MOLOTHRUS ATER.
COWBIRD.

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

FIG. 2. PASSER DOMESTICUS.
ENGLISH SPARROW.

FIG. 4. CHORDEILES POPETUE.
NIGHTHAWK.

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.

Part 19

ILLUSTRATIONS

OF THE

NESTS AND EGGS

OF THE

BIRDS OF OHIO

WITH TEXT



CIRCLEVILLE, OHIO

COPYRIGHTED BY GENEVIEVE E. JONES AND ELIZA J. SHULZE

JANUARY

1884

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 yelk 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 yelks.

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 Seoto river near Chillieothe. 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.

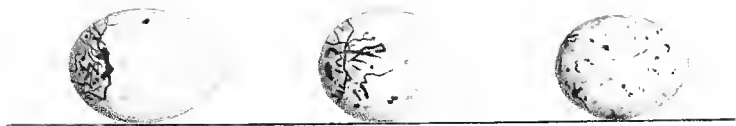
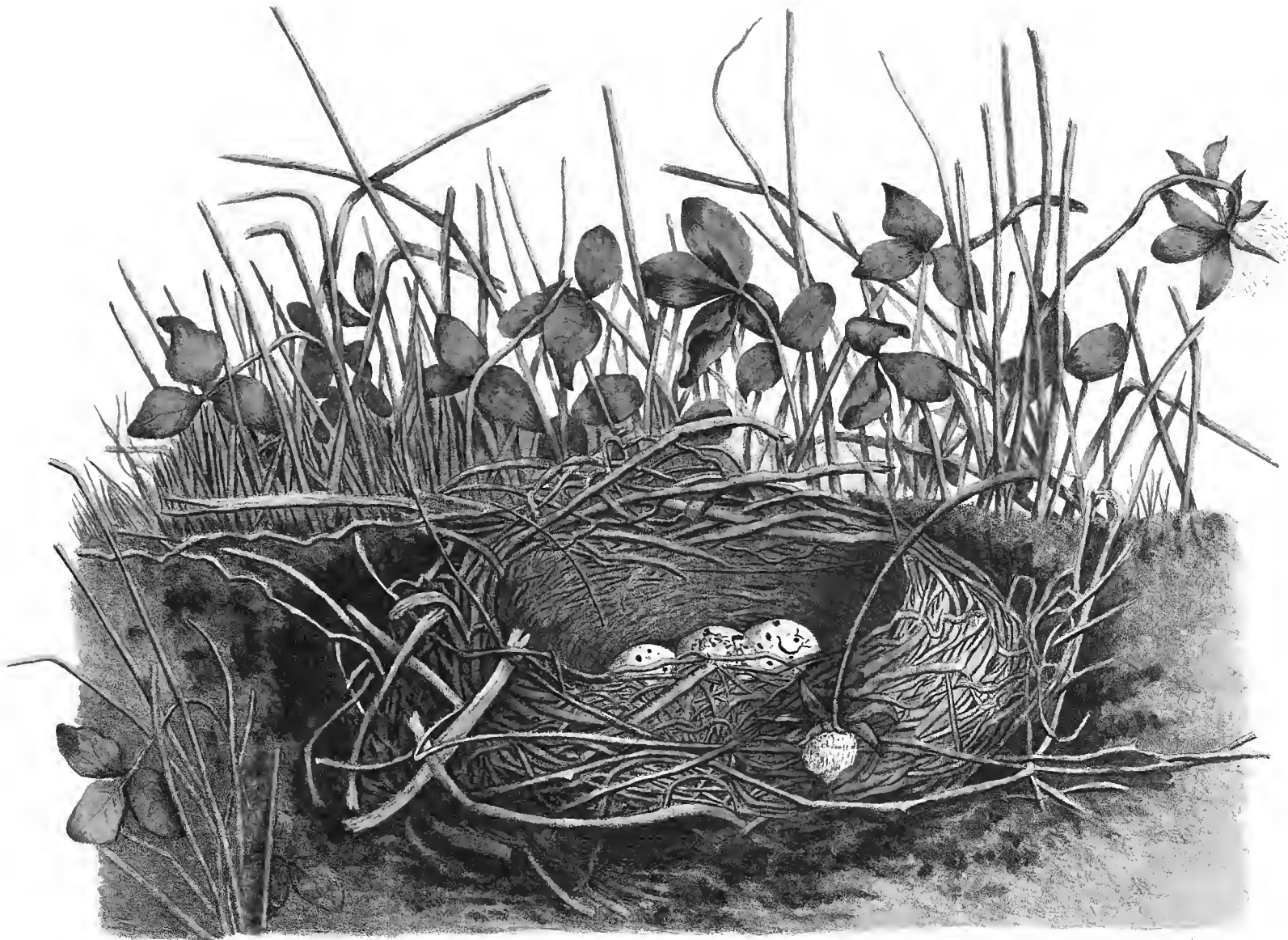
REMARKS:

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 year 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. LV.
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:

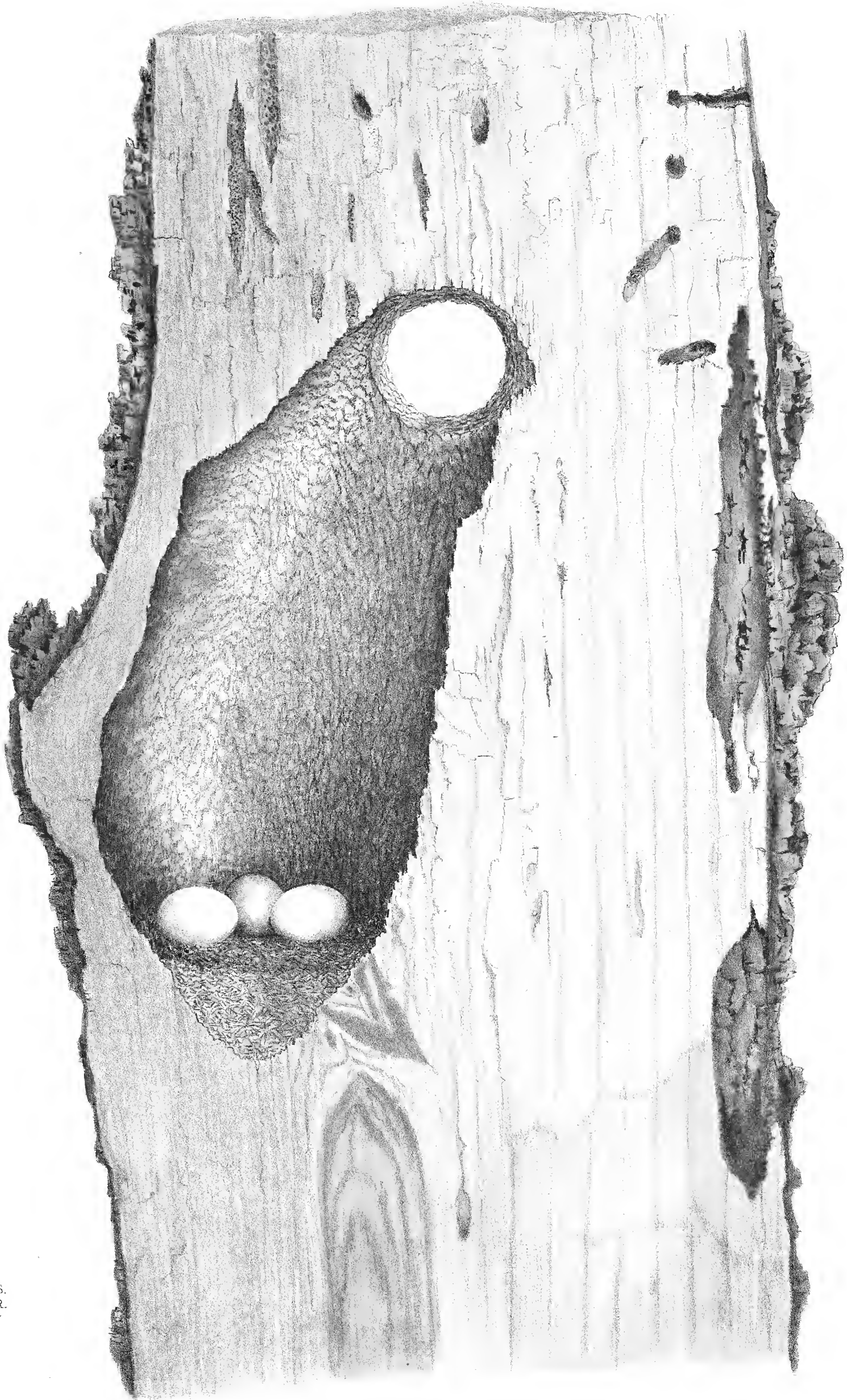
The nest and eggs together can easily be identified, from the position, materials, and size of the nest and the size and markings of the eggs; but it is much more difficult to identify each separately. In fact the nest alone can not be recognized with certainty from that of the Bay-winged Bunting, and 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. LVI.
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 Picus, 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.
DENDROCA PENNSYLVANICA.
CHESTNUT-SIDED WARBLER.

Part XX

ILLUSTRATIONS

OF THE

NESTS AND EGGS

OF THE

BIRDS OF OHIO

WITH TEXT

155022
JUN 1911

CIRCLEVILLE, OHIO

COPYRIGHTED BY GENEVIEVE E. JONES AND ELIZA J. SHULZK

APRIL

PLATE LVII.

DENDRÆCA 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.

NOTICE.

Three more parts, making in all twenty-three, will complete the publication of the "Nests and Eggs of the Birds of Ohio." The plates for these are nearly all printed, and only as much time will be consumed in finishing the book as the coloring of the plates and the printing of the text require. If no unexpected delays occur, the twenty-third, and last part, will be issued about the first of January, 1886.

When completed the volume will contain sixty-nine plates, representing one hundred and twenty-seven species of eggs, sixty-five species of nests, and about four hundred pages of reading matter, many pages of which will be devoted to the general subject of oology, and a suitable amount to embryology.

In order that this book may be properly bound, the authors will make arrangements with a competent and reliable house, so that the best binding, at a reasonable price, may be obtained. With the last part full information will be given.

Circleville, Ohio, 1885.

between two and one-half and three and one-half inches, and ghts and three and five-eighths inches. The diameter of its ghts inches, but its depth ranges between one and one-fourth as two and three-fourth inches in external diameter, and is ie and seven-eighths inches in diameter, by one and three-hazel bush, and is also fastened to a blackberry stem. About crotch, so that it may be said to be built against it rather : of several wide strips of the inner bark of some forest tree, e arranged circularly, and are secured to the branches in s, and in others they are bound down with web or silken or a loose foundation, upon and within which is placed the sh, wiry weed-stems, and round tendrils from some climber. ese fibres, many of which have been split to reduce their 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

PLATE LVII.

DENDRÆCA 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.

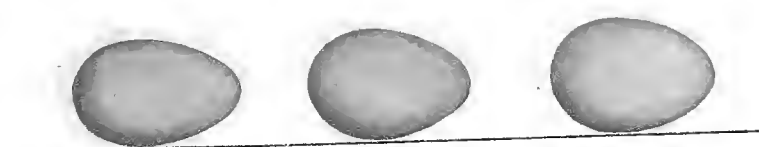
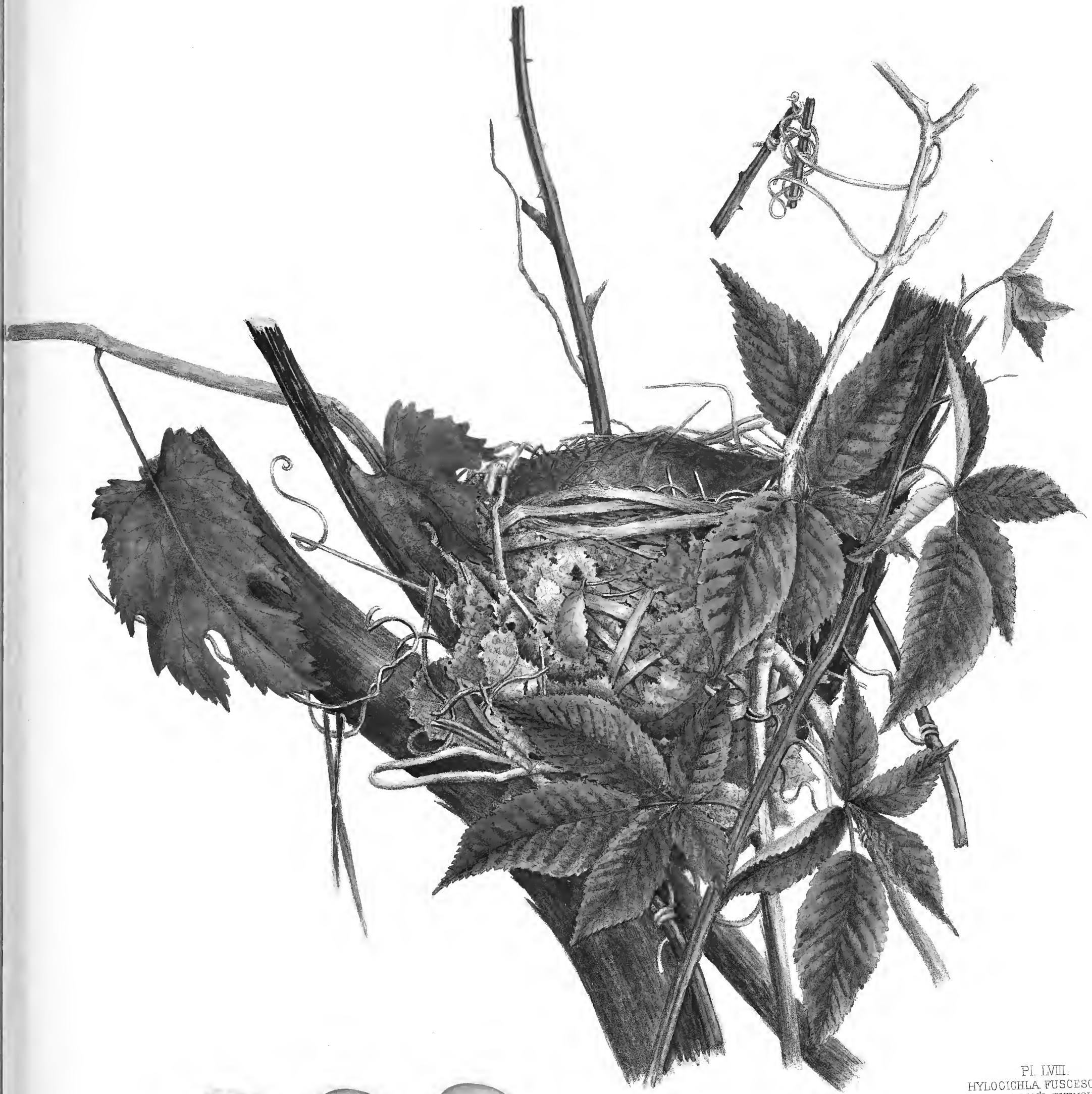
DIFFERENTIAL POINTS:

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. LVIII.
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 to .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:

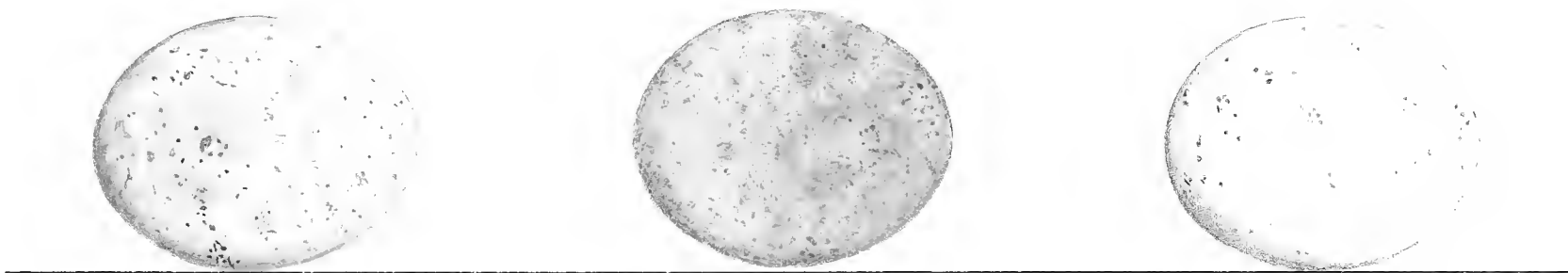
The nest illustrated, Plate LVIII, was found in Franklin County, May 21st, 1884. It was in a damp, shady ravine, about twenty inches from the ground, and contained four eggs. As the common position is so similar to that of the Chewink's nest, it seemed best to figure a structure in a more unusual situation.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

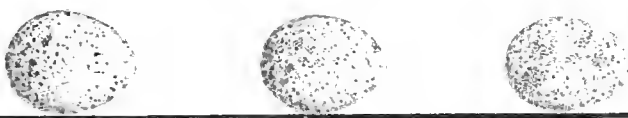


Fig. 4. *COTURNICULUS PASSERINUS*.
YELLOW-WINGED SPARROW.

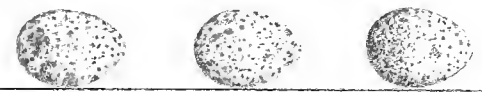


Fig. 5. *PARUS CAROLINENSIS*.
CAROLINA CHICKADEE.

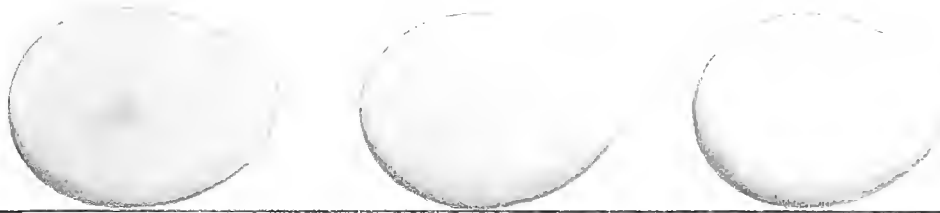


Fig. 6. *BONASA UMBELLUS*.
RUFFED GROUSE.



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 eaves 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 pudlock 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 tame 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 lightning 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 whir 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.

Part 21722

ILLUSTRATIONS

OF THE

NESTS AND EGGS

OF THE

BIRDS OF OHIO

WITH TEXT



CIRCLEVILLE, OHIO

COPYRIGHTED BY GENEVIEVE E. JONES AND ELIZA J. SHULZE

JULY
OCTOBER
1886

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 intermixed 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:

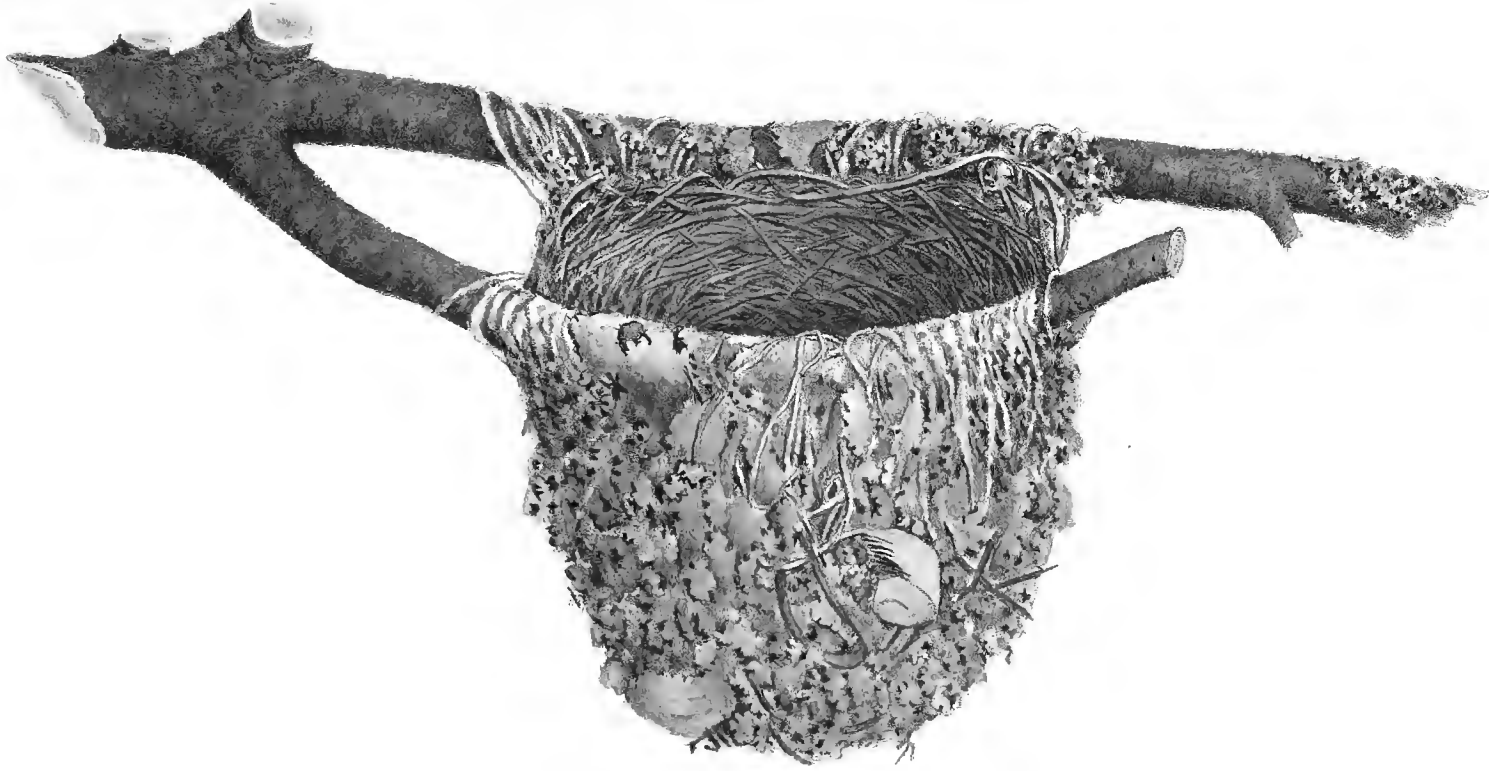
The eggs figured, Fig. 9, PLATE LX, were taken near Circleville, on the 28th of March, 1878. They had been sat upon four or five days. The three show the usual shapes, sizes, ground-colors, and colors and forms of markings.

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.

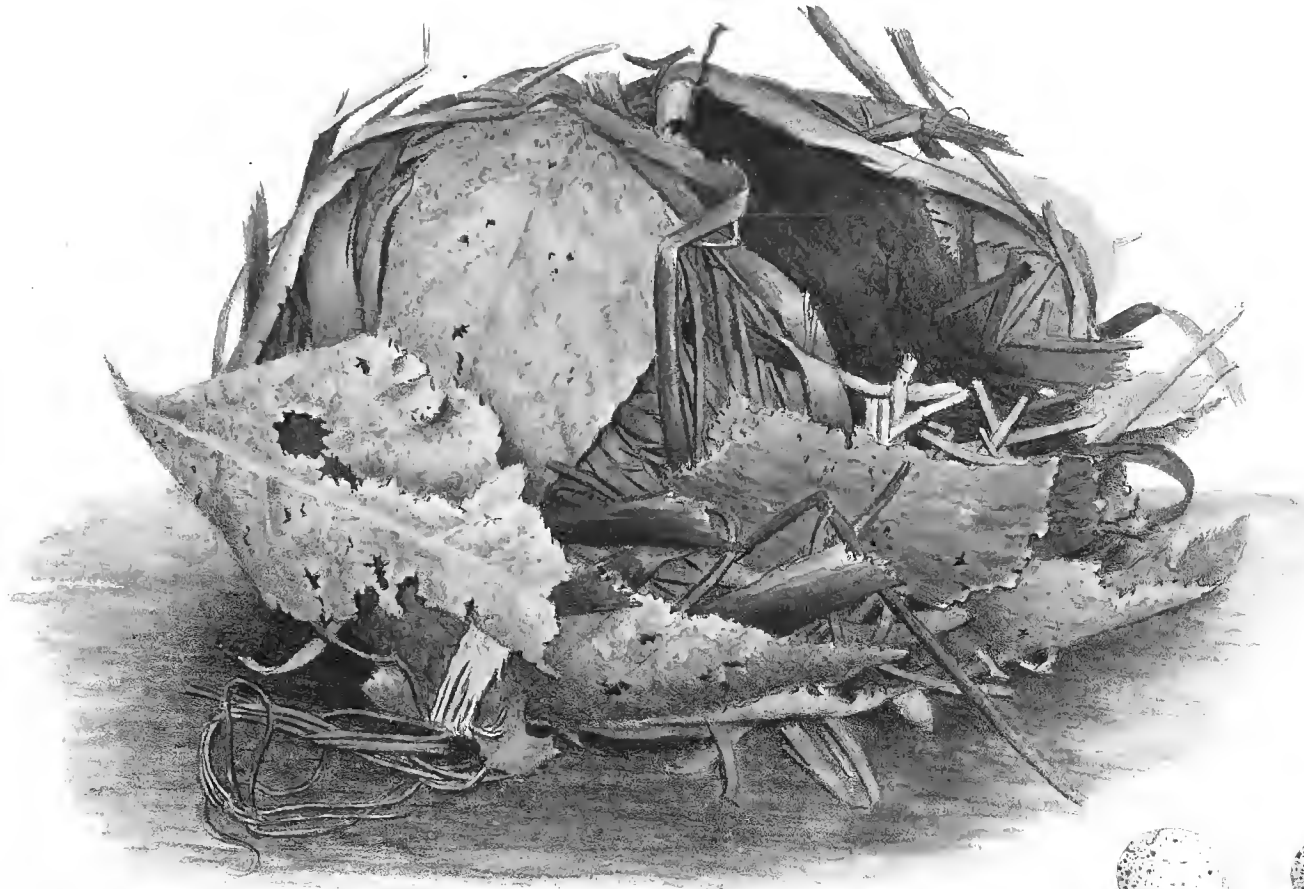


Fig. 2. HELMINTHOPHAGA CHRYSOPTERA.
GOLDEN-WINGED WARBLER.



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 pensive, 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 $1\frac{7}{8}$ inches; depth of cavity, $1\frac{5}{8}$ 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

nically 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 *novaboracensis* 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 *novaboracensis* 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*).

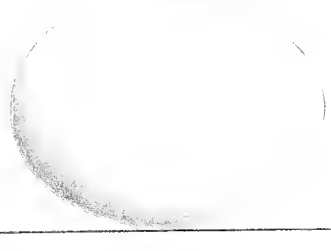
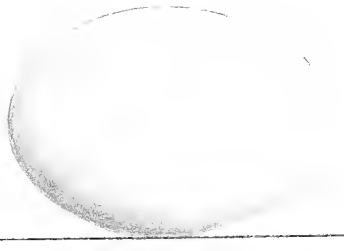
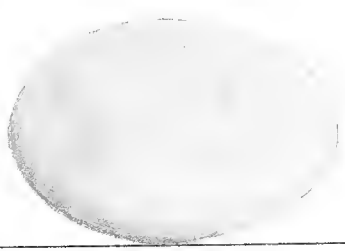
"Upon searching we found the nest concealed by the large leaves of the plant. It was raised about two inches above the wet ground by dead oak and maple leaves, which were quite damp. The owner soon came back, and hopping excitedly from branch to branch of an alder thicket, a few yards away, almost continually 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.

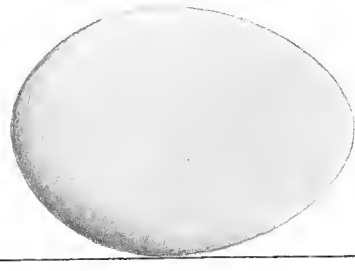
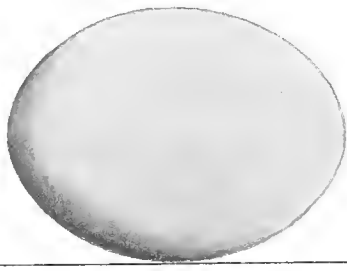
"The eggs are three in number, two pure white; the third sparsely spotted on the larger end, and measured respectively, .69 x .53, .68 x .51, and .65 x .49.

"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.'

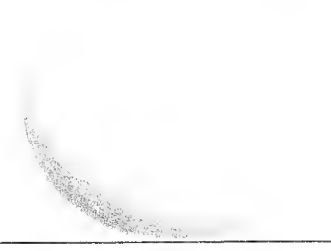
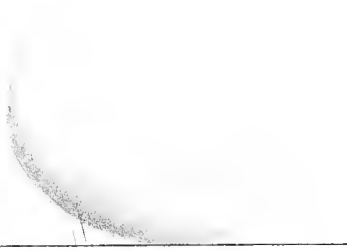
"In structure the nest closely resembles mine, but is a little narrower and deeper inside. It measures in height, 3.00 inches; width, 3.80; diameter inside, 1.90; depth inside, 2.00. The eggs are white, faintly, spotted with red on the larger end, and measure .72 x .52, .70 x .56, .70 x .48, and .68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



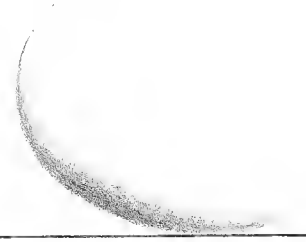
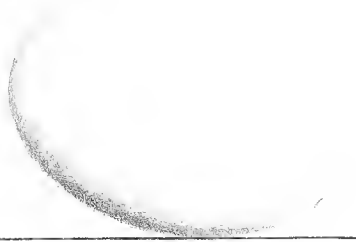
1.



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 unmolested 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 hard, 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 H_2O , 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

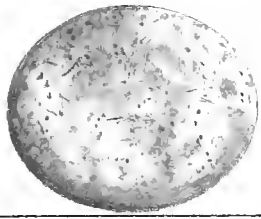
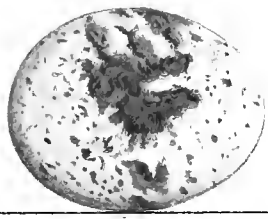
in size, and by this alone may be readily distinguished from each other. That of the Mallard is the largest, measuring about 2.25 x 1.72; next, the egg of Wood Duck, about 1.90 x 1.50; and last, that of the Blue-winged Teal, measuring about 1.85 x 1.30 inches. The Teal's eggs are decidedly buff tinted,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

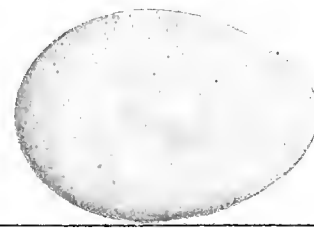
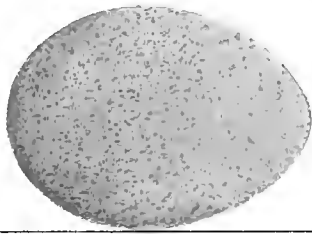
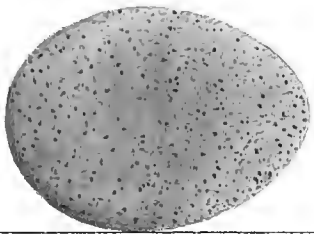


Fig 3. CUPIDONIA CUPIDO.
PRAIRIE HEN.

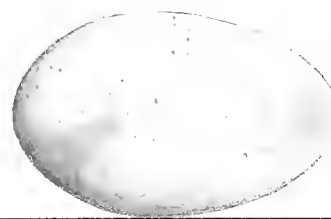
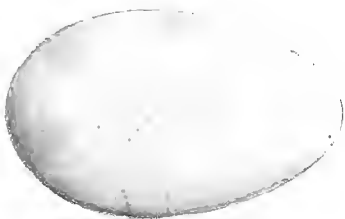


Fig 4. DYTES AURITUS.
HORNED GREBE.

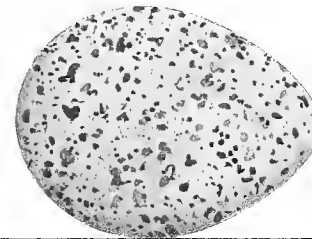
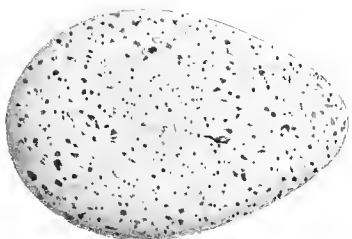


Fig 5. BARTRAMIA LONGICAUDA.
BERTRAM'S SANDPIPER.

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 Cireleville in 1880 and 1882. They have been selected from three sets as representative in size, shape, ground-color, and markings.

About Cireleville 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.

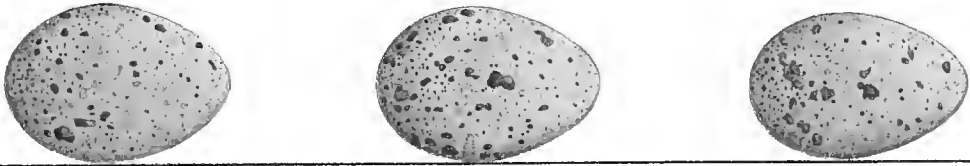


Fig. 3. PORZANA CAROLINA.
SORA RAIL.



Fig. 4. MIMUS POLYGLOTTUS.
MOCKINGBIRD.



Fig. 5. ECTOPISTES MIGRATORIA.
PASSENGER PIGEON.

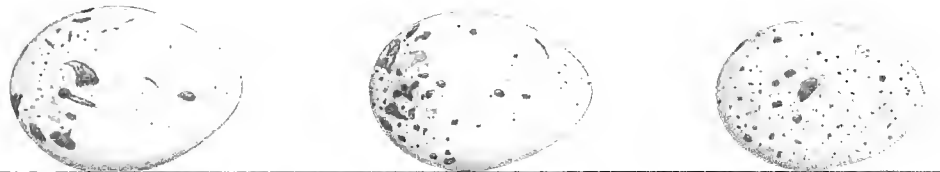


Fig. 6. RALLUS VIRGINIANUS.
VIRGINIA RAIL.

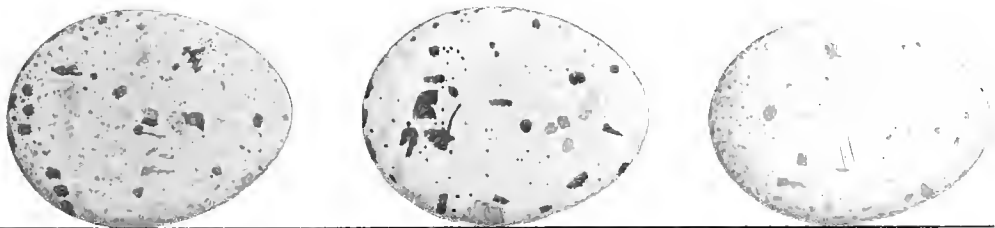


Fig. 7. RALLUS ELEGANS.
RED-BREADED RAIL.



Fig. 8. SCOPS ASIO.
LITTLE SCREECH OWL.

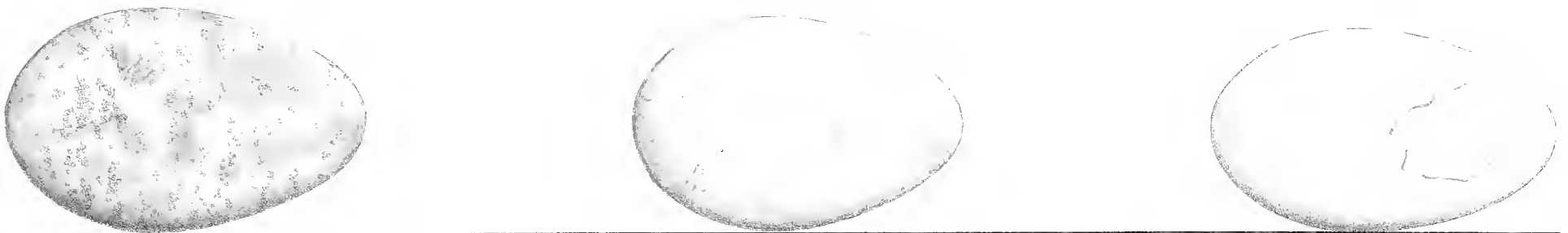


Fig. 9. PHALACROCORAX DILOPHUS FLORIDANUS.
FLORIDA CORMORANT.

PLATE LXIV.

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:

he 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 gun 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 Koeh, 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 displeasing to the ear.

*Scopsie was Mr. Maynard's pet Owl.

PLATE LXIV.

Fig. 9. PHALACROCORAX 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. LXV.
STURUS AURICAPILLUS.
GOLDEN-CROWNED THRUSH.

PLATE LXV.

SIURUS AURIGAPILLUS—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 shreads 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:

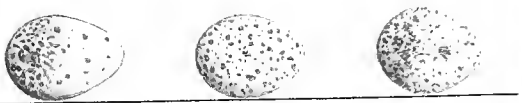
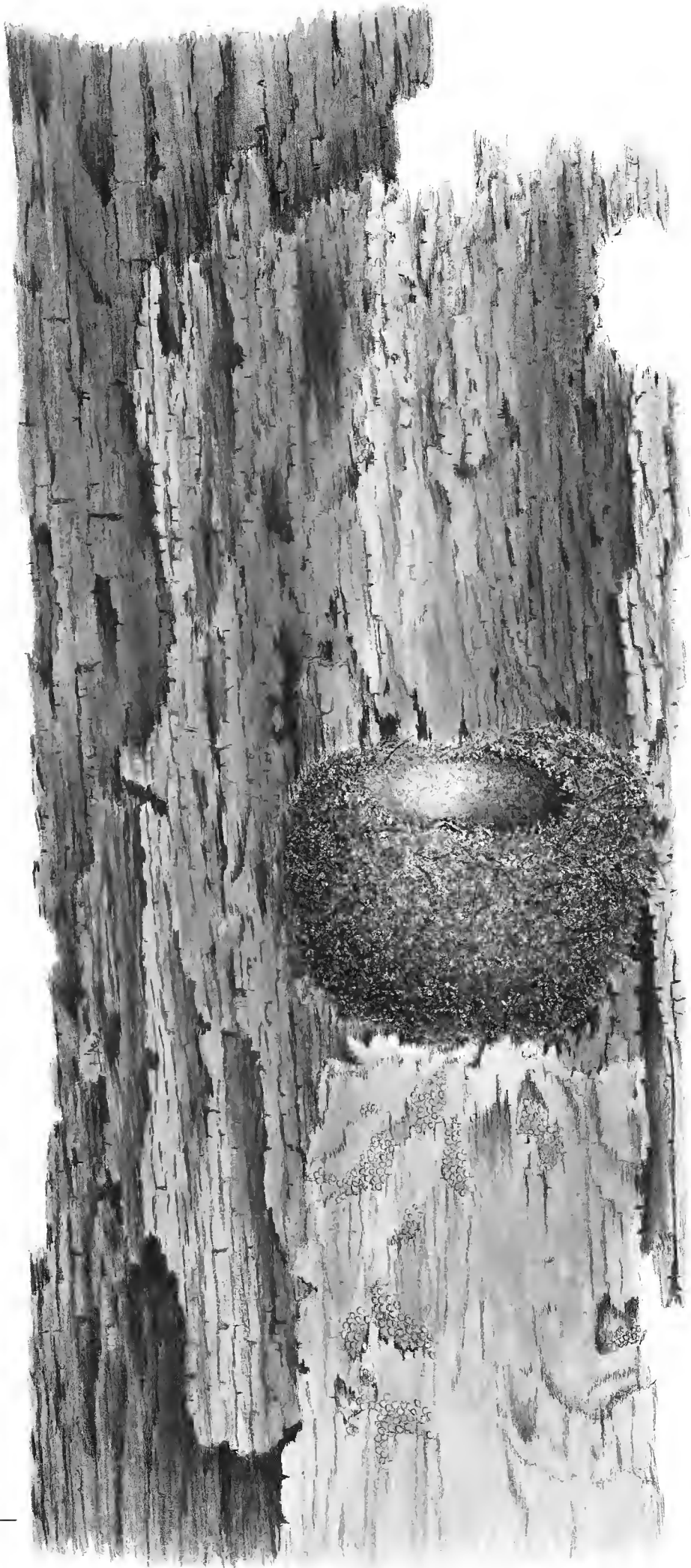
The nest is sufficiently characteristic in style of architecture and dimensions to make identification easy and certain. The eggs are less readily known. See table.

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.



PL. LXVI.
PARUS ATRICAPILLUS.
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.

Part 23

ILLUSTRATIONS

OF THE

NESTS AND EGGS

OF THE

BIRDS OF OHIO

WITH TEXT

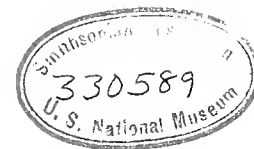
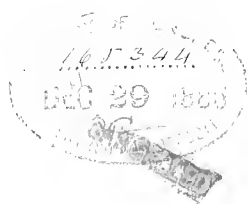
CIRCLEVILLE, OHIO

COPYRIGHTED BY GENEVIEVE E. JONES AND ELIZA J. SHULZE

December 1886

Last Part

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.

COPYRIGHTED BY
GENEVIEVE ESTELLE JONES AND ELIZA J. SHULZE.

TEXT PRINTED BY
ROBERT CLARKE & CO., CINCINNATI, OHIO.

PLATES PRINTED BY
THE KREBS LITHOGRAPHING CO., CINCINNATI, OHIO.

TO THE MEMORY OF
MISS GENEVIEVE ESTELLE JONES

We Dedicate this Book.

MRS. N. E. JONES.
HOWARD JONES.

PREFACE.

IN presenting to the public "Illustrations of the Nests and Eggs of Birds of Ohio," we ask that it be received with due consideration of the circumstances attending its publication. The plates have, for the most part, been drawn and colored by one accidentally called to the task, and the text has been prepared, from first to last, at such odd hours as could be spared from an active practice in the field of medicine and surgery. And now, after eight years of labor, having brought to conclusion this costly and painstaking work, it may not be uninteresting to those who possess it, nor out of place in us as its authors in part, to particularize somewhat in regard to the successes and discouragements attending its progress, and also to give credit to all who have been connected with its interests, in order that whatever of merit or demerit lies within its covers may be properly placed.

In 1877, Miss Genevieve Estelle Jones determined to make a series of plates illustrating the nests and eggs of Ohio birds, and, with the assistance of an intimate friend, Miss Eliza J. Shulze, soon arranged a plan of work. After many preliminaries, it was agreed that the drawing and coloring should be done entirely by themselves, and the text prepared by Dr. Howard Jones. It was further agreed that, so far as necessary, the nests and eggs to be illustrated should be collected and arranged by Dr. Jones, and, whenever possible, these specimens should be fresh, rather than be taken from his cabinet. These points and many others having been decided, the work was begun in earnest. The young ladies had done some work with the pencil and brush, but neither had received any artistic schooling. The first thing to be acquired was the drawing upon stone, as the outlines of the plates were to be produced by lithography. After some weeks of practice, Miss Shulze produced PLATE I, and Miss Jones PLATE II. These having been printed successfully, were followed by PLATES III and V by Miss Shulze, and PLATES IV, VI, and XV by Miss Jones. All of these but PLATE XV were then colored, and I, II, and III, with their accompanying text, were issued as Part I to the few subscribers who had been obtained by sending a short prospectus of the proposed work to such persons as could be heard of. This first part was sent out in July, 1879. Miss Shulze was, at this time, in the mountains of Pennsylvania for the summer, coloring and drawing. The part had but reached the subscribers, and encouraging comments were being received, when Miss Jones was taken ill with typhoid fever, and, after a lingering sickness, died on the 17th day of August, aged thirty-two years. Miss Shulze hastened home at the announcement, and for some weeks no decision

could be arrived at as to the future of the work. Finally it was arranged that Mrs. N. E. Jones, the mother of Miss Genevieve, should assist with the coloring, and the publication should proceed as before. After some months, Miss Shulze assigned to Dr. N. E. Jones all her interest in the book, past and future. Under this new condition, Dr. N. E. Jones assumed all expenses, and again the work made progress, Miss Shulze being employed to make the drawings upon stone. For some time every thing went smoothly, and a speedy completion of the lithographing was expected, when, for reasons entirely satisfactory, in April, 1880, Miss Shulze withdrew from the undertaking.

Again the publication was brought to a halt, but not being willing at this stage to abandon it, Mrs. N. E. Jones determined to do the drawing as well as the coloring, and, after some delays, the work began to grow. Owing to the great amount of labor, it was soon found that assistance would be needed, and Miss Nellie D. Jacob, of Circleville, was engaged to color the eggs, and later, Miss Josephine Klippart, a well-known artist of Columbus, O., gave valuable assistance in coloring nests, and still later, Miss Kate Gephart, of Circleville, was employed with her brush for nearly a year. During her association with the work, Miss Shulze drew PLATES I, III, V, VII, VIII, XI, XII, XIII, XIV, and XIX. All the remaining plates, excepting II, IV, VI, X and XV, were drawn by Mrs. N. E. Jones, and the patterns for all the coloring, together with the greater part of the coloring itself, after PLATE VI, with the exception of the eggs, were done by her. After Part VIII, the eggs were painted by Miss Jacob from the originals, with the greatest patience, faithfulness and skill.

The text, as originally begun, has been continued by Dr. Howard Jones. A cabinet containing representatives of every species of egg and many nests of Ohio birds, and field notes extending over a number of years, have furnished the facts. Wherever information has been derived from other sources, credit is given, with the exception of the article upon the Quail, beginning at "Remarks," written by Dr. N. E. Jones, and several references to the finding of the nests of some of the water-birds in the Montezuma Marshes, taken from MSS. by Dr. Lloyd Smith.

From its commencement in 1878 to the present time, 1886, this work has been steadily progressing to an end, subject to the interruptions named, and such others as have been caused by sickness, and minor circumstances which would necessarily arise during a period of years, to temporarily interfere with its advancement. Aside from the entertainment and instruction accompanying the study of birds in their homes, and the delineation of their various styles of architecture, it has been a great pleasure to us to continue to completion an undertaking so unfortunately interrupted at almost its very beginning. It has also been a satisfaction to us to know that, however poor our efforts, we were breaking ground in a new field, which, with the cultivation of time, will yield a rich and beautiful harvest. Numerous publications, varying in merit from the productions of Wilson and Audubon to the small octavo of but a few pages, have appeared at different times, giving the plumage of the birds of North America, together with such habits as the writers were familiar with, but in all the mass of ornithological literature up to 1878, it was only occasionally that nests and eggs were figured. Superficial descriptions of nests and eggs were

generally appended to the biography of each species, but farther than this nothing had been done. Until very recently, even these descriptions, with but few exceptions, made little advance from the original text of the ornithological pioneers.

The study of the plumage and ordinary habits of birds is easy compared to the study of birds in connection with their nests and eggs. All endeavor to hide their nests, or, if not to conceal them, to put them in inaccessible places. This makes the finding of nests of even common birds sometimes very difficult, or, if not difficult to discover, at times unattainable; while with birds that are rare, the finding of their nests is almost impossible. There are many cabinets in the state with complete sets of resident birds, but there is no cabinet containing specimens of the nests and eggs of each of these species. In fact, there is no cabinet that approaches completeness. This is accounted for partly by reason of the natural difficulties accompanying their collection, and partly because of the large amount of space which the nests would occupy, and the frailness and destructibility of both nests and eggs. The obstacles in the way of issuing a work devoted to nests and eggs, aside from the want of business and artistic qualifications, are not easily overcome, and account largely for the apparent neglect of this important part of ornithological literature.

In the present work, the plates have, in nearly every instance, been drawn from fresh nests collected for the purpose by Dr. Howard Jones, and, together with the eggs, they have in all cases been satisfactorily identified. The exceptions are mentioned under "Remarks." Both nests and eggs are full size, and depicted so as to best illustrate with exactness every detail of structure. To accomplish this, we have often detracted from the beauty and picturesqueness of both: in the nests, by presenting them stripped of much of their accompanying foliage, which obstructs the view, but in nature adds so much to their variety and beauty; in the eggs, by drawing them in full and out of the nest, a position where their attractions show to poor advantage, but the only one in which a true conception of their size can be had. Deep shadows and high lights have alike been avoided, especially in picturing the eggs. We have endeavored to produce plates which will show every thing precisely as it is, and give, at close range, a correct idea of the original, rather than a set of highly-colored drawings suited only for framing.

As far as possible, the nests and eggs figured have been gathered in the immediate neighborhood of Circleville. This gives to them an especial value, for, being constructed under the same conditions, as nearly as possible, the variations of architecture existing between the different species is more correctly expressed than if they had been built in much differing geographical parts of the State. Some of the nests illustrated were taken from places at a distance from where the majority were obtained, but this was necessitated by the rarity or absence of the birds in the designated locality. There are, undoubtedly, some birds breeding in Ohio, the nests and eggs of which it has not been possible to find; on the other hand, some nests and eggs have been obtained which may never be secured again. Several birds have for the first time been added to the list of summer-residents, which may in future years become plentiful, while some designated in the text as common may in time become rare and finally disappear

entirely. The conditions of civilization will account for some of these changes; for others we must look to the birds themselves. That the list of summer-residents contained in this book is incomplete, we are well aware; but it contains the nest or eggs of no species not fully identified. Some birds, the Cerulean Warbler, for instance, we know are common summer visitors, but we have been unable to find their nests, either in the woods or in collections. Imperfections of this class, omissions, must necessarily exist if the publication were ever brought to a close; but faults of the opposite class have been studiously avoided. Trusting that we shall be judged upon the merits of what we have done, rather than criticised for what we have omitted, we place "Illustrations of the Nests and Eggs of Birds of Ohio" before the public. And if discriminating and learned ornithologists find in it more to praise than to condemn, we shall be satisfied with our labor.

CIRCLEVILLE, O., *August 1, 1886.*

INTRODUCTORY.

THE State of Ohio embraces about 40,000 square miles. From east to west its extreme length is about 220 miles; its extreme breadth from north to south is about 210 miles. Its southern limit reaches $38^{\circ}, 25'$, and its northern limit 42° north latitude. Its eastern border is $3^{\circ}, 30'$ west from Washington, and its western extension is $7^{\circ}, 50'$. About two-thirds of this 40,000 square miles is under cultivation. The remaining one-third is chiefly woodland. There were naturally a few small prairies, but these have been nearly all plowed up, and now are annually sowed in grain. From the north-east corner of the State a low water-shed, the greatest elevation of which is scarcely 1,400 feet above the sea, extends in a south-westerly direction, dividing the State into two parts, the uppermost of which drains into Lake Erie, the other into the Ohio River. There is much level country extending from Cleveland to Chillicothe and westward, while to the east and south are rolling country and hills of considerable size. In the southern counties the winter temperature is not so severe as in the northern, but along the borders of the lake, while colder, it is also more uniform. Here, when spring comes, it comes to remain its allotted time, and in the fall, in some places, the foliage habitually dies before frosts arrive. Lake Erie forms a concave line at the northern border of the State, and, as would be expected of such a large body of water, exerts great influence as regards temperature, not only upon the islands which it contains, but also upon its shore. Some birds make their summer abode here, which, if found at all, upon first thought we would expect to occur further south.

There are no natural large bodies of water in the State, but it is abundantly supplied with large and small streams. The largest, the Ohio River, flows in a westerly direction and for part of its course marks the southern boundary line. There are several artificial lakes. Of these St. Mary's reservoir, situated in Mercer and Auglaize Counties, contains the most water, having an area of 17,000 acres, which, together with the Ohio Canal, running from Cleveland to Portsmouth, with its reservoirs, exerts a decided influence upon the bird life of the interior counties. North of the water-shed numerous streams flow to the lake, and south of it several large rivers and a multitude of creeks hasten to the Ohio. The Scioto, the Muskingum, the Hocking, and the Miami Rivers are the largest and most important of the southern tributaries. The county of Pickaway, from which the majority of nests and eggs illustrated have been taken, is a nearly square, level piece of land, situated a little south of the center of the State. It is about twenty-two miles long by twenty miles broad, and through the middle of its eastern two-thirds, running nearly north and south, is the trough of the Scioto River. This valley comprises thousands of acres of fertile corn land, under fine cultivation. Going eastward out of this valley, the ground gradually rises, and at a distance varying at different points from one-half to three miles or more, the margin of a level plateau, which extends to the rolling country of Fairfield County, is met with. On the west, a similar rise and a similar plateau exist, but the plateau is much larger, and is divided into small valleys by two creeks of considerable size, which flow to the river. The land of the county contains much timber, but no very large tracts now remain. The ground under cultivation grows corn, wheat, barley, rye, oats, buckwheat, broom-corn, and timothy, clover, and blue-grass. The valley, which is overflowed annually, is chiefly sowed in maize and broom-corn, the wheat and other grains being

principally grown on the higher plateaus. The timber, while greatly thinned from its original abundance, is in several localities still standing in quite its primeval condition. Such tracts are now frequented by the Ruffed Grouse, but the Wild Turkey, once extremely plentiful, has not been seen for nearly fifteen years. The common trees are the oak, hickory, ash, walnut, maple, cherry, buckeye, and, in the bottoms, sycamore and willow. The underbrush is principally hazel, blackberry, briers, pawpaw, haw, and various kinds of saplings.

Although the county contains no hills, its surface is relieved of the monotony of level ground by the valley of the Scioto and the valleys of the numerous creeks which traverse it. Several small ponds, the largest containing less than fifteen acres, also add variety and increase perceptibly the number of summer-resident birds.

The climate of Pickaway County, situated, as it is, near the center of the State, may be taken as an average of that of the entire State. Spring is usually reckoned from the first of March, though this month seldom affords many spring-like days. In 1885, on the 7th of March, the ground was covered with snow, the ponds contained ice a foot thick, and the river was gorged with great blocks of ice for miles. Frequently even in April snow occurs, and once, within ten years, on the 26th of May the ground was frozen hard. Usually, however, the frogs begin their croaking, and the turtles emerge from their muddy winter quarters, about the last of March, and by the first week of April the grass shows green about the meadow springs. In the summer the temperature is often excessive, the mercury reaching in the shade from 90° to 98° Fahrenheit. The hottest and driest month of the year is August. In June and July an uncomfortably cold wave dominates occasionally for days, necessitating a fire in the houses in the evening to keep their occupants warm. The same months often witness heavy rains, causing the rivers and creeks to overflow, and consequently greatly damaging the crops of the low land. These extremes of temperature and rain-fall play havoc among the birds, the cold and wet not only killing the young of many species, but even the parents themselves, accustomed to tropical climates, either die or are driven south. The fall, beginning with September, is the most delightful season of the whole year, and probably can not be surpassed in beauty by any climate of the world. The being is indeed a mental sluggard, who is not moved by the daily changes wrought in leaf and feather during this kaleidoscopic period. The winter, occasionally very mild, so mild that ice sufficient for summer use is not produced, is usually of considerable severity. Alternating freezing and thawing weather with snow is common; while at intervals of a few years bitter cold and heavy snow storms are experienced. At these times the mercury falls below zero, having once recently reached —28°, and the snow blockades the thoroughfares of the town and country. Surrounded by every necessity and many luxuries, having warm houses and suitable clothing to withstand cold and storm, we nevertheless suffer from these severe winters, and welcome with outstretched hands the first flowers of the year. How much dearer to the hardy tribe of feathered residents must be the first warm air of spring. They are exposed to all the hardships of the time. They labor for months during day-time for a scanty sustenance, while at night, often stiffened with cold, they slumber to the monotonous sighing of the forest trees. Do you wonder, kind reader, that April should bring joy to hearts of our resident birds.

* * *

The Smithsonian Catalogue of North American Birds, published in 1881, contains 764 species; of these 292 have been found at various times within the limits of Ohio. The number of species which breed in the State is, however, very much smaller, amounting to but 129, or, if the probable summer-residents are counted, to 171. The species which are found may be divided into at least four classes.

1st. The species which rear their young here. *These may or may not winter elsewhere.*—Summer-residents.

2d. The species which are found in winter as well as in summer. *The birds found in winter are not necessarily the same ones reared here. Often birds born here go south, and their places are taken during the cold months by a hardier northern race of the same species.*—Permanent residents.

3d. The species which probably occur accidentally in small numbers in limited sections of the State, or regularly in small numbers in certain localities, nests of which have not been found, or, if found, not perfectly identified.—Probable residents and summer-residents.

4th. The species which have been taken or recorded by competent observers from the earliest lists up to the present time.—Permanent residents, summer-residents, winter-residents, and visitors.

The following lists give the names of the birds comprised in each of these four divisions:

I.

List of summer-residents, arranged according to families:

- | | | |
|---------------------------------|-----------------------------|--------------------------------|
| 1. Wood Thrush. | 36. White-eyed Vireo. | 71. Kingbird. |
| 2. Wilson's Thrush. | 37. Loggerhead Shrike. | 72. Great Crested Flycatcher. |
| 3. Hermit Thrush. | 38. Cedar Wax-wing. | 73. Phoebe Bird. |
| 4. American Robin. | 39. Purple Martin. | 74. Wood Pewee. |
| 5. Mockingbird.* | 40. Cliff Swallow. | 75. Acadian Flycatcher. |
| 6. Catbird. | 41. Barn Swallow. | 76. Traill's Flycatcher. |
| 7. Brown Thrasher. | 42. White-bellied Swallow. | 77. Ruby-throated Hummingbird. |
| 8. Bluebird. | 43. Bank Swallow. | 78. Chimney Swift. |
| 9. Blue-Gray Gnatcatcher. | 44. Rough-winged Swallow. | 79. Whip-poor-will. |
| 10. Tufted Titmouse. | 45. Scarlet Tanager. | 80. Nighthawk. |
| 11. Black-capped Chickadee. | 46. Summer Redbird. | 81. Hairy Woodpecker. |
| 12. Carolina Chickadee. | 47. Purple Finch.* | 82. Downy Woodpecker. |
| 13. White-bellied Nuthatch. | 48. American Goldfinch. | 83. Red-bellied Woodpecker.* |
| 14. Carolina Wren. | 49. Savannah Sparrow.* | 84. Red-headed Woodpecker. |
| 15. Bewick's Wren. | 50. Grass Finch. | 85. Yellow-shafted Flicker. |
| 16. House Wren. | 51. Yellow-winged Sparrow. | 86. Belted Kingfisher. |
| 17. Long-billed Marsh Wren. | 52. Lark Finch. | 87. Yellow-billed Cuckoo. |
| 18. Black and White Creeper. | 53. Chipping Sparrow. | 88. Black-billed Cuckoo. |
| 19. Prothonotary Warbler.* | 54. Field Sparrow. | 89. American Long-eared Owl.* |
| 20. Blue-winged Yellow Warbler. | 55. Song Sparrow. | 90. Short-eared Owl.* |
| 21. Golden-winged Warbler. | 56. Swamp Sparrow.* | 91. Barred Owl. |
| 22. Blue-yellow-backed Warbler. | 57. Chewink. | 92. Little Screech Owl. |
| 23. Summer Yellowbird. | 58. Cardinal Grosbeak. | 93. Great Horned Owl. |
| 24. Black and Yellow Warbler. | 59. Rose-breasted Grosbeak. | 94. Sparrow Hawk. |
| 25. Cerulean Warbler. | 60. Indigo Bunting. | 95. American Osprey.* |
| 26. Chestnut-sided Warbler. | 61. Black-throated Bunting. | 96. Marsh Hawk. |
| 27. Golden-crowned Thrush. | 62. Bobolink. | 97. Cooper's Hawk. |
| 28. Large-billed Water Thrush.* | 63. Cowbird. | 98. Sharp-shinned Hawk. |
| 29. Kentucky Warbler.* | 64. Red-winged Blackbird. | 99. Red-tailed Hawk. |
| 30. Maryland Yellow-throat. | 65. Meadow Lark. | 100. Red-shouldered Hawk. |
| 31. Yellow-breasted Chat. | 66. Orchard Oriole. | 101. Broad-winged Hawk. |
| 32. American Redstart. | 67. Baltimore Oriole. | 102. Turkey Buzzard. |
| 33. Red-eyed Vireo. | 68. Bronzed Grackle. | 103. Passenger Pigeon. |
| 34. Warbling Vireo. | 69. Common Crow. | 104. Mourning Dove. |
| 35. Yellow-throated Vireo.* | 70. Blue Jay. | 105. Wild Turkey.* |

- | | | |
|-------------------------|---------------------------|--------------------------|
| 106. Ruffed Grouse. | 114. American Woodcock. | 122. American Coot. |
| 107. Prairie Hen.* | 115. Solitary Sandpiper. | 123. Mallard. |
| 108. Bob-White. | 116. Bartram's Sandpiper. | 124. Blue-winged Teal. |
| 109. Great Blue Heron. | 117. Spotted Sandpiper. | 125. Wood Duck. |
| 110. Green Heron. | 118. Red-breasted Rail. | 126. Florida Cormorant.* |
| 111. American Bittern.* | 119. Virginia Rail. | 127. Black Tern. |
| 112. Least Bittern. | 120. Sora Rail. | 128. Horned Grebe. |
| 113. Killdeer. | 121. Florida Gallinule. | 129. Thick-billed Grebe. |

Foreign species.—1. English Sparrow.

The star (*) indicates that the species is of rare or accidental occurrence, or limited to special localities.

II.

List of permanent residents:

- | | | |
|----------------------------|------------------------------|--------------------------|
| 1. American Robin.* | 15. Common Crow. | 29. Marsh Hawk.* |
| 2. Bluebird.* | 16. Blue Jay. | 30. Cooper's Hawk. |
| 3. Tufted Titmouse. | 17. Hairy Woodpecker. | 31. Sharp-shinned Hawk. |
| 4. Black-capped Chickadee. | 18. Downy Woodpecker. | 32. Red-tailed Hawk. |
| 5. Carolina Chickadee.* | 19. Red-bellied Woodpecker. | 33. Red-shouldered Hawk. |
| 6. White-bellied Nuthatch. | 20. Red-headed Woodpecker. | 34. Broad-winged Hawk. |
| 7. Carolina Wren. | 21. Yellow-shafted Flicker. | 35. Turkey Buzzard.* |
| 8. Loggerhead Shrike. | 22. Belted Kingfisher.* | 36. Mourning Dove. |
| 9. Cedar Wax-wing. | 23. American Long-eared Owl. | 37. Wild Turkey. |
| 10. American Goldfinch. | 24. Short-eared Owl. | 38. Ruffed Grouse. |
| 11. Song Sparrow. | 25. Barred Owl. | 39. Prairie Hen. |
| 12. Cardinal Grosbeak. | 26. Little Screech Owl. | 40. Bob-White. |
| 13. Meadow Lark. | 27. Great Horned Owl. | 41. Mallard.* |
| 14. Bronzed Grackle.* | 28. Sparrow Hawk. | |

The star (*) indicates only an accidental winter-resident, or that the species remains in limited numbers in unusually mild winters.

III.

List of probable residents and summer-residents:

- | | | |
|----------------------------------|--------------------------------|---------------------------|
| 1. Ruby-crowned Kinglet. | 15. Snowbird. | 29. Semipalmated Tattler. |
| 2. Winter Wren. | 16. Tree Sparrow. | 30. Long-billed Curlew. |
| 3. Short-billed Marsh Wren. | 17. Yellow-headed Blackbird. | 31. Night Heron. |
| 4. Horned Lark. | 18. Least Flycatcher. | 32. Sandhill Crane. |
| 5. Worm-eating Warbler. | 19. Yellow-bellied Flycatcher. | 33. Yellow Rail. |
| 6. Black-throated Green Warbler. | 20. Pilcated Woodpecker. | 34. Black Rail. |
| 7. Prairie Warbler. [Warbler. | 21. Barn Owl. | 35. Purple Gallinule. |
| 8. White-browed Yellow-throated | 22. Aeadian Owl. | 36. Black Mallard. |
| 9. Pine-creeping Warbler. | 23. Duck Hawk. | 37. Gadwall. |
| 10. Connecticut Warbler. | 24. Bald Eagle. | 38. Shoveller. |
| 11. Hooded Fly-catching Warbler. | 25. Piping Plover. | 39. Lesser Blackhead. |
| 12. Blue-headed Vireo. | 26. Stilt. | 40. Merganser. |
| 13. Common Crossbill. | 27. Wilson's Phalarope. | 41. Hooded Merganser. |
| 14. Pine Linnet. | 28. Wilson's Snipe. | 42. Loon. |

IV.

The following list, copied from Vol. IV, "Geological Survey of Ohio," contains every species which has been found within the limits of Ohio. The dates are those of ordinary observation, or of the times of capture. The nomenclature and order is that of Ridgway's Check List of 1881.

1. *Hylocichla mustelina* (Gm.) Baird. April 29—, 75; May 5—, 76; April 20—, 78; 18—, 80.
Wood Thrush. 1.
2. *Hylocichla fuscescens* (Steph.) Baird. May 2–21, Sept. 23, 73; April 20, Aug. 25, 74; May 5–19, 75; 5, 76;
Wilson's Thrush. 2. 5, 77; 7, 78; April 22, 80.
3. *Hylocichla alixiae* Baird. May 3–12, Sept. 15, 73; May 7, Sept. 13–28, 74; May 8–21, 75; 7,
Gray-checked Thrush. 3. 76; 4, 77; 5, 78.
4. *Hylocichla ustulata swainsoni* (Caban.) Ridgw. May 9, Sept. 3–19, 73; May 8, Sept. 7–29, 74; April 28–May 19, 75;
Olive-backed Thrush. 4a. May 5, 76; 16, 77; 5, Aug. 26, 78.
5. *Hylocichla ustulata pallasii* (Caban.) Ridgw. April 5, Oct. 12, 73; Mar. 26–May 2, Sept. 30, 74; April 3, 75; 19,
Hermit Thrush. 5b. 76; 15–23, 77.
6. *Merula migratoria* (Linn.) Sw. and Rich. Dec. 10, 73; Feb. 27—, 75; 26—, 76; Jan. 28—, 77; Feb. 27—, 78;
Robin. 7. Mar. 5—, 79; wintered, 79–80.
7. *Mimus polyglottus* (Linn.) Boie. Mockingbird. 11.
8. *Catantopus carolinensis* (Linn.) Caban. April 27—, 73; 29–Sept. 25, 74; May 1—, 75; April 21–Sept. 25,
Catbird. 12. 76; April 23—, 77; 19—, 78; 18—, 80.
9. *Harpodichthys rufus* (Linn.) Caban. April 14—, 73; Oct. 7, 74; April 7—, 75; 7—, 76; 16—, 77;
Brown Thrasher. 13. 23—, 79.
10. *Sialia sialis* (Linn.) Haldem. Feb. 14—, 74; 22—, 75; 26—, 76; Jan. 28—, 77; Feb. 28—, 78;
Bluebird. 22. wintered, 78–79; do. 79–80.
11. *Poliophtila caerulea* (Linn.) Sel. April 13—, 73; 18—, 74; 10—, 75; 7—, 76; 14—, 78.
Blue-gray Gnatcatcher. 27.
12. *Regulus calendula* (Linn.) Licht. April 13, Sept. 29, 74; April 12–May 19, 75; Oct. 8, 76; April
Ruby-crowned Kinglet. 30. 3, 77.
13. *Regulus satrapa* (Linn.) Bp. April 4, Oct. 6, 73; Mar. 24, Oct. 18, 74.
Golden-crowned Kinglet. 33.
14. *Lophophanes bicolor* (Linn.) Bp. Resident.
Tufted Titmouse. 36.
15. *Parus atricapillus* Linn. Dec. 19, 73; Nov. 9–Dec. 10, 74; Nov. 12, 77.
Black-capped Chickadee. 41.
16. *Parus carolinensis* Aud. June 27, 73; April 18–July 23, 74; April 20—, 76; 24—, 77; 25—,
Carolina Chickadee. 42. 78; 13—, 79.
17. *Sitta carolinensis* Gm. Resident.
White-bellied Nuthatch. 51.
18. *Sitta canadensis* Linn. Sept. 3–24, 74; May 7–15, 75.
Red-bellied Nuthatch. 52.
19. *Sitta pusilla* Lath. Brown-headed Nuthatch. 53.

20. *Certhia familiaris rufa* (Bartr.) Ridgw.
Brown Creeper. 55. April 4, Dec. 10, 73; Jan. 31, Sept. 28-Dec. 12, 74; Nov. 17, 76, Jan. 27, 77.
21. *Thryothorus ludovicianus* (Gm.) Bp.
Carolina Wren. 60. Resident.
22. *Thryothorus bewicki* (Aud.) Baird.
Bewick's Wren. 61. See Appendix.
23. *Troglodytes aedon* Vieill.
House Wren. 63. April 27—, 73; May 1—, 74; 4—, 75; April 22—, 76; May 4—, 77; April 19—, 78; 23—, 79; 20—, 80.
24. *Anorthura troglodytes lujemalis* (Vieill.) Coues.
Winter Wren. 65. Oct. 13, 73; May 9, Sept. 30-Oct. 13, 74; April 1-May 1, 75; April 5-19, 77; 2, Nov. 2, 78.
25. *Telmatodytes palustris* (Wils.) Baird.
Long-billed Marsh Wren. 67. April 28, 73; Oct. 13, 74; May 11, Oct. 18, 76.
26. *Cistothorus stellaris* (Licht.) Caban.
Short-billed Marsh Wren. 68.
27. *Anthus ludovicianus* (Gm.) Licht.
American Titlark. 71. Oct. 7, 73; May 4-6, Oct. 3-23, 74; April 12-28, Sept. 26, 75; May 3-8, Oct. 9, 76; April 8-May 10, Oct. 1, 77; April 19, 78.
28. *Mniotilta varia borealis* (Nutt.) Ridgw.
Small-billed Creeper. 74a. June 27, 73; April 27-Sept. 17, 74; April 29—, 75; 26—, 76.
29. *Protonotaria citrea* (Bodd.) Baird.
Prothonotary Warbler. 75.
30. *Helminthoherus vermivorus* (Gm.) Salv. and Godm.
Worm-eating Warbler. 77. April 23—, 74; 25—, 78.
31. *Helminthophaga cincinnatiensis* Langdon.
Cincinnati Warbler. 78. See appendix—Additions.
32. *Helminthophaga pinus* (Linn.) Baird.
Blue-winged Yellow Warbler. 79. June 27, 73; May 8—, 74; July 13, 77.
33. *Helminthophaga chrysoptera* (Linn.) Baird.
Golden-winged Warbler. 81. May 17, 75.
34. *Helminthophaga ruficapilla* (Wils.) Baird.
Nashville Warbler. 85. Sept. 10, 73; May 9, Sept. 15-Oct. 1, 74; May 12-19, 75.
35. *Helminthophaga celata* (Say) Baird.
Orange-crowned Warbler. 86. May 15-17, 75.
36. *Helminthophaga peregrina* (Wils.) Baird.
Tennessee Warbler. 87. Sept. 15-26, 73; May 14-18, Sept. 2-Oct. 7, 74; Sept. 5-25, 76.
37. *Parula americana* (Linn.) Bp.
Blue Yellow-backed Warbler. 88. May 15, Sept. 15, 74; May 14, 77; June 30, 79.
38. *Perissoglossa tigrina* (Gm.) Baird.
Cape May Warbler. 90. May 8-17, 75; Sept. 25, 76.
39. *Dendroica aestiva* (Gm.) Baird.
Summer Yellowbird. 93. April 30—, 73; May 1-Aug., 74; May 2—, 75; April 28—, 76; 15—, 78; 23—, 79; 19—, 80.
40. *Dendroica caerulescens* (Linn.) Baird.
Black-throated Blue Warbler. 94. May 19, 73; 9, Sept. 4, 74; May 10-19, 75; 17, 76; 14-21, 77.
41. *Dendroica coronata* (Linn.) Gray.
Yellow-rump Warbler. 95. Oct. 13, 73; May 2, Sept. 2-Oct. 23, 74; May 8-18, 75; April 21, Oct. 18-Nov. 5, 76; April 26, 77; 19, 78.

42. *Dendroica maculosa* (Gm.) Baird.
Black-and-yellow Warbler. 97. May 20, Sept. 15, 73; May 8, Sept. 2-28, 74; May 11-22, 75; 7, Sept. 10-25, 76; May 14, 77.
43. *Dendroica caerulescens* (Wils.) Baird.
Cerulean Warbler. 98. May 21-June 27, 73; May 8-, 74; 9-, 75; 14-, 76; 14-, 77; April 19-, 78.
44. *Dendroica pennsylvanica* (Linn.) Baird.
Chestnut-sided Warbler. 99. May 19, 73; 8, Sept. 2-20, 74; May 12-21, 75; 18, 76.
45. *Dendroica castanea* (Wils.) Baird.
Bay-breasted Warbler. 100. Sept. 15, 73; May 17, Sept. 7-Oct. 16, 74.
46. *Dendroica striata* (Forst.) Baird.
Black-poll Warbler. 101. May 26, Sept. 23, 73; May 17, Sept. 14-Oct. 17, 74; May 17, 75; 18-26, Oct. 16, 76.
47. *Dendroica blackburnia* (Gm.) Baird.
Blackburnian Warbler. 102. May 13, Sept. 25, 73; May 8, Sept. 5-26, 74; May 12-19, 75; 14, 77.
48. *Dendroica dominica albiflora* Baird.
White-browed, Yellow-throated Warbler. 103a. April 19, Sept. 23, 73; Sept. 7, 74; May 8-Aug. 22, 75; April 19-Aug. 16, 76; April 7-, 77; 14-, 78; 13-, 79.
49. *Dendroica virens* (Gm.) Baird.
Black-throated Green Warbler. 107. May 9-20, 73; 5, Sept. 7-30, 74; May 17, 76; April 18, 80.
50. *Dendroica kirtlandi* Baird.
Kirtland's Warbler. 110.
51. *Dendroica pinus* (Wils.) Baird.
Pine-creeping Warbler. 111. May 8, 75.
52. *Dendroica palmarum* (Gmel.) Baird.
Red-poll Warbler. 113. Nov. 7, 74; May 6-15, 75; April 26, Oct. 27, 76.
53. *Dendroica discolor* (Vieill.) Baird.
Prairie Warbler. 114. May 15, 75.
54. *Siurus auricapillus* (Linn.) Swains.
Golden-crowned Thrush. 115. May 18-Sept. 18, 73; April 20-Oct. 1, 74; April 29-, 75; May 4-, 76; Aug. 26, 78; April 23-, 80.
55. *Siurus naevius* (Bodd.) Coues.
Small-billed Water Thrush. 116. Oct. 17, 74; April 26-May 13, 75; 4, Sept. 25, 76; April 15-30, 77; 19, 78.
56. *Siurus motacilla* (Vieill.) Coues.
Large-billed Water Thrush. 117. July 25, 74; June 19, 75; April 15-, 77; 21-, 78.
57. *Oporornis agilis* (Wils.) Baird.
Connecticut Warbler. 118. Sept. 16, 74; May 22, 75.
58. *Oporornis formosa* (Wils.) Baird.
Kentucky Warbler. 119.
59. *Geothlypis philadelphia* (Wils.) Baird.
Mourning Warbler. 120. Sept. 2-30, 74; May 21-26, 75; 16, 76.
60. *Geothlypis trichas* (Linn.) Caban.
Maryland Yellow-throat. 122. May 5-, 73; 11-, 74; 7-, 75; 1-, 76; April 28-, 78.
61. *Icteria virens* (Linn.) Baird.
Yellow-breasted Chat. 123. June 6-, 73; May 6-, 74; 7-, 76; 14-, 77; 7-, 78.
62. *Myiodioctes mitratus* (Gmel.) Aud.
Hooded Warbler. 124. Aug. 25, 74; May 21, 75.
63. *Myiodioctes pusillus* (Wils.) Bp.
Black-capped Yellow Warbler. 125. May 22, Sept. 18, 73; Sept. 2-28, 74; 8-22, 75; 16, 76; 18, 77.

64. *Myiodiocetes canadensis* (Linn.) Aud.
Canadian Flycatching Warbler. 127. May 13, 73; 11, 74; 8-22, 75; 23, 76; 5, 78.
65. *Setophaga ruticilla* (Linn.) Swains.
American Redstart. 128. May 5—, 73; 11—, 74; 9—, 75; 5—, 76; April 23—, 77.
66. *Vireosylva olivacea* (Linn.) Bp.
Red-eyed Vireo. 135. April 30—, 73; May 7-Sept. 28, 74; May 8—, 75; 1—, 76; 16—, 77; April 25—, 78.
67. *Vireosylva philadelphia* Cass.
Philadelphia Vireo. 138. Sept. 16, 73; May 8, Sept. 29, 30, 74; May 18, 19, 76.
68. *Vireosylva gilva* (Vicill.) Cass.
Warbling Vireo. 139. May 2-Sept. 14, 74; May 8—, 75; 1—, 76; April 23—, 77; 19—, 78; 23—, 79; 22—, 80.
69. *Lanivireo flavifrons* (Vicill.) Baird.
Yellow-throated Vireo. 140. May 5-Sept. 15, 74; May 8—, 75.
70. *Lanivireo solitarius* (Vicill.) Baird.
Blue-headed Vireo. 141. May 1, Sept. 23, 73; Sept. 23-30, 74; May 13, 14, 75.
71. *Vireo noveboracensis* (Gmel.) Bp.
White-eyed Vireo. 143.
72. *Lanius borealis* Vicill.
Great Northern Shrike. 148. April 14-27, 73; March 30, 74; Feb. 27, 75; Nov. 7, 76.
73. *Lanius ludovicianus* Linn.
Loggerhead Shrike. 149. May 16—, 73; April 7-Aug. 31, 74; Mar. 23—, 75; Mar. 4—, 76; 4—, 77.
- 73a. *Lanius ludovicianus excubitorides* (Sw.) Coues.
White-rumped Shrike. 149a. May 16, 73.
74. *Ampelis garrulus* Linn.
Northern Wax-wing. 150.
75. *Ampelis cedrorum* (Vicill.) Baird.
Cedar Wax-wing. 151. April 4—, 73; May 25—, 74; 14—, 76; Nov. 2, 78; wintered, 80, 81.
76. *Progne subis* (Linn.) Baird.
Purple Martin. 152. March 30—, 73; April 13-Aug., 74; April 7—, 75; 7—, 76; 1—, 77; 2—, 78; March 28—, 79.
77. *Petrochelidon lunifrons* (Say) Lawr.
Cliff Swallow. 153. May 10—, 75; 2—, 76; April 21—, 77; April 21, 78.
78. *Hirundo erythrogastra* Bodd.
Barn Swallow. 154. April 12—, 75; 22—, 76; 15—, 77; 9—, 78.
79. *Tachycineta bicolor* (Vicill.) Caban.
White-bellied Swallow. 155. April 8-Aug., 74; April 19—, 76; March 28—, 77; April 9—, 78; 14—, 79.
80. *Cotile riparia* (Linn.) Boie.
Bank Swallow. 157. May 6—, 75; April 23—, 76; 23—, 77.
81. *Stelgidopteryx serripennis* (Aud.) Baird.
Rough-winged Swallow. 158. April 18-Aug., 74; May 6—, 75; April 22—, 76; 21—, 77; 16—, 78; 20—, 79.
82. *Pyrranga rubra* (Linn.) Vicill.
Scarlet Tanager. 161. May 2—, 73; 7—, 74; 16—, 75; 12—, 76; April 26—, 77; May 5—, 78.
83. *Pyrranga aestiva* (Linn.) Vicill.
Summer Redbird. 164.
84. *Hesperiphona vespertina* (Cooper) Bp.
Evening Grosbeak. 165.

85. *Pinicola enucleator* (Linn.) Vieill.
Pine Grosbeak. 166.
86. *Carpodacus purpureus* (Gm.) Baird.
Purple Finch. 168. Feb. 12–April 18, Oct. 13–Nov. 7, 74; April 7, 75; Jan. 19, 77; Nov. 2, 78.
87. *Loxia curvirostra americana* (Wils.) Coues.
American Crossbill. 172. June 18, 78.
88. *Loxia leucoptera* Gm.
White-winged Cross-bill. 173.
89. *Ægiolhus linaria* (Linn.) Caban.
Common Redpoll. 179.
90. *Astragalinus tristis* (Linn.) Caban.
American Goldfinch. 181. Resident.
91. *Chrysomitris pinus* (Wils.) Bp.
Pine Goldfinch. 185. Nov. 29, 73; Dec. 19, 76; Nov. 2, 78.
92. *Plectrophanes nivalis* (Linn.) Meyer.
Snow Bunting. 186. Feb. 19, 75; Jan. 27, 77.
93. *Centropheanes lapponicus* (Linn.) Caban.
Lapland Longspur. 187. Feb. 8, 74; 19–27, Nov. 28—, 75; Nov. 7, 76; Jan. 6–13, 77.
- *Passer domesticus* Linn.
English Sparrow. Imported. Resident.
94. *Passerculus sandwichensis savanna* (Wils.) Ridg.
Savannah Sparrow. 193a. Sept. 27, 73; April 6–May 6, Sept. 11, 74; April 8–May 24, 75; April 20–May 3, 76.
95. *Poæcetes gramineus* (Gm.) Baird.
Grass Finch. 197. March 28—, 73; 22—, 75; April 6—, 76; 2—, 77; March 22—, 78.
96. *Coturniculus passerinus* (Wils.) Bp.
Yellow-winged Sparrow. 198. May 6–Sept., 74; April 30—, 75; May 3, 76; April 26—, 77.
97. *Coturniculus henslowi* (Aud.) Bp.
Henslow's Sparrow. 199.
98. *Chondestes grammica* (Say) Bp.
Lark Finch. 204. April 30—, 73; May 7–Sept. 28, 74; April 30—, 75; 19—, 76; 22—, 77; 21—, 78.
99. *Zonotrichia leucophrys* (Forst.) Swains.
White-crowned Sparrow. 206. May 1, Nov. 1, 73; May 2, Oct. 13–17, 74; May 8–11, 75; 4–7, Oct. 18–27, 76; April 23, 77; 28, 78.
100. *Zonotrichia albicollis* (Gm.) Bp.
White-throated Sparrow. 209. April 15, Sept. 16, 73; April 23, Sept. 29, 74; April 26, 75; 20, Oct. 18, 76; April 23, 77; 19, 78; 20, 79.
101. *Spizella montana* (Forst.) Ridgw.
Tree Sparrow. 210. Nov. 2, 73–Jan. 31, Nov. 7—, 74; 9, 77.
102. *Spizella domestica* (Bart.) Coues.
Chipping Sparrow. 211. April 3—, 73; 1—, Nov. 4, 74; Mar. 30—, 75; April 10—, 76; April 2—, 77; Mar. 27—, 78; 24—, 79.
103. *Spizella pusilla* (Wils.) Bp.
Field Sparrow. 214. April 16—, 73; Mar. 30—, 74; 25—, 75; April 15—, 76; 8—, 77; Mar. 28—, 78.
104. *Junco hyemalis* (Linn.) Sel.
Black Snowbird. 217. Oct. 12, 73–May 9, Sept. 28, 74–May 8, 75; Oct. 1, 76.
105. *Melospiza fasciata* (Gmel.) Scott.
Song Sparrow. 231. Resident.

106. *Melospiza palustris* (Wils.) Baird.
Swamp Sparrow. 233. May 1, Sept. 29-Oct. 17, 74; April 21, 76; 13, 79.
107. *Melospiza lincolni* (Aud.) Baird.
Lincoln's Finch. 234. May 15, 73; Oct. 17, 18, 74; May 10-24, 75; 17, 77.
108. *Passerella iliaca* (Merrem.) Sw.
Fox-colored Sparrow. 235. Oct. 29, 73; Mar. 7-24, Oct. 13-Nov. 7, 74; Mar. 18, 75; 13, 76;
Feb. 27, 77; Mar. 9, 79.
109. *Pipilo erythrophthalmus* (Linn.) Vieill.
Chewink; Towhee. 237. Mar. 19—, Dec. 10, 73; Mar. 24—, 74; 18—, 75; April 11—, 77;
Mar. 15—, 78.
110. *Cardinalis virginianus* (Briss.) Bp.
Cardinal Grosbeak. 242. Resident.
111. *Zamelodia ludoviciana* (Linn.) Coues.
Rose-breasted Grosbeak. 244. May 4, 73; 3-June 3, Sept. 12-23, 74; May 11-19, 75; 14—, 76;
5—, 78.
112. *Passerina carulea* (Linn.) Swains.
Indigo Bunting. 248. May 11—, 73; 10—, 74; 10—, 75; 7—, 76; April 30—, 77; May
5—, 78.
113. *Spiza americana* (Gm.) Bp.
Black-throated Bunting. 254. May 11—, 73; 4, 74; 6—, 75; 4—, 76; 7—, 77; April 28—, 78.
114. *Dolichonyx oryzivorus* (Linn.) Swains.
Bobolink. 257. May 4—, 73; 2-Aug. 13, 74; 7—, 76; April 30—, 77; May 5—, 78.
115. *Molothrus ater* (Bodd.) Gray.
Cowbird. 258. April 14-Oct. 13, 73; Mar. 30—, 74; Oct. 18, 76.
116. *Xanthocephalus icterocephalus* (Bp.) Baird.
Yellow-headed Blackbird. 260.
117. *Agelaius phoeniceus* (Linn.) Vieill.
Red-and-buff-shouldered Blackbird. 261. Mar. 6-Oct. 17, 74; Mar. 25—, 75; Feb. 25-Oct. 18, 76; Feb. 20—,
77; Mar. 10—, 79.
118. *Sturnella magna* (Linn.) Swains.
Meadow Lark. 263. Mar. 10—, 73; Feb. 12-Oct. 13, 74; Mar. 12—, 75; Feb. 26—, 76;
wintered, 76, 77; Feb. 24—, 80.
119. *Icterus spurius* (Linn.) Bp.
Orchard Oriole. 270. May 4-Aug., 74; May 8—, 75; 7—, 76; 4—, 77; 5—, 78.
120. *Icterus galbula* (Linn.) Coues.
Baltimore Oriole. 271. April 30—, 73; May 1—, Sept. 24, 74; May 4—, 75; April 29—, 76;
23—, 77; 19—, 78; 22—, 80.
121. *Scolecophagus ferrugineus* (Gm.) Swains.
Rusty Blackbird. 273. Sept. 9, 73; April 18, Oct. 17, 74; March 12-April 24, 75; April 30,
77.
122. *Quiscalus purpureus aeneus* Ridgw.
Bronzed Grackle. 278b. Oct. 5, 73; Mar. 2—, 74; Mar. 12—, 75; Feb. 26-Nov. 7, 76; Feb.
Feb. 20—, 77; Mar. 9—, 79.
123. *Corvus corax carnivorus* (Bartr.) Ridgw.
American Raven. 280.
124. *Corvus frugivorus* Bartr.
Common Crow. 282. Feb. 14-Oct. 17, 74; Jan. 28—, 77; Mar. 9—, 79.
125. *Cyanocitta cristata* (Linn.) Strickl.
Blue Jay. 289. Resident.
- , *Alauda arvensis* Linn.
Sky Lark. 299.
126. *Eremophila alpestris* (Forst.) Boic.
Shore Lark. 300. Nov. 9—, 74; Oct. 31—, 75; 18, 76-Mar. 28, 77; Nov. 1—, 77.

127. *Tyrannus carolinensis* (Linn.) Temm.
Kingbird; Bee Martin. 304. May 4—, 73; 1—, 74; 6—, 75; 1—, 76; April 21—, 78.
128. *Myiarchus crinitus* (Linn.) Caban.
Great Crested Flycatcher. 312. May 4—, 73; 3—, 74; 8—, 75; 1—, 76; 14—, 77; April 25—, 78.
129. *Sayornis fuscus* (Gmel.) Baird.
Phoebe Bird; Pewee. 315. Nov. 3, 74; Mar. 14—, 75; 13—, 76; 24—, 77; 27—, 78; 9—, 79.
130. *Contopus borealis* (Swains.) Baird.
Olive-sided Flycatcher. 318.
131. *Contopus virens* (Linn.) Caban.
Wood Pewee. 320. May 12—, 73; 10—, 74; 9—, 75; 8—, 76; 14—, 77; 5—, 78.
132. *Empidonax flaviventris* Baird.
Yellow-bellied Flycatcher. 322. May 8-22, 75; 16-20, 76; 18, 77.
133. *Empidonax acadicus* (Gmel.) Baird.
Acadian Flycatcher. 324. May 21—, 73; Aug. 26, 74; May 14—, 76; 17—, 77; 5—, 78.
134. *Empidonax pusillus trailli* (Aud.) Baird.
Traill's Flycatcher. 325a. May 18-Aug., 74; May 15—, 75; 13—, 76; 21—, 77; 8—, 78.
135. *Empidonax minimus* Baird.
Least Flycatcher. 326. May 12, 73; 6, 74; 7-24, Aug. 22, 75; Aug. 28, 76, May 7-9, 77.
136. *Trochilus colubris* Linn.
Ruby-throated Hummingbird. 335. May 6-Oct. 2, 73; May 5-Sept. 27, 74; May 10-Oct. 16, 75; May 13—, 76; 9—, 77; 5—, 78.
137. *Chatura pelagica* (Linn.) Baird.
Chimney Swift. 351. April 18-Oct. 13, 74; April 14—, 76; April 18—, 78.
138. *Caprimulgus vociferus* Wils.
Whip-poor-will. 354. May 5, 74; 2, 76; 25, 77.
139. *Chordeiles popetue* (Vieill.) Bl.
Nighthawk. 357. May 20—, 73; 11, 74; 13—, 75; 7—, 76; 15, 77; Aug. 26, 78.
140. *Picus villosus* Linn.
Hairy Woodpecker. 360. Resident.
141. *Picus pubescens* Linn.
Downy Woodpecker. 361. Resident.
142. *Picoïdes arcticus* (Swains.) Gray.
Black-backed three-toed Woodpecker. 367.
143. *Sphyrapicus varius* (Linn.) Baird.
Yellow-bellied Woodpecker. 369. April 4, 73; 5, 75; 20, 76; 2-16, 77; 19, 78; 13, 79.
144. *Hylotomus pilcatus* (Linn.) Baird.
Pilcated Woodpecker; Logcock. 371. April —, 1861.
145. *Centurus carolinus* (Linn.) Bp.
Red-bellied Woodpecker. 372. Resident.
146. *Melanerpes erythrocephalus* (Linn.) Swains.
Red-headed Woodpecker. 375. April 13-Dec. 19, 73; Mar. 30—, 74; April 30—, 75; 21—, 77; 19—, 78.
147. *Colaptes auratus* (Linn.) Swains.
Yellow-shafted Flicker. 378. Resident.
148. *Ceryle alcyon* (Linn.) Boie.
Belted Kingfisher. 382. Mar. 17-Oct. 28, 74; Mar. 13—, 76; April 3, 77; 6—, 79.

149. *Coccyzus americanus* (Linn.) Bp.
Yellow-billed Cuckoo. 387. May 13—, 78; 10—, 74; 19–Sept. 16, 76.
150. *Coccyzus erythrophthalmus* (Wils.) Baird.
Black-billed Cuckoo. 388. May 21—, 73; 13—, 74; 8—, 75; 3—, 78.
151. *Conurus carolinensis* (Linn.) Kuhl.
Carolina Parakeet. 392. July —, 1862. Observed by W. S. Sullivant.
152. *Aluco flammeus americanus* (Aud.) Ridgway.
American Barn Owl. 394. Nov. 2, 78; May 1, 1881.
153. *Asio americanus* (Steph.) Sharpe.
American Long-eared Owl. 395. Oct. 29, 74; Dec. 17, 76.
154. *Asio accipitrinus* (Pall.) Newton.
Short-eared Owl. 496. Nov. 4, 73.
155. *Strix nebulosa* Forst.
Barred Owl. 397. Feb. 11, Nov. 26, 74; 12, 77.
156. *Ulula cinerea* (Gmel.) Bp.
Great Gray Owl. 399.
157. *Nyctale acadica* (Gmel.) Bp.
Saw-whet Owl. 401. Jan. 11, 79.
158. *Scops asio* (Linn.) Bp.
Little Screech Owl. 402. Resident.
159. *Bubo virginianus* (Gm.) Bp.
Great Horned Owl. 405. Resident.
160. *Nyctale scandiaca* (Linn.) Newt.
Snowy Owl. 406. Jan. —, 1858.
161. *Surnia funerea* (Linn.) Sw. & Rich.
American Hawk Owl. 407.
162. *Falco peregrinus naevius* (Gm.) Ridgw.
Peregrine Falcon; Duck Hawk. 414. Dec. —, 1869.
163. *Falco columbarius* (Linn.) Kaup.
Pigeon Hawk. 417. Dec. 19, 73; Nov. 7, 76.
164. *Tinnunculus sparverius* (Linn.) Vieill.
Sparrow Hawk. 420. Oct. 5, 74; Mar. 23—, 75; 75–76, wintered.
165. *Pandion haliaetus carolinensis* (Gm.) Ridgw.
American Osprey; Fish Hawk. 425. Sept. 4, 76.
166. *Elanoides forficatus* (Linn.) Ridgw.
Swallow-tailed Kite. 426. Aug. 22, 78; Licking County.
167. *Circus hudsonius* (Linn.) Vieill.
Marsh Hawk. 430. Aug. 21, 78; 20, 79.
168. *Accipiter cooperi* Bonap.
Cooper's Hawk. 431. Resident.
169. *Accipiter fuscus* (Gmel.) Bp.
Sharp-shinned Hawk. 432. Jan. 19, 77; April 25–Nov. 2, 78.
170. *Astur atricapillus* (Wils.) Bp.
American Goshawk. 433.

171. *Buteo borealis* (Gm.) Vieill. Resident.
Red-tailed Hawk. 436.
172. *Buteo lineatus* (Gm.) Jard. Resident.
Red-shouldered Hawk. 439.
173. *Buteo pennsylvanicus* (Wils.) Bp. Resident.
Broad-winged Hawk. 443.
174. *Archibuteo lagopus sancti-johannis* (Gm.) Ridgw. Mar. 14, 75.
American Rough-legged Hawk. 447.
175. *Aquila chrysaetus canadensis* (Linn.) Golden Eagle. 449.
176. *Haliaeetus leucocephalus* (Linn.) Savig. Oct. 17, 74; Jan. 11, 77.
Bald Eagle; Gray Eagle. 451.
177. *Cathartes aura* (Linn.) Illig. Mar. 15—, 75; April 6—, 76.
Turkey Buzzard. 454.
178. *Catharista atrata* (Wils.) Less. Black Vulture; Carrion Crow. 455.
179. *Ectopistes migratoria* (Linn.) Sw. Oct. 13, 73; Mar. 24, Sept. 10—Oct. 1, 74.
Passenger Pigeon. 459.
180. *Zenaidura carolinensis* (Linn.) Bp. Mar. 2—, 74; 22—, 75; winters.
Mourning Dove. 460.
181. *Melagris gallopavo americana* (Bartr.) Coues. May 28, 66.
Wild Turkey. 470a.
182. *Bonasa umbellus* (Linn.) Steph. Sept. —, 1868.
Ruffed Grouse. 473.
183. *Cupidonia cupido* (Linn.) Bp. Nov. 16, 78.
Prairie Hen. 470.
184. *Ortyx virginiana* (Linn.) Bp. Resident.
Bob-white; American Quail. 480.
185. *Ardea herodias* Linn. March 21—Oct. 17, 74; June 5, 77.
Great Blue Heron. 487.
186. *Herodias alba egretta* (Gm.) Ridgw. Aug. 8, 73; 1, 77.
American Egret. 489.
187. *Garzetta candidissima* (Gm.) Bp. Snowy Heron. 490.
188. *Butorides virescens* (Linn.) Bp. April 14—, 73; 18—, 74; 24—, 75.
Green Heron. 494.
189. *Nycticorax grisea navia* (Bodd.) Allen. Oct. 17, 74.
Black-crowned Night Heron. 495.
190. *Botaurus lentiginosus* (Montag.) Steph. Oct. 28—Nov. 20, 73; April 21—, 78.
American Bittern. 497.
191. *Ardetta exilis* (Gm.) Gray. May 14, 76.
Least Bittern. 498.
192. *Tantalus loculator* Linn. Wood Ibis. 500.

193. *Plegadis falcinellus* (Linn.) Kaup.
Glossy Ibis. 503.
194. *Streptilas interpres* (Linn.) Illig.
Turnstone. 509.
195. *Squatarola helvetica* (Linn.) Cuv.
Black-bellied Plover. 513. May 12, 76.
196. *Charadrius dominicus* Mull.
American Golden Plover. 515. Sept. 2, 73; May 6, 74; April 21-29, Oct. 30, 75; April 16, 77.
197. *Oxyechus vociferus* (Linn.) Reich.
Killdeer. 516. Mar. 3—, 74; Feb. 25—, 75; 26—, 76; Mar. 8—, 77; 5, 79; Feb. 24—, 80.
198. *Ægialites semipalmatus* Bp.
Semipalmated Plover. 517. Aug. 16, 73; July 25, 74; Aug. 28, 75; 16, 76; 11, 77; May 17-19, 80.
199. *Ægialites melodus* (Ord.) Bp.
Piping Plover. 520. Aug. —, 1856.
200. *Philohela minor* (Gm.) Gray.
American Woodcock. 525. Mar. 3—, 74; April 16—, 77.
201. *Gallinago media wilsoni* (Temm.) Ridgw.
Wilson's Snipe. 526a. Mar.-May 5, 73; Mar. 27, Oct. 17, 74; April 5-May 7, 75; April 19, 76; May 4, 77.
202. *Macrorhamphus griseus* (Gm.) Leach.
Red-breasted Snipe; Gray Snipe. 527.
- 202a. *Macrorhamphus griseus scolopaceus* (Say) Coues.
Red-bellied Snipe; Greater Gray-back. 527a
203. *Micropalama himantopus* (Bp.) Baird.
Stilt Sandpiper. 528.
204. *Tringa canutus* Linn.
Knot; Robin Snipe. 529. May 27, 78. Licking Reservoir.
205. *Arquatella maritima* (Brunn.) Baird.
Purple Sandpiper. 530.
206. *Actodromas maculata* (Vicill.) Coues.
Pectoral Sandpiper. 534. Aug. 14, 73; Oct. 19, 74; April 10, Sept. 26, 75; Aug. 29, 76; April 20, 77; 19, 78.
207. *Actodromas fuscicollis* (Vieill.) Ridgw.
Bonaparte's Sandpiper. 536. Oct. —, 75.
208. *Actodromas bairdi* Coues.
Baird's Sandpiper. 537. Sept. 1, 76; Nov. 9, 77.
209. *Actodromas minutilla* (Vieill.) Bp.
Least Sandpiper. 538. Aug. 14, 73; 10, 74; 16, 76; 14, 77.
210. *Pelidna alpina americana* Cass.
Red-backed Sandpiper. 539a. Oct. 18, 76.
211. *Ereuntes pusillus* (Linn.) Cass.
Semipalmated Sandpiper. 541. Aug. 16, 73; July 24, 74; Aug. 28-Oct. 30, 75; Aug. 16, 76; 7, 77; 25, 78.
212. *Calidris arenaria* (Linn.) Illig.
Sanderling. 542. Oct. 7, 74.
213. *Limosa fæda* (Linn.) Ord.
Marble Godwit. 543. April 21, 1879.

214. *Limosa haemastica* (Linn.) Coues.
Hudsonian Godwit. 545. April —, 1857; May —, 1862.
215. *Totanus melanoleucus* (Gm.) Vieill.
Greater Yellow-legs; Tell-tale. 548. Sept. 4, 73; April 18, Aug. 6–Oct. 17, 74; April 21, 75; Aug. 16–
Nov. 14, 76; Aug. 30, 77.
216. *Totanus flavipes* (Gmel.) Vieill.
Yellow-legs. 549. April 14–May 16, Aug. 16, 73; Aug.–Oct. 17, 74; May 8, 76; Aug.
30, 77.
217. *Rhyacophilus solitarius* (Wils.) Cass.
Solitary Sandpiper. 550. April 24–July 29, 73; May 28–July 25, 74; April 18, 76.
218. *Symphemia semipalmata* (Gm.) Hartl.
Willet. 552.
219. *Machtes pugnax* (Linn.) Cuv.
Ruff. 554. Nov. 10, 72. Licking Reservoir.
220. *Bartramia longicauda* (Bechst.) Bp.
Bartram's Sandpiper; Field Plover. 555. Aug. 14, 73; April 27–Aug. 31, 74; April 10—, 75.
221. *Tryngites rufescens* (Vieill.) Caban.
Buff-breasted Sandpiper. 556. Aug. 31, 76.
222. *Tringoides macularius* (Linn.) Gray.
Spotted Sandpiper. 557. April 27—, 73; 18–Oct. 8, 74; April 10—, 75; 18—, 76; 21—, 77;
19—, 78.
223. *Numenius longirostris* Wils.
Long-billed Curlew. 558.
224. *Numenius hudsonicus* Lath.
Hudsonian Curlew. 559.
225. *Numenius borealis* (Forst.) Lath.
Eskimo Curlew. 560. October, 1869.
226. *Phalaropus fulicarius* (Linn.) Bp.
Red Phalarope. 563.
227. *Lobipes hyperboreus* (Linn.) Cuv.
Northern Phalarope. 564. Columbus, fall of —; Dr. Jasper.
228. *Steganopus wilsoni* (Sab.) Coues.
Wilson's Phalarope. 565.
229. *Recurvirostra americana* Gmel.
American Avocet. 566.
230. *Himantopus mexicanus* (Mull.) Ord.
Black-necked Stilt. 567.
231. *Rallus elegans* Aud.
Red-breasted Rail. 569. May 5, 74; April 19, 76.
232. *Rallus virginianus* Linn.
Virginian Rail. 572. April 10, 75.
233. *Porzana carolina* (Linn.) Baird.
Sora Rail. 574. May 4–Nov. 1, 73; May 2–Oct. 17, 74; April 17—, 76.
234. *Porzana noveboracensis* (Gm.) Baird.
Little Yellow Rail. 575. April 24, 79.
235. *Ionornis martinica* (Linn.) Reich.
Purple Gallinule. 578. May 10, 77; Cireleville.

236. *Gallinula galeata* (Licht.) Bp.
Florida Gallinule. 579. April 20, 76.
237. *Fulica americana* Gmel.
American Coot. 580. Nov. 1, 73; Oct. 17, 74; Mar. 25—, 75.
238. *Grus americana* (Linn.) Temm.
Whooping Crane. 582. Nov. 26, 76.
239. *Grus canadensis* (Linn.) Temm.
Sandhill Crane. 583.
240. *Olor americanus* (Sharpless) Bp.
Whistling Swan. 588. March 19, 77.
241. *Olor buccinator* (Rich.) Wagl.
Trumpeter Swan. 589.
242. *Chen caerulescens* (Linn.) Ridgw.
Blue-winged Goose. 590. Oct. 28, 76.
243. *Chen hyperboreus* (Pall.) Boie.
Snow Goose. 591. Mar. 19, 74.
244. *Anser albifrons gambeli* (Hartl.) Coues.
American White-fronted Goose. 593a.
245. *Bernicla canadensis* (Linn.) Boie.
Canada Goose. 594. Oct. 17, 74; Mar. 1, 2, 77.
- 245a. *Bernicla canadensis hutchinsi* (Sw. & Rich.) Ridgw.
Hutchins' Goose. 594a.
246. *Bernicla brenta* (Pall.) Steph.
Brant. 595.
247. *Anas boschas* Linn.
Mallard. 601. April 18, 73; Oct. 17, 74; Feb. 20—April 26, 77; Mar. 11, 79.
248. *Anas obscura* Gmel.
Black Mallard. 602. Oct. 17, 74; Mar. 5, 79.
249. *Chauliastur streperus* (Linn.) Gray.
Gadwall. 604. Mar. 28, 77.
250. *Dafila acuta* (Linn.) Bp.
Pintail. 605. Feb. 27, 75; 20, 77; Mar. 5, 79.
251. *Mareca americana* (Gmel.) Steph.
Baldpate. 607. Oct. 3, 74; Mar. 19, 77.
252. *Spatula clypeata* (Linn.) Boie.
Shoveller. 608. April 15, 75; Mar. 4, 76; 27, 77; 11, 79.
253. *Querquedula discors* (Linn.) Steph.
Blue-winged Teal. 609. April 18, Oct. 17, 74; April 20, 75; 7, 76; May 8, 76; April 20, 77;
14, 78.
254. *Nettion carolinensis* (Gmel.) Baird.
Green-winged Teal. 612. April 20, 75.
255. *Aix sponsa* (Linn.) Boie.
Wood Duck; Summer Duck. 613. Mar. 28, 77.
256. *Fulix marila* (Linn.) Baird.
Seaup Duck. 614. April 7—23, 76; Mar. 11, 77.

257. *Fulix affinis* (Eyt.) Baird. Mar. 23, 75; 11, 77; 6, 79.
Little Blackhead. 615.
258. *Fulix collaris* (Donov.) Baird. Mar. 25, 75; 11, 77; 6, 79.
Ring-billed Blackhead. 616.
259. *Æthya vallisneria* (Wils.) Boie. Mar. 30, 77.
Canvas-back. 617.
260. *Æthya americana* (Eyt.) Bp. Mar. 25, 75.
Redhead. 618.
261. *Clangula glaucium americana* (Bp.) Ridgw. Mar. 23, Dec. 20, 75; 12-15, 76.
American Golden-eye. 620.
262. *Clangula albeola* (Linn.) Steph. Mar. 25, 75; 6, 77; April 14, 78.
Butterball; Bufflehead. 621.
263. *Harelda glacialis* (Linn.) Leach. Long-tailed Duck; Old Squaw. 623.
264. *Somateria spectabilis* (Linn.) Boie. Dec. 4, 1880.
King Eider. 629.
265. *Ædemia americana* Sw. & Rich. Dec. 11, 76; Licking Reservoir.
American Scoter. 630.
266. *Melanetta velvetina* (Cass.) Baird. Dec. 13, 76; Licking Reservoir.
American Velvet Scoter. 632.
267. *Erismatura rubida* (Wils.) Bp. April 27, 73.
Ruddy Duck. 634.
268. *Mergus merganser americanus* (Cass.) Ridgw. Mar. 19, Nov. 12, 77.
American Sheldrake. 636.
269. *Mergus serrator* Linn. Nov. 4, 78.
Red-breasted Sheldrake. 637.
270. *Lophodytes cucullatus* (Linn.) Reich. Mar. 25, 75; 4, 76; 19, 77; Nov. 2, 78.
Hooded Sheldrake. 638.
271. *Pelecanus erythrorhynchus* Gmel. Oct. —, 61.
American White Pelican. 640.
272. *Phalacrocorax dilophus* (Sw. & Rich.) Nutt. April 1, 78; Licking Reservoir.
Double-crested Cormorant. 643.
- 272a. *Phalacrocorax dilopus floridanus* (Aud.) Ridgw. Sept. —, 61.
Florida Cormorant. 643a.
273. *Rissa tridactyla* (Linn.) Bp. Kittiwake Gull. 658.
274. *Larus leucopterus* Faber. White-winged Gull. 661.
275. *Larus marinus* Linn. Great Black-backed Gull. 663.
276. *Larus argentatus smithsonianus* Coues. Mar. 25, 73; April 22, 75; Mar. 30, 76; 2-30, 77; Nov. 4, 78.
American Herring Gull. 666a.
277. *Larus delawarensis* Ord. Mar. 3, 77.
Ring-billed Gull. 669.

278. *Larus philadelphæ* (Ord.) Gray. April 21, 75; Nov. 4, 78.
Bonaparte's Gull. 675.
279. *Xema sabinei* (J. Sabine) Leach. Sabine's Gull. 677.
280. *Sterna anglica* Montag. Gull-billed Tern. 679.
281. *Sterna forsteri* Nutt. Oct. —, 62.
Forster's Tern. 685.
282. *Sterna fluviatilis* Naum. May —, 72; Oct. 19, 75.
Common Tern.
283. *Sterna dougalli* Montag. Roseate Tern. 688.
284. *Sterna antillarum* (Less.) Coues. May —, 62.
Least Tern. 690.
285. *Hydrochelidon lariformis surinamensis* (Gm.) Ridgw. Aug. 4, 75; May 9, 77.
Black Tern. 693.
286. *Stercorarius pomatorhinus* (Temm.) Vieill. Pomarine Jaeger. 697.
287. *Podiceps holbölli* Reinh. American Red-necked Grebe. 731.
288. *Dytes auritus* (Linn.) Ridgw. April 30, 74; Nov. 30, 78.
Horned Grebe. 732.
289. *Podilymbus podiceps* (Linn.) Lawr. April 14, 73; Mar. 25, 75; April 5, 77.
Thick-billed Grebe. 735.
290. *Colymbus torquatus* Brum. May 7, 77.
Loon. 736.
291. *Colymbus arcticus* Linn. Black-throated Diver. 738.
292. *Colymbus septentrionalis* Linn. Red-throated Diver. 740.

About all of the summer-resident birds of the State are found in Pickaway County. Certainly one hundred and nine of the one hundred and thirty species recognized in the list breed within the four hundred square miles named. I have found the nests and eggs, or the young, of one hundred and one of these species, as follows, the numbers being taken from list of summer-residents, page 11: 1, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 20, 23, 25, 26, 27, 30, 31, 32, 33, 34, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 48, 50, 51, 52, 53, 54, 55, 56, 57, 58, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 84, 85, 86, 87, 88, 90, 92, 93, 94, 96, 97, 99, 102, 103, 104, 105, 106, 108, 109, 110, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 125. Foreign species, 1.

Since the Indian gave up his claim to the land now called Ohio, scarcely one hundred years ago, great and wonderful changes have taken place. Where formerly all was woods, reaching in every direction for mile upon mile unbroken, excepting here and there by small dots of prairie, now are cultivated fields and handsome farm-houses. Where stood the wigwams of a small tribe, now is seen the thriving city of thousands of inhabitants, and scattered at short distances from one another throughout the State are planted growing towns and villages. Over hill and through valley the swift-moving railway trains break

the former quiet, and on the large streams the noisy steamers ply up and down, awakening the echoes of the hills with the clatter of their machinery and the far-reaching sounds of steam whistles. Such changes were sure to produce corresponding influences upon the Ava fauna of the region, and we have only to refer to the writings of the older ornithologists to show how important these have been. A few examples will suffice. When Dr. Kirtland and Mr. Read made lists of Ohio birds, they found the Carolina Parakeet, the Wild Turkey, the Log-cock, and the Pinnated Grouse common; but they never observed, or only on rare occasions, the now plentiful Black-throated Bunting and Loggerhead Shrike. Numerous other birds, that need not be mentioned in particular, as reference is made to the subject in the text, have come under the ban of this same influence, and have been driven out, induced to come here, or changed largely in some of their habits. And while it is true that no such great strides in civilization will take place in the next fifty years as have occurred in the fifty just past, yet it is probable that, in some instances, the influences which have been at work are yet to be fully felt. And it is certain that some species are yet to be changed in their geographical distribution, and also in habits. The importation of the English Sparrows and their rapid multiplication has produced a marked but undesired effect upon many native birds. It would certainly be well for these natives if every community would make an effort to exterminate, or at least to reduce, the prodigious increase of the foreign pests. If this is not done, this sparrow must be added to the list of baneful influences which drive away much needed birds. To cast the horoscope for the bird-life of the future is uncertain work, and perhaps without profit; but the stars certainly predict utter extermination of the finest of all game birds, the Wild Turkey, and the diminution to the point of extermination of the Ruffed Grouse, the Quail, and the Wood Duck. Of the smaller birds, the signs are less certain, but changes are likely to occur by the introduction of new species and by the extinction of old ones.

In the fall, winter, and spring, the majority of our birds roam about from place to place, selecting for a short visit localities where food is abundant, and moving to new fields when it becomes diminished or exhausted. In the summer, or nesting season, this nomadic life is for the time given up, and the birds become home bodies, seldom going far from their place of residence. Most birds like at this season the protection afforded by the presence of man, and, as a rule, seek in a shy way his aid and companionship. More nests are built in cultivated than in wild districts, and more are situated about the outskirts of woods and in open fields than in the depths of the forest. Many species are partial to road-sides, garden patches, orchards and even populous cities, seemingly appreciating the immunity from Hawks and other destroyers offered by such localities, as well as the advantages of an abundant supply of food. Wild woodland is not, then, the place to find the nests of the greatest number of birds, but rather the outskirts of your native town, or the fields and groves of your farm. There are, of course, some birds, such as the Ruffed Grouse, Whip-poor-will, Woodcock, and a few Warblers and Flycatchers, that seek the most retired woods for nesting; and the water birds generally build about secluded streams and ponds, and are very wild and suspicious. But these birds may in the future, as other species have done in the past, learn the peculiar advantages of man's seeming intrusion upon their haunts, and ultimately court his protection rather than fear his presence. Who can tell? If men would use the gun with wise discretion, boys abandon the "flip," and all would treat bird-life as it deserves, few species would avoid man as an enemy.

* * *

In order to appreciate and understand the feathered tribe, it should be studied at every season of the year, but especially at that time when bird-life is at its perfection. During the winter months, most of our handsomest and sweetest songsters are in the sunny South, those birds that remain being nearly silent, devoting all their energies to procuring a scanty subsistence. But with the return of spring, our

little friends arrive, and force themselves upon the attention of even the most indifferent by their brilliant dress and joyous notes. This life of song begins with the egg, and only he who has traced every step, from the ovum to the full-fledged young, and from the full-fledged young to adult, and then forward to the egg again, knows its history.

The importance of oölogical study as the first step to ornithological lore is perfectly apparent. In their eggs the birds center their whole existence. They work unceasingly and intelligently for a place where they can lay them, and often, having laid them, guard them with their lives. Thus the nest, aside from its expression of ingenuity, skill, and patience, becomes an exponent of character. Different species have different ideas of happiness and of safety. What to one bird is a fine location for a home, is by another passed by with indifference. From the sandy house of the Bank Swallow to the homely nest of the Eagle, are nests of varying grades of beauty in location and proficiency in architecture, each attesting to the skill and intelligence of its builders by its position and workmanship. More space than has ever been given to this subject might well be devoted to it. As no single observer can hope to record all the interesting facts connected with the home-life of even the commonest species, we can only obtain perfect life-histories by the compilation of the accumulated writings of numerous observers, extending over many years and many places. The task is as great as it is instructive.

The conditions of civilization, besides dominating to a marked degree the number of resident species, also affects their general habits and methods of nidification. Striking instances of changes of the latter kind are seen in the nests of the Phœbe Bird, Cliff Swallow, White-bellied Swallow, and Chimney Swift, and the English Sparrow may be mentioned as the most familiar example of changes in habits and in mode of subsistence. Originally its style of architecture was as characteristic as that of other species of the same family, which has undergone little change, while intimate association with man has so affected it that it now builds at every season of the year, in any convenient place, and of any accessible material; and, instead of feeding as formerly, it now obtains its subsistence almost entirely from the streets, after the manner of chickens and ducks. Besides effects of this kind, resulting from semi-domestication, changes in the building habits of species take place, due to differences in the climate and topography. Of course, in an area as small as Ohio, alterations of this kind are not so well marked as in larger divisions of land. Still they exist to a greater or less extent. The season of the year, as regards to dampness or dryness, or as regards the abundance or scarcity of certain materials, also influences the construction of bird-homes. Birds are not slow in finding and appropriating that material which seems to them adapted to their purpose, and often they utilize in their buildings materials which in one year are plentiful, but which in another year may be entirely absent. Several years since, a strange plant louse infested many of the forest trees, especially the maples. The Red-eyed Vireo soon discovered that these little bugs contained under their scaly shells balls of silken thread, and at once they decorated and strengthened their pensile nests till they resembled balls of cotton in their snowy whiteness. In damp, cold seasons, many birds construct much warmer and more compact nests than in warm, dry seasons; and in sheltered positions less material is generally used than in unprotected spots. The Robin builds in March or April sometimes, if a well-protected site can be found, and uses double the amount of material that it would later in the season, as if perfectly conscious that extraordinary efforts are necessary to protect the eggs from the cold. The Turtle Dove lays upon the ground early in the year, selecting a low, warm piece of land, as if to protect her eggs from the cold air during the night. Another circumstance, perhaps, has its influence also. At the period of the year referred to, the trees have not put forth their leaves, and, consequently, can offer no protection and concealment to the nest. All the general rules which govern birds in the construction of their homes are subject to exceptions, caused by local circumstances. These frequently distort the original type of nest, so that the characteristics which usually suffice to determine its species are wanting. Besides certain evident, specific marks, every nest shows more or less

plainly some peculiar individual trait. This is often overlooked, each species of bird being considered as a unit, or as made up of a number of individuals of exactly similar disposition and skill. To a person unaccustomed to observe, each quail of a flock is a quail, nothing more nor less; but to an acute ornithologist each one has a character, a disposition, and habits, which, while being quail-like, are in certain points distinctive of the individual itself. In the construction of the nest these small differences go to make variations under exactly similar conditions. Generally, every species of bird has a certain plan as regards location, position, and construction of its nest, and upon this plan each individual elaborates within certain limits prescribed by inherited ideas or bounded by its skill as an artisan. It is not to be expected of an intelligence equal to that of a bird's that the same blind plan will always be followed in the construction of a habitation. Time, place, opportunity, and special conditions which seem to the builder to afford extra safety or comfort to the offspring, will, certainly at times, be embraced, causing departures from the stereotyped specific forms. If a species has been accustomed to build upon the ground, the nest is, under ordinary circumstances, to be found in such a location; but if the season happens to be very rainy, so that the soil becomes unfit for the nest, the birds living in the district so affected will surely build in some low bush or tree, or leave their usual haunts for higher and dryer ground. The Brown Thrasher and Chewink furnish common examples of this adaptability to prevailing conditions. All birds in this, and other ways too numerous to particularize, are continually avoiding that which seems to be dangerous, and taking advantage of what seems to add to their own safety and that of their offspring. Another factor which influences the nest is experience. While each individual is endowed with an amount of inherited skill sufficient for the construction of a specific form of nest, practice adds to or develops this to a considerable degree. The first nest of a pair of birds is seldom as good as succeeding ones, every thing considered. So well recognized is this that it is a common remark among collectors, when an exceptionally well constructed nest is found, "This is the work of an old bird."

The most constant factor about a nest of a given species is its internal diameter. Each specific form is a given dimension, which is nearly as uniform as the size of the birds themselves, whatever may be the location, position, and materials. Of all its parts the lining of a nest is the most invariable. The Robin lines her nest with blades of grass; the Wood Thrush uses rootlets; the Chipping Sparrow, hair; the Shrike, feathers; and so on through the list. Many birds lay their eggs directly upon the ground, or in some natural or artificial cavity, without any of the labor of nest-building. Some collect at a suitable site a few sticks, blades of grass, or a few leaves, as the case may be, and, upon these deposit their eggs, while there is one species which has never been known to build a nest or incubate, but habitually lays its eggs in the nest of some little bird, to be hatched and cared for by its foster parents. Our Cuckoos occasionally resort to this same practice; and several other birds, while not going to this extreme, disgrace their tribe by expelling from a nest its rightful owners and then possessing it for their own use. The Turtle Dove occasionally places a few sticks in the deserted nest of a Robin or other bird and claims it as her home. The Wren may take the abandoned nest of the Oriole or Cliff Swallow in which to rear her young. And often the Great Horned Owl will utilize an old Hawk's nest. Numerous other instances might be mentioned to illustrate the want of industry of species, or of individuals of a species.

The largest nests in the State are those constructed by the birds of prey—the Eagle, the Osprey, and the Hawk. The smallest nest is that of the Ruby-throated Hummingbird. The former, while very conspicuous, are exceedingly difficult to procure on account of their inaccessible location. The latter is generally situated within easy reach, but its diminutive size and its protective covering make it equally difficult to obtain. Between these extremes of architecture are all grades in size and accessibility. For convenience, nests may be divided into three divisions: A.—Nests situated above the ground. B.—Nests situated upon the ground. C.—Nests situated in the ground. A typical nest may be considered as having three parts: 1st, Foundation; 2nd, Superstructure; 3rd, Lining. The first is composed of the

coarsest material of the nest, and, as in a house, is simply preparatory to receiving the building proper. The second is of a better grade of material, and the third usually consists of soft, pliable substances, which make a dry and warm bed for the eggs and young. The foundation is absent in a large number of nests, because the position in which they are placed does not demand it. Likewise the superstructure may be wanting. In a perfect nest, supported from below and at the sides, the position in which it is situated determines the quantity of material in the foundation. A nest in a crotch of small angle contains more than a similar one in a crotch of large angle, as in each case the material must be piled into the crotch until a diameter sufficient to receive the superstructure is attained. The superstructure being largely independent of position, is, accordingly, more uniform in size in nests of a given species than is the foundation, while the lining, being without relation to position, is the most constant feature, so far as size and materials are concerned, of any part of a nest. With some birds the nest is a very elaborate affair, much time and skill being expended upon it. With others it is of but little consequence, and some neglect it entirely. Birds which excavate a home in decayed wood, or in sandy and clayey banks, often obtain for themselves secure and cozy quarters. Some of these excavations are lined with soft materials, others are left bare. Very pretty nests are often built in natural cavities, but the most beautiful and wonderful structures are those fastened to the swaying branches of the forest trees. The chief aim of birds in building is to protect their eggs and young from the various sources of danger, to which by nature they are exposed. Birds which lay showy eggs consequently take different means of reaching this end from birds whose eggs are in their coloring protective. The eggs most likely to attract prying eyes are the white ones, such as those laid by the Woodpeckers, Swallows, Swift, Kingfisher, Grouse, Quail, and Owls. These are concealed by the character of the nest, or protection is afforded by the size and nature of the birds possessing them. The Killdeer and Spotted Sandpiper, whose eggs resemble pebbles at a little distance, place their nests on the open, gravelly shore or field. The Black Tern, another bird which constructs little or no nest, and lays in exposed places, rolls its eggs in the mud till they resemble balls of clay. The green and greenish-blue eggs are usually in open nests among foliage, and consequently quite inconspicuous. The little, white, spotted eggs, while attractive, are commonly in deep, open nests, and are kept from view by overhanging foliage. The Turtle Dove is an exception to the general rule. This bird lays white eggs in a shallow and generally exposed nest, but as only two eggs are laid, and as the mother bird begins to sit on the same day, or the day after the first egg is dropped, and as she is usually fed upon the nest by her mate, the eggs after all are but seldom exposed to view. One of the most perfect examples of protective coloring occurs with the American Woodcock. The bird, nest, and eggs all being of very much the same shades of brown.

* * *

The Turkey Buzzard, the Wild Turkey, and the Osprey lay the largest eggs of any of the Birds found at present in Ohio, and the Hummingbird lays the smallest. The former average about 1.90 x 2.60, the latter about .34 x .50. Between these sizes are found eggs of all dimensions. The number of eggs in a set varies greatly with different species, but little with individuals of the same species. The Hummingbird, the Turtle Dove, and the Wild Pigeon lay the smallest number, the complement of each being two. The largest sets are laid by the Quail, Wild Turkey, Grouse, and Ducks. The Quail often incubates as many as twenty eggs, and the Ducks as many as ten or twelve. The majority of birds, however, lay from four to six eggs only, five being perhaps about the average number to a nest. The period of incubation varies from nine or ten days to about four weeks. Many small birds are hatched in ten days, while the large ones, such as Owls, Hawks, Ducks, Turkeys, and others, require from twenty-one to twenty-eight days. Some birds hatch two broods of young each year; in such cases the second set of eggs contains one or

two eggs less than the first. Usually incubation does not begin until the full complement of eggs is deposited, but some species habitually begin sitting as soon as the first egg is laid. The Yellow-billed Cuckoo, and perhaps, also, the Black-billed Cuckoo, sometimes sits upon one egg until it is nearly hatched, then a second one is dropped, and, when the embryo is quite well developed in this, a third egg is laid, and later, perhaps, even a fourth or fifth. In this way it so happens that the young bird from the first egg attains such size that the warmth of its body is sufficient to incubate numbers two and three, and when the first-born leaves the nest the second-born assumes its duties. Tame Pigeons often resort to this same means of escaping the task of incubating, as also does the Turtle Dove. The period of incubation for each species is difficult to determine, and but little accurate knowledge is in print upon the subject. The relative time required for the development of the ovum of each species could readily be ascertained by placing the eggs in an artificial incubator, and it is probable that this would not vary much from the actual time when hatched naturally. But such observations seem not yet to have been made. Personally, but few birds have been carefully timed during the period of their sitting, and these were watched to discover variations due to outside circumstances. In the species observed, temperature and moisture play an important part. A few cold rainy days always retarded the growth of the embryo from twelve to forty-eight hours. Cold and rain also often retard oviposition, some birds being able to withhold laying a day or two. A Chestnut-sided Warbler was ten days laying three eggs during the cold, wet summer of 1878, and at this time many other birds were similarly influenced. Some birds are by nature fond of such weather as referred to; these are, of course, exempt from the influence mentioned. Thus the water-birds, the birds of prey, and some land birds that build in very protected spots, disregard inclement weather.

The earliest birds to nest are the Owls and Hawks. These begin often in February to hunt a suitable site for a home, and by the first of March egg-laying is usually completed. The Cedar Waxwing and the American Goldfinch go to the other extreme, and defer building till August or September. May and June are, however, the chief nesting months with most of the birds of Ohio. The earliness or lateness of the season has much to do with the time of nidification. In 1882, the season was so rainy and cold that vegetation was delayed in Southern Ohio about two weeks, and birds which commonly build the last of May delayed until late in June, and even seemed to be less abundant. The May of 1886 was so cold that the Summer Redbirds abandoned partly finished nests and betook themselves to a warmer climate, nor did they return that year. And in the fall of '82, after the leaves had fallen from the branches, the nests seemed fewer in number than ever before, suggesting that many birds sought breeding grounds elsewhere during the continued cold of May and June. But the Owls and Hawks are hardy, and defy all inclemencies of weather. The nest of the Horned Owl often contains young when the ground is covered with snow, and the Red-tailed Hawk sometimes sits upon her eggs when an hour's absence would freeze them. To the young and eggs of many birds such temperatures would be fatal. Even wet weather, without extreme cold, kills many young birds, such as Quail, Ruffed Grouse, and others which early follow their parents in search of food. Running through the grass and over damp ground, their downy plumage becomes soaked, their tender muscles become fatigued and benumbed, and they fall, unable to farther follow their parents. Thus, one by one, a flock of Quail will soon be decimated. Birds that do not leave the nest till able to fly are also affected by wet. Beating rains soak the spongy fabric of their home by striking it directly or dripping from overhanging foliage, and the feeble nestlings, if not cared for by an experienced parent, are soon soaked and chilled to death. Continued rains also soften many nests that are largely composed of mud, and, melting away under this constant action, they fall from their position by the weight of themselves and their precious contents. Cold, wet summers are indeed hard times for young birds and their anxious parents. The days pass slowly to the watching parent and hungry brood, the mother-bird being unable to leave the nest for food, lest upon her return her little ones be dripping and cold. The night is worse than the day, for the chilliness has increased,

and now even the old birds suffer with cold. Imagine a Wood Thrush protecting through the long hours of a rainy night her hungry nestlings and rude habitation by her warm body and oily plumage. Without moonlight or starlight, her only company the falling drops of rain, the whistling wind, the sighing trees, and, perchance, the hollow hoot of the Owl, watching for some such morsel as she and her brood. Certainly this is dismal, and well calculated to still the music of the feathered tribes until brighter days and warmer nights return. If you have ever heard the Brown Thrush singing to the rising sun, after a few days of gloomy, falling weather, you have listened to a story of joy beyond the power of an English tongue to speak.

Bird-life, then, is not all sunshine. It has its lights and its shadows, each individual working out for itself the problem of existence with earnestness and feeling.

* * *

It is very important that there should be well selected and well preserved cabinets of nests and eggs. It is not necessary that these be very numerous; one for every state would perhaps answer all the requirements. It is prejudicial to bird-life for every amateur ornithologist or oölogist to aspire to a cabinet. Few reach their expectations, and abandon their endeavor after sacrificing thousands of birds and breaking up hundreds of homes; and in a few years their longed-for collection, so far as it has progressed, has been given over to the moth and other insects. It is commendable to love the study of birds, and to hunt up their nests, consider the materials of which they are composed, and measure and classify them. It is also commendable to study their eggs, compare those from one nest with those of another, and in every way to bring one's self in close relationship with our feathered friends. But it is despicable to rob every nest in wood and field to swell the numbers of a worthless collection. The true naturalist is sparing of life and feelings, and kills and robs only when science demands it. When collections must be made, the collector should exercise moderation as well as skill. It has been recommended by some that but one egg be taken from a nest, thus sparing the birds the loss of home and young. But one egg from a nest here and another from one there would constitute a cabinet of no scientific value. A typical nest of the desired species should be selected, and when filled with the complement of eggs the whole should be taken. If in a tree or bush, the branches should be carefully cut so that the nest will not fall from its position, and when secured they should be so fastened as to give them permanency when dried. The destructible parts of the nest should be soaked with a weak solution of corrosive sublimate in alcohol, or powdered with some drug that will effectually keep away insects. A label should then be attached, stating locality in which the specimen was found, the position in which it was built, the date of its collection, the name of collector, and, finally, the Latin and English name of the bird, and by what means the birds were identified. The eggs should be carefully drilled on one side only, cleaned of their contents, dried and sealed. They should then be packed in soft cotton in a small wooden box, the lid of which is labeled accordingly with the nest. When it is thought desirable, the male and female bird should be killed when the nest is taken and skillfully skinned, and these skins, packed in a box, should go with the nest and eggs. A cabinet of this kind would consume much space, it is true, but it would have a value which few collections now possess. Unless some such systematic effort is intended, it will be found much more profitable to the student to content himself with field work; to record in a field-book all about the birds, their nests and eggs. The last may even be measured without detriment, if handled carefully. Never hesitate to take a nest and eggs if its rarity or any other circumstance demands it. Even kill the parents, if necessary, but do not fill your box with every egg within reach, to be blown by the dozen, or perhaps hundreds, marked up with pencil or pen, and lastly to find a place in some obscure drawer, where, faded and moth-eaten, they are as empty in value

as in meat. The eggs of the common birds have no value. One dollar will buy twenty-five or thirty specimens. The country is stocked with eggs of the Robin and the like, collected by boys and others, who either imagine they are advancing the science of oölogy, or are stimulated to robberies of this kind by the insignificant rewards. This, with many other crimes against our birds, should be discouraged. All interested in the welfare of the feathered race should join hands in a persistent warfare against so-called cabinets of either birds or eggs, and against the savage habit of decorating hats and walls of rooms with the skins of our most beautiful birds.

*
* *

Reference is frequently made in the text under "Differential Points" to the following tables as a means of easy comparison with one another of the eggs of the summer-resident birds. It is believed they will also be of service for the rapid determination of the grosser characters of nests and as a key for the determination of the species of the various eggs. In using them as a key, it should be remembered that eggs of even the same kind may vary greatly in size, shape, ground-color, and markings, and that it is possible to give only the usual dimensions, etc. Farther, the tables are not intended for the identification of eggs which have reached the cabinet,—eggs that are not perfectly known should never enter a collection,—but rather for the aid of the amateur oölogist in his out-of-door work. Exceptional nests and eggs can not of course be classified, but nearly all normal examples of eggs of the one hundred and thirty species named can, by care, be traced by means of the key to their proper species. When eggs are discovered which are not known and can not be identified by the key, the birds should be carefully observed, and, if necessary, should be killed in order to determine their species. When by such certain means nests and eggs are found within the limits of the State which are not given here, notice should be made of the fact in some ornithological journal, that those interested in the oölogy of Ohio may receive the information.

KEY TO THE EGGS

OF THE SUMMER-RESIDENT BIRDS OF OHIO.

EGGS PLAIN—(I.) EGGS MARKED—(II.)

I.—EGGS PLAIN.

Shell white or whitish,—A.

Shell blue or bluish, or green or greenish,—B.

Shell neither white or whitish, nor blue or bluish, or green or greenish,—C.

A—SHELL WHITE OR WHITISH.

No	Size of Eggs in Short-diameter.	Size of Eggs in Long-diameter.	Color of Shell.	Number in a Set.	Location, Position, Materials, Size, etc., of Nest.	English and Latin Name of Bird.
1	1.80 to 2.10	2.17 to 2.30	White.	2 or 3	Usually the eggs are laid in an old nest of a hawk or in a hollow tree. Occasionally the birds build a nest for themselves in the fork of a tree. It is made of coarse sticks, weed-stems, etc. Eggs laid in February or March.	Great Horned Owl. <i>Bubo virginianus</i> .
2	1.52 to 1.70	1.87 to 2.04	White.	2 or 3	Nest in the hollow of a tree, or placed in a fork similar to the above. Eggs laid in February or March.	Barred Owl. <i>Strix nebulosa</i> .
3	1.24 to 1.30	1.58 to 1.80	White.	3 to 6	Nest consists of sticks, grass, etc., and is placed in a tree, a bush, upon the ground, or on the top of a stump in retired timber-land. Often a deserted nest of a Crow or Hawk is used, and probably the eggs are sometimes laid in a hollow tree. Eggs in March.	American Long-eared Owl. <i>Asio americanus</i> .
4	1.18 to 1.25	1.34 to 1.58	White.	4 to 6	Nests in hollow trees, at no great distance from the ground. Old orchard trees favorite sights. Eggs from February to April.	Little Screech Owl. <i>Scops asio</i> .
5	1.15 to 1.25	1.22 to 1.58	White.	4 to 7	Eggs laid upon the ground or a little grass, in open, damp, grassy lands. Sometimes they are at the foot of a little bush, beside a log, or at times in a rabbit burrow. Eggs about April.	Short-eared Owl. <i>Asio accipitrinus</i> .
6	1.11 to 1.30	1.40 to 1.70	Milk-white to brownish or creamy-white, often stained by leaves.	7 to 15	Nest of leaves, etc., on the ground beside a log, under a bush, etc., in secluded woods, occasionally also in bushy pastures near woods. Eggs from April to September.	Ruffed Grouse. <i>Bonasa umbellus</i> .
7	.98 to 1.08	1.35 to 1.55	White.	2	Nest in trees in woods, usually a number of nests near by each other. Made of sticks chiefly.	Passenger Pigeon. <i>Ectopistes migratoria</i> .
8	1.00 to 1.06	1.26 to 1.37	Clear White.	6 to 7	Nest at the end of burrow in a bank, usually the bank of a river or creek. Commonly holes of minnows and crawfish in the nest. Eggs last of May and June.	Belted Kingfisher. <i>Ceryle alcyon</i> .
9	.93 to 1.05	1.13 to 1.30	White, often stained by grass upon which they rest.	12 to 20, or more.	Nest on the ground in open fields, sometimes in woods, made of grass, etc., and generally concealed from view by rank vegetation. April to July, or later.	American Quail. Bob White. <i>Ortyx virginianus</i> .
10	.72 to .92	1.00 to 1.20	White.	2	Nest on low limbs of trees and in bushes. Made of sticks, straws, etc.; very shallow. Early in the season, before leaves are out, nest placed on the ground. Eggs April to October.	Mourning Dove. <i>Zenaidura carolinensis</i> .
11	.79 to .90	.93 to 1.19	Glossy White.	5 to 9	Nest in cavity in a dead tree, fence-post, etc., made for the purpose by the birds. Rarely a natural cavity is chosen for the site. Diameter of opening to nest about 3¼ inches. Eggs in May and June.	Yellow-shafted Flicker. <i>Colaptes auratus</i> .
12	.79 to .89	1.05 to 1.15	White.	4 to 6	Nest in cavity in a dead tree, fence-post, stump, etc., excavated by the birds. Rarely in a natural cavity. Diameter of opening to nest about 1¼ inches. Eggs rest on chips and laid in May or June.	Red-headed Woodpecker. <i>Melanerpes erythrocephalus</i> .
13	.70 to .78	.90 to 1.00	White.	4 to 6	Nest in holes excavated in dead trees, high above ground. Eggs rest on chips and laid in May or June. Scarce.	Red-bellied Woodpecker. <i>Centurus carolinus</i> .
14	.68 to .75	.87 to 1.05	White.	4 to 6	Nest in holes excavated in dead trees and stumps, usually within twenty feet of the ground. Eggs rest on chips and laid in May or June. Diameter of hole at entrance about 2 inches.	Hairy Woodpecker. <i>Picus villosus</i> .
15	.57 to .67	.78 to .88	White.	4 to 6	Nest in holes excavated in dead trees and stumps, usually along the bank of some stream, and from three to ten feet from the ground. Eggs rest on chips and laid in May or June. Diameter of hole at entrance about 1.3-1.6 inches.	Downy Woodpecker. <i>Picus pubescens</i> .
16	.62 to .74	.90 to 1.02	White.	4 to 6	Nest built in natural cavities in trees, or, as is now commonly the case, in bird-boxes erected for the purpose. Eggs laid in June.	Purple Martin. <i>Progne purpurea</i> .
17	.52 to .62	.70 to .80	White, or creamy-white.	4 to 5	Nest built of mud, moss, etc., about bridges, deserted cabins, caves, etc., and often fastened to the perpendicular side of a rock or timber.	Pewee Flycatcher. <i>Sayornis fuscus</i> .
18	.49 to .55	.75 to .85	White.	4 to 6	Nest basket-like and made of fine twigs glued together and to the supporting surface by a gummy substance from the bird's mouth. Situated in hollow trees, chimneys, etc.	Chimney Swift. <i>Chetura pelagica</i> .

A—SHELL WHITE OR WHITISH—CONTINUED.

No.	Size of Eggs in Short-diameter.	Size of Eggs in Long-diameter.	Color of Shell.	Number in a Set.	Location, Position, Materials, Size, etc., of Nest.	English and Latin Name of Bird.
19	.51 to .58	.68 to .84	White.	4 to 6	Nest of feathers, etc., in deserted Woodpecker's nests and natural cavities in trees near water; also in bird-boxes.	White-bellied Swallow. <i>Tachycineta bicolor.</i>
20	.50 to .54	.68 to .76	White.	4 to 6	Nest in holes excavated by the birds, in the banks of streams and ponds, seldom more than three feet above the water, also in crevices in masonry of bridge piers, etc. Nest of feathers and straws.	Rough-winged Swallow. <i>Stelgidopteryx serripennis.</i>
21	.47 to .59	.60 to .72	White.	4 to 6	Nest in holes in banks of rivers, etc., usually in colonies and high above the water. Composed of feathers, etc.	Bank Swallow. <i>Cotile riparia.</i>
22	.34 or .35	.50	White.	2	Nest in trees, bushes, and vines, in woods or about gardens and orchards; nest covered with lichens. Smallest in the State.	Ruby-throated Humming Bird. <i>Trochilus colubris.</i>

B—SHELL BLUE OR BLUISH, OR GREEN OR GREENISH.

No.	Size of Eggs in Short-diameter.	Size of Eggs in Long-diameter.	Color of Shell.	Number in a Set.	Location, Position, Materials, Size, etc., of Nest.	English and Latin Name of Bird.
1	1.75 to 1.90	2.50 to 2.75	Bluish-green.	3 to 4	Nest of sticks, etc., in tall trees near water, usually sycamore trees. Often a number of nests near one another. Occasionally nest situated on a rocky bluff.	Great Blue Heron. <i>Ardea herodias.</i>
2	1.60 to 1.72	2.12 to 2.30	Greenish or greenish-white. Smooth, with an oily feeling.	6 to 10	Nest on the ground, in or near wet places. Composed of grass, weeds, feathers, etc.	Mallard. <i>Anas boschas.</i>
3	1.45 to 1.60	1.80 to 2.10	Greenish-blue.	3 to 6	Nest in woods, frequently near a pond or stream; high up in trees. Composed of sticks, etc. Eggs about the last of April.	Cooper's Hawk. <i>Accipiter cooperi.</i>
4	1.40 to 1.60	1.95 to 2.20	Brownish olive-green. Dark.	3 to 6	Nest on the ground in weedy and bushy marshes, and in grassy bogs.	American Bittern. <i>Botaurus lentiginosus.</i>
5	1.08 to 1.20	1.46 to 1.66	Bluish-green.	2 to 5	Nest in trees or bushes, usually in or near swampy places or streams. Low trees in thickets on islands, and in marshes, and also old orchard trees, often considerable distance from water, furnish favorite sites. Composed of sticks.	Green Heron. <i>Butorides virescens.</i>
6	.94 to 1.00	1.16 to 1.27	Pale blue.	3 to 5	Nest on the ground, in bushes, or, as is usually the case, in a tussock of tall grass in a marsh. Composed of grass, etc.	Least Bittern. <i>Ardetta exilis.</i>
7	.85 to .97	1.13 to 1.33	Pale bluish-green.	3 to 6	Nest in woods in bushes, trees, and vines. A shallow affair made of sticks, catkins, etc.	Yellow-billed Cuckoo. <i>Coccyzus americanus.</i>
8	.78 to .89	1.05 to 1.17	Pale bluish-green.	3 to 5	Nest same as above species, but a trifle smaller. These eggs and also those of the Yellow-billed Cuckoo may occasionally be found in nests of other birds.	Black-billed Cuckoo. <i>Coccyzus erythrophthalmus.</i>
9	.71 to .86	1.00 to 1.20	Blue.	3 to 5	Nest in trees, on fence-rails, in out-buildings, etc. Always easily recognized by its mud superstructure and lining of blades of grass.	American Robin. <i>Merula migratoria.</i>
10	.65 to .80	.95 to 1.10	Blue, about the same as the above.	3 to 5	Nest in bushes and low trees in retired woods. Lined with black rootlets. Superstructure of mud, rotten wood, etc. Diameter of cavity from 2 $\frac{1}{4}$ to 3 $\frac{1}{2}$ inches.	Wood Thrush. <i>Hylocichla ustellina.</i>
11	.63 to .68	.82 to .93	Greenish-blue.	3 to 5	Nest on the ground, generally in damp places. Composed of leaves, weed-stems, etc., lined with bark, rootlets, grasses, and sometimes hair.	Hermit Thrush. <i>Hylocichla ustellatae pallasi.</i>
12	.60 to .75	.80 to 1.05	Rich bluish-green.	3 to 5	Nest in bushes and low trees, usually in briers in woods, also in garden bushes, and rarely in an orchard tree. Bulky. Composed of sticks and weed-stems, and lined with rootlets, etc.	Catbird. <i>Galeoscoptes carolinensis.</i>
13	.58 to .68	.85 to .95	Greenish-blue.	3 to 5	Nest on the ground, or near it in a bush or tussock of grass. Nest and eggs very similar to No. 11. Diameter of cavity about 2 $\frac{1}{2}$ inches.	Wilson Thrush. <i>Hylocichla fuscescens.</i>
14	.61 to .67	.80 to .87	Bluish tinted.	3 to 6	Nest composed of weed-fibres, hairs, grasses, etc. Built in natural cavities in woods or open land, also in bird-boxes and deserted Woodpecker's nests.	Bluebird. <i>Sialia sialis.</i>
15	.55 to .65	.73 to .86	Blue.	4 to 5	Nest usually on the ground, or near it in a bunch of grass or clover, in open fields. Rarely a nest is built in a bush. Composed of weed-stems, grass, etc.	Black-throated Bunting. <i>Spiza americana.</i>
16	.52 to .59	.69 to .81	Bluish tinted.	3 to 5	Nest in bushes and trees in woods, along fence rows, and wherever bushes and weeds grow. Composed of weed-stems, fibres, grasses, web, etc. Lined with split grasses.	Indigo Bunting. <i>Passerina cyanea.</i>
17	.50 to .56	.60 to .67	Bluish-green, tinted.	4 to 6	Nest in trees, bushes, and thistles, both in town and country. Usually eggs are laid in July or August, seldom earlier. Diameter of cavity about 2 inches.	American Goldfinch. <i>Astragalinus tristis.</i>

C—SHELL NEITHER WHITE OR WHITISH, NOR BLUE OR BLUISH, OR GREEN OR GREENISH.

No.	Size of Eggs in Short-diameter.	Size of Eggs in Long-diameter.	Color of Shell.	Number in a Set.	Location, Position, Materials, Size, etc., of Nest.	English and Latin Name of Bird.
1	1.50 to 1.60	1.70 to 2.10	Creamy-brownish, or dirty yellowish-white.	6 to 12	Nest in holes in trees, usually near water. Hollow sycamore limbs overhanging water are favorite sites.	Wood Duck. <i>Aix sponsa.</i>
2	1.40 to 1.60	1.95 to 2.20	Brownish.	3 to 6	Nest on the ground in weedy and bushy marshes, and in grassy bogs.	American Bittern. <i>Botaurus lentiginosus.</i>
3	1.28 to 1.34	1.76 to 1.90	Creamy or buff.	6 to 10	Nest of grass, weeds, feathers, etc., situated in the grass and weeds about the border of a marsh, or among the weeds and water-grasses of a swamp.	Blue-winged Teal. <i>Querquedula discors.</i>
4	1.16 to 1.19	1.75 to 1.95	Dirty yellowish, with a faint tint of greenish, often stained by reeds, etc.	3 to 4	Nest of reeds, grasses, etc., either floating on the water of a weedy pond, etc., or placed upon some floating debris. Eggs are covered up by the birds when they leave the nest.	Horned Grebe. <i>Dytes auritus.</i>
5	1.10 to 1.20	1.70 to 1.80	Yellowish-brown to olive-brown, also milky white, with faint greenish cast.	4 to 8	Nest of reeds, grass, etc., in marshes, floating as the above, or placed in a bunch of saw grass. Eggs often covered with mud.	Thick-billed Grebe. <i>Podilymbus podiceps.</i>

II.—EGGS MARKED.

Ground-color of shell white or whitish,—A.

Ground-color of shell blue or bluish, or green or greenish,—B.

Ground-color of shell neither white or whitish, nor blue or bluish, or green or greenish,—C.

A—GROUND-COLOR OF SHELL WHITE OR WHITISH.*

No.	Size of Eggs in Short-diameter.	Size of Eggs in Long-diameter.	Ground-color of Shell.	How Marked, Color of Marks, etc.	No. in a Set.	Location Position. Materials. Size, etc., of Nest.	English and Latin Name of Bird.
1	1.80 to 2.00	2.15 to 2.60	Soiled white, chalky white, or yellowish-white.	Marked with indistinct blotches and spots of ochre, and variously blotched, spotted, and speckled with reddish- or yellowish-brown. Deep shell-marks purplish; majority of marks are usually on the smaller end. Occasionally an egg is unmarked. Shell granular.	3	Nest in trees, generally at edge of thick woods. Sometimes in the interior, often along creeks and rivers. Composed of sticks, lined with corn-stalk, husks, feathers, grape-vine bark, etc.	Red-tailed Hawk. <i>Buteo borealis.</i>
2	1.75 to 1.90	2.20 to 2.60	Creamy-white.	Marked with large blotches, spots, and speckles, varying in different specimens from a wine-red to purplish-brown, usually brown-madder. Deep shell-marks vary from blue-gray to smoky-brown. There is great diversity of pattern among these eggs. Occasionally markings obscure ground-color entirely.	2 to 3	Nest entirely of sticks, woven into a strong platform, and repaired from year to year. Built in the top of a tree.	Fish Hawk. <i>Pandion haliaetus carolinensis.</i>
3	1.60 to 1.80	2.00 to 2.25	Soiled white, occasionally bluish-white or brownish-white.	Some eggs nearly unmarked, others quite numerous blotched, spotted, and speckled with various shades of brown, the ground being obscured at base. Between these extremes are various patterns. Deep shell-marks are infrequent. Shell granular.	3 to 4	Nest in tall trees in groves or in woods, frequently near streams or ponds. Composed chiefly of sticks, lined with grasses, moss, feathers, etc.	Red-shouldered Hawk. <i>Buteo lineatus.</i>
4	1.48 to 1.55	1.90 to 2.00	Soiled white or brownish-white.	Marked with clouds, blotches, spots, and speckles of reddish-brown or yellowish-brown of various shades. Some eggs are sparingly and regularly marked; others are so heavily marked at one end as to conceal the ground-color; others are marked mostly with deep shell-marks, which appear lavender.	3 to 5	Nest in trees in damp woods and wooded swamps. Composed of sticks, weed-stems, grasses, etc.	Broad-winged Hawk. <i>Buteo pennsylvanicus.</i>
5	.80 to .90	1.08 to 1.20	White.	Marked with large and small spots and some speckles of light yellowish-brown, distributed rather plentifully and evenly over entire shell. Occasionally a blotch or blotches occur. Deep shell-marks are about as numerous as surface marks, and appear lavender.	3	Nest in densest woods. Eggs laid on leaves on the ground, on a shelving rock, etc. No materials are carried for the nest.	Whip-poor-will. <i>Caprimulgus vociferus.</i>
6	.76 to .82	1.00 to 1.15	White, at times very faintly tinted with greenish-gray.	Marked with blotches, spots, and speckles of light yellowish- or pinkish-brown, distributed over entire shell, but most abundant about the base, where sometimes they are confluent. Some eggs marked only with spots and speckles. Deep shell-marks are faint and somewhat purplish.	4 to 5	Nest in open fields of grass or small grain, usually in a slight hollow on the ground. Composed chiefly of grass and straw, well woven, and same within as without. Majority of nests are domed. Diameter of cavity about $3\frac{1}{2}$ inches.	Meadow Lark. <i>Sturnella magna.</i>
7	.72 to .82	.93 to 1.08	White or white faintly tinted with green.	Marked usually with speckles; sometimes with dots or blotches of light cinnamon-brown, distributed pretty uniformly and thickly over whole shell; sometimes there is a well-defined ring about the base.	3 to 5	Nest either on the ground or in a bush, hedge, brush pile, or even on a fence rail in the corner of a worn fence; usually in woods, but also in open country. Composed of sticks, leaves, weed-stems, etc., lined with rootlets, bulky and coarse. Diameter of cavity from 3 to $3\frac{1}{2}$ inches.	Brown Thrasher. <i>Harporhynchus rufus.</i>
8	.68 to .78	.90 to 1.10	White; sometimes faintly tinted with green, rusty-brown, or yellow.	Marked with blotches, spots, and speckles. Some eggs are spotted and speckled thickly, almost concealing the ground-color, with yellowish-brown; others have only a few blotches of rich brown interspersed with faint speckles. Deep shell-marks are lavender tint. Eggs of this species differ greatly even in the same set.	2 to 4	Nest in bushes and low trees; often on a bunch of thorns against the trunk of a honey-locust tree. Composed of long slender weed-stems, grape-vine bark, etc., and lined with pieces of slender vine of pinkish gray or brown tint. Diameter of cavity varies from $2\frac{1}{4}$ to $3\frac{1}{4}$ inches.	Cardinal Grosbeak. <i>Cardinalis virginianus.</i>
9	.68 to .80	.88 to .98	White, slightly tinted with bluish-green.	Marked with blotches, spots, and speckles of brown-madder. Usually the shell is well spotted and speckled. Ground-color often obscured at base where there is slight confluence of marks. Not much variation in patterns.	3 to 5	Nest in woods, usually with heavy undergrowth of bushes, etc. Placed on the ground, except in very wet seasons; then in bushes. Made of leaves, straw, grass, etc., lined with slender vine-stems, nicely arranged. Diameter of cavity about 3 inches; depth from 1 to $2\frac{1}{4}$ inches.	Chewink. <i>Pipilo erythrophthalmus.</i>
10	.63 to .69	.83 to .96	White.	Marked with blotches, spots, and speckles of reddish-brown, usually over the entire shell, but most plentifully at the base. Some eggs have large blotches of color interspersed with spots and speckles; some have a wreath about the crown.	4 or 5	Nest usually of weed-stems, pieces of trailing vines, skeletonized leaves, etc., and lined with well selected pieces of round trailing vine, of a gray, brown, or pinkish cast. Diameter of cavity about $2\frac{1}{2}$ inches.	Yellow-breasted Chat. <i>Icteria virens.</i>
11	.63 to .75	.85 to 1.02	Creamy white.	Marked with dots and blotches of chocolate-brown, irregularly distributed over whole surface or confined to crown; not very numerous. Deep shell-marks purplish.	4 to 6	Nest placed in horizontal or perpendicular fork of tree, usually in a tree near water. Old apple trees and trees along country roads are favorite sites. Seldom in town. Nest rather bulky; made of grasses, weed-stems, fibres, sticks, rootlets, etc., coated inside with rotten plaster, and lined with slender grasses, feathers, wool, etc. Diameter of cavity about 3 inches.	Kingbird. <i>Tyrannus carolinensis.</i>

*With eggs that are marked it is difficult to tell the actual tint of the ground, owing to the contrast of colors. The apparent tint is always given. All the very faintly tinted eggs are whitish; but when the tint is quite evident the eggs are not included under A, but go to B or C.

A—GROUND-COLOR OF SHELL WHITE OR WHITISH—CONTINUED.

No.	Size of Eggs in Short-diameter.	Size of Eggs in Long-diameter.	Ground Color of Shell.	How Marked, Color of Marks, etc.	No. in a Set.	Location, Position, Materials, Size, etc., of Nest.	English and Latin Name of Bird.
12	.59 to .66	.82 to .95	White.	Marked sparingly, and mostly about the base, with blotches, spots, and speckles of very dark brown. Deep shell-marks are gray and sometimes nearly as plentiful as surface marks.	3 to 5	Nest pensile and covered with lichens; placed in trees in woods, orchards, lawns, etc. Rather scarce. Only lichen-covered pensile nest in Ohio. Diameter of cavity about 1½ inches; depth of cavity about 1¾ inches.	Yellow-throated vireo. <i>Lanius flavifrons.</i>
13	.59 to .66	.78 to .90	White, but often obscured by the abundance of the markings.	Marked with spots and speckles, evenly and plentifully over entire shell, together with a few blotches about the base. Speckles predominate on most eggs. Color of marks is very uniform, being brown, inclined to yellow. Deep shell-marks have a bluish cast.	1 to 3 to a nest.	Eggs found in any of the smaller nests; also occasionally in nests of birds the size of a Robin.	Cowbird. <i>Molothrus ater.</i>
14	.59 to .67	.76 to .89	White, with sometimes faintest creamy tint.	Marked with dots, spots, speckles, and lines of brown, so dark as to be nearly black. Marks beneath the surface appear lavender. The smaller end of shell is usually nearly plain. Lines generally are circular or zigzag, and often form a wreath at base.	3 to 4	Nest usually in a poorly cultivated grass field near woods; preferably, recently cleared land. Placed on the ground in slight depression. Composed of clover-stems, weed-stems, straw, etc., lined with split grasses or long horse-hair. Diameter of cavity 2½ inches; depth 1¾ inches. Nest said to be built sometimes in a bush.	Lark Finch. <i>Chondestes grammica.</i>
15	.58 to .62	.69 to .79	White.	Marked with blotches, spots, and speckles of faint reddish-brown. Deep shell-marks blue-gray. Some eggs have a wreath around the crown, composed of confluent blotches and spots. Often the marks consist of several shades of the same color.	4 to 5	Nest on the ground, among the roots of upturned trees, etc., in dense woods. Composed of leaves, grasses, weed-stems, and similar coarse materials, and lined with fibrous roots.	Large-billed Water Thrush. <i>Siurus motacilla.</i>
16	.58 to .59	.67 to .73	White.	Marked with spots and speckles of dull brown, with faint submarkings of lavender, plentifully and uniformly distributed over whole shell, or marked with bold blotches of bright reddish-brown, confluent about the base, and everywhere interspersed with smaller marks of same color. Eggs blunt.	3 to 7	Nest in natural or artificial cavity in old stump or tree in a bushy swamp, etc. Seldom higher than 15 feet. Made of moss, leaves, twigs, rootlets, etc., lined with fine rootlets, feathers, etc.	Prothonotary Warbler. <i>Protonotaria citrea.</i>
17	.57 to .60	.69 to .76	White.	Marked with blotches, spots, and speckles of reddish-brown, distributed over the whole shell, thickest about base, sometimes forming a wreath. Deep shell-marks purplish. Some eggs are marked chiefly with large blotches; others are entirely speckled; some have short lines also.	3 to 9	Nest in town or country; often in a brush-heap in woods, etc.; generally about old buildings; situated in any unfrequented nook. Made of straw, grasses, weed-stems, paper, moss, etc., lined with grass, feathers, etc. Bits of snake skin usually to be found in nest.	Carolina Wren. <i>Thryothorus ludovicianus.</i>
18	.56 to .59	.70 to .74	White.	Marked with blotches, spots, and speckles of reddish-brown. Deep shell-marks appear lavender, or neutral tint, not very heavily marked. Majority of blotches and spots at the base.	4 to 5	Nest in clover and grass fields, on the ground. Composed of grasses, weed-stems, etc., and lined with horse-hair and fine bleached grasses. Diameter of cavity about 2½ inches.	Yellow-winged Sparrow. <i>Coturniculus passerinus.</i>
19	.57 to .68	.76 to .81	White, with faint pinkish or grayish tint.	Markings variable. Some eggs are blotched, spotted, and speckled with sepia, almost black, interspersed with coarse, irregular lines. Some eggs have, in addition, faint rusty-brown blotches and spots; some are marked with rusty brown only, thickly sprinkled over entire shell, so as nearly to obscure the ground-color.	4 to 6	Nest usually in a bare field, with here and there little clumps of grass or weeds. Always on the ground, in a slight cavity. Composed of weed-stems, grasses, and straws, etc., entwined and matted together, lined with grasses, rootlets, and horse-hairs. Average diameter of cavity 2½ inches; depth about 3½ inch.	Grass Finch, <i>Poocetes gramineus.</i>
20	.55 to .65	.70 to .90	Dull white.	Marked with large blotches, spots, and speckles, and occasionally scrawls of warm, rich brown, or brown nearly black. Deep shell-marks gray or purplish, and often numerous. Eggs usually profusely marked, sometimes ground-color nearly obscured. Shell often looks as if stained.	4 to 5	Nest on the ground in damp meadows, etc. Composed of grass, clover-stalks, etc., lined with grass. Diameter of cavity about 3 inches.	Bobolink. <i>Dolichonyx oryzivorus.</i>
21	.55 to .58	.72 to .80	White.	Marked with blotches, spots, and speckles of reddish-brown, with but few deep shell-marks; usually marked over whole shell, but most plentifully about the base. Some eggs are only speckled. At times all marks are subdued in tone, and the blotches have irregular and indistinct outlines.	4 to 6	Nest in woods with undergrowth of bushes, etc., on the ground at foot of bush or sapling, and in a tuft of grass or weeds. Said sometimes to be in a bush. Made of forest leaves rudely thrown together, lined with rootlets, hairs, etc. Diameter of cavity from 2 to 2½ inches.	Kentucky Warbler. <i>Oporornis formosa.</i>
22	.53 to .57	.66 to .74	White.	Marked with spots and speckles, rarely blotches, of brown-madder. On some eggs the color is deep and the spots large and confluent at the base; others are thickly spotted and sprinkled from point to base, but most plentifully at the base, with light brown-madder. Usually they are but sparingly marked, with a tendency to form a wreath at the crown. Deep shell-marks not numerous.	6 to 8	Nest in town or country, in hollow trees, crevices in the bark of trees, etc.; also in deserted Woodpeckers' nests. Composed of leaves, grasses, lichens, moss, feathers, etc.	Tufted Titmouse. <i>Lophophanes bicolor.</i>
23	.52 to .66	.75 to .95	White.	Marked with spots and speckles, chiefly about the base, with chocolate-brown, at times almost black. Occasionally very faint wavy lines in addition. Deep shell-marks yellowish-brown. From 40 to 100 marks to the egg.	3 to 5	Nest in trees and bushes, seldom higher than 20 feet, usually much lower; generally in woods. Pensile. Composed of inner bark of trees, blades of grass, weed-fibres, silken threads, bits of wood, pieces of hornets' nest, etc., lined with strips of grape-vine bark, etc. Diameter of cavity from 2 to 2½ inches.	Red-eyed Vireo. <i>Vireosylva olivacea.</i>
24	.52 to .63	.70 to .80	White or faint creamy white.	Marked about the base with a few reddish-brown or chocolate spots and speckles; usually plain.	4 to 5	Nest of mud, moss, etc., about bridges, deserted cabins, caves, etc.; often fastened to the perpendicular side of a rock or timber.	Pewee Flycatcher. <i>Sayornis fuscus.</i>
25	.52 to .61	.68 to .78	White.	Marked with blotches, spots, and speckles of brown-madder, usually of light tint. Some eggs are sprinkled all over; others have bold blotches in a wreath about the base, and are speckled and spotted elsewhere. Deep shell-marks, grayish.	4 to 9	Nest in trees, generally in the woods; may be in town. Birds excavate a hole high up in a tree. Eggs on bare floor of cavity, or a nest of hair, feathers, down, fur, grasses, etc., may be built. Nest occasionally in natural cavity.	White-bellied Nuthatch. <i>Sitta carolinensis.</i>
26	.50 to .70	.80 to 1.05	Pure white, or faintly tinted with blue or pink.	Marked with blotches, dots, speckles, and irregular lines of dark brown or black, usually irregularly distributed over the surface; sometimes the marks form a wreath around the crown. Deep shell-marks are indistinct.	4 to 6	Nest pensile, usually near the end of a branch. In woods, towns, anywhere. Made of fibres, strings, etc. Cavity varies in depth from 2¼ to 6 inches; internal diameter at mouth from 2½ to 3½ inches.	Baltimore Oriole. <i>Icterus galbula.</i>

A—GROUND-COLOR OF SHELL WHITE OR WHITISH—CONTINUED.

No.	Size of Eggs in Short-diameter.	Size of Eggs in Long-diameter.	Ground-color of Shell.	How Marked, Color of Marks, etc.	No. in a Set.	Location, Position, Materials, Size, etc., of Nest.	English and Latin Name of Bird.
27	.50 to .60	.76 to .84	White.	Marked with blotches, spots, and speckles of different shades of reddish-brown. Deep shell-marks appear gray. Markings generally limited to larger end; sometimes they are confluent and form a wreath.	4 to 5	Nest in woods with heavy undergrowth, on the ground. Oven-shaped usually; entrance at the side. Composed of leaves, grass, twigs, hair, lichens, moss, etc., lined with grass. Diameter of cavity from 3 to 3½ inches.	Golden-crowned Thrush. <i>Sturnus auricapillus.</i>
28	.50 to .58	.74 to .87	White.	Marked with spots, speckles, and occasionally small blotches also, of various shades of brown, sometimes quite light, sometimes nearly black, not very numerous; basal half contains the majority; sometimes they form a wreath; seldom confluent.	4 to 6	Nest placed on the outside of barns and other buildings, under the eaves, or some such place sheltered from rain. Composed entirely of mud, made so as to form a cavity entered only by a small hole. Usually birds build in colonies.	Cliff Swallow. <i>Petrochelidon lunifrons.</i>
29	.50 to .60	.73 to .83	White.	Marked with a few spots and minute specks of dark chocolate-brown or sepia, at times almost black. Marks chiefly about the base. Deep shell-marks appear neutral tint.	5	Nest placed in a bush or on a low limb of a tree in woods. Pensive. Composed of fibres, bark, leaves, grass, etc. Diameter of cavity about 2½ inches in widest part; depth of cavity about 2¾ inches.	White-eyed Vireo. <i>Vireo noveboracensis.</i>
30	.50 to .57	.69 to .89	Usually pure white, sometimes dirty or yellowish-white.	Marked with dots and small spots of slightly reddish-brown over entire shell, sometimes thickly, sometimes sparingly, nearly always most abundantly about the base. Deep shell-marks bluish. Some eggs are blotched with yellowish- or blackish-brown.	4 to 6	Nest usually placed against the rafter of a barn loft, close to the shingles; occasionally on a beam. Built of mud, strengthened with grasses and straws; lined with grass, and then with feathers.	Barn Swallow. <i>Hirundo erythrogastra.</i>
31	.50 to .55	.61 to .70	White, or white with the faintest tint of greenish-blue.	Marked with blotches, dots, and minute speckles of light reddish-brown, or yellowish-brown, over entire egg, but most abundant about the base, often forming a wreath. Deep shell-marks appear purplish.	4 to 5	Nest in woods, on the ground or in bushes, especially rose-bushes. Composed of weed-stalks, split grass, roller-grass, rootlets, etc., lined with black-horse-hair or split grass. Diameter of cavity from 1½ to 2½ inches; depth of cavity about 1½ inch.	Field Sparrow. <i>Spizella pusilla.</i>
32	.50 to .60	.70 to .78	White.	Marked with spots and speckles of chocolate-brown, chiefly about the base; about 20 spots and as many speckles to an egg. Some eggs have only two or three small spots and speckles.	3 to 5	Nest in trees, usually near extremity of a branch. Pensive. Composed of long flaxen fibres from the inner bark of trees and weeds, blades of grass, etc., lined with fine grass, horse-hair, etc. Nest and compact. Diameter of cavity at rim about 2 inches.	Warbling Vireo. <i>Vireosilvia gilvica.</i>
33	.50 to .60	.68 to .80	Dirty white; at times faintly tinted with greenish or bluish.	Some eggs marked chiefly with speckles of reddish-brown; others are blotched, spotted, and speckled; others are mainly spotted; others have ground-color nearly obscured by markings.	4 to 5	Nest on the ground in open land, especially in fields of grass and weeds near water. Composed of coarse grasses, and lined with finer grass, and sometimes horse-hair. Internal diameter about 2¼ inches.	Savannah Sparrow. <i>Passerculus sandwichensis savanna.</i>
34	.50 to .55	.65 to .74	White.	Marked with blotches, spots, and speckles of reddish-brown, usually most plentiful about the base, where they often form a wreath more or less confluent. Some eggs thickly marked with minute speckles only.	4 to 5	Nest on the ground at the foot of stump or sapling, etc., in retired woods. Composed of weed-stems, strips of bark, leaves, leaf-stems, etc., compactly pressed and woven together; lined with fine grasses, hair, and sometimes plant-down. Some nests are domed. Rarely a nest is built in a cavity in a tree.	Black-and-white Creeper. <i>Minioptila varia.</i>
35	.49 to .55	.63 to .70	White.	Marked sparsely with spots, dots, and speckles of Vandyke-brown, inclined to form a wreath at the base. Some eggs have blotches of washed-out-looking brown.	4 to 5	Nest in woodland, bushy pastures, etc., on the ground at the foot of a bush or sapling, or in a tussock of grass or weeds, usually in swampy places. Composed of leaves, strips of grape-vine bark, weed-fibres, and lined with split grasses. Inside diameter about 2½ inches; depth about 3¼ inches.	Golden-winged Warbler. <i>Helminthophaga chrysoptera.</i>
36	.49 to .55	.61 to .73	White.	Marked with blotches, spots, and speckles, and irregular fine lines of sepia. Some eggs are sparingly, some rather abundantly marked. Deep shell-marks generally more numerous than surface marks.	4 to 5	Nest in rank grass along the wooded banks of streams, along country roads, and also in woods and fields; on the ground, among upright stems. Composed of dried leaves, coarse grass, weed-fibres, etc., lined with well selected blades of grass and roller grass. Diameter of cavity about 2¼ inches.	Maryland Yellow-throat. <i>Geothlypis trichas.</i>
37	.48 to .57	.55 to .75	Commonly pure white; but may be faintly tinted with greenish or bluish.	Marked with blotches, spots, and speckles, rarely lines also, of yellowish- or reddish-brown of different shades, confined chiefly about the base, where they generally form a ring and are often confluent. Deep shell-marks purplish.	4 to 5	Nest saddled on a branch of a tree or bush, or placed in a fork. Composed of grayish fibres of plants, felted and woven together; also wool, cotton, etc. Lining usually plant-down, with a few horse-hairs. Diameter of cavity about 1.60 inches; depth about 1.30 inches. Very common.	Summer Yellow Bird. <i>Dendroica aestiva.</i>
38	.48 to .54	.62 to .70	White.	Marked with dots and speckles of brown, varying in shade from smoky tint to almost black. Sometimes confined almost entirely to basal half, often distributed regularly over whole shell, never very numerous.	5	Nest in woods, on the ground at root of weeds, sapling, etc. Composed principally of dead leaves and grape-vine bark, lined with fine shreds of bark and split grasses. Diameter of cavity from 2 to 3 inches; depth of cavity the same. Loose and unsymmetrical.	Blue-winged Yellow Warbler. <i>Helminthophaga pinus.</i>
39	.48 to .54	.60 to .68	White.	Marked with spots and speckles of reddish-brown, sparingly toward the point, plentifully about the base, where the marks are often confluent and form a wreath. Deep shell-marks are purplish.	4 to 7	Nest in holes and odd nooks about barns, outbuildings, etc.; also in stumps, hollow trees, etc. Made of straw, bark rootlets, leaves, strings, paper, rags, wool, hair, cobweb, and feathers, lined with feathers. Cavity measures in diameter about 2¼ inches.	Bewick's Wren. <i>Thryomanes bewicki.</i>
40	.48 to .52	.62 to .65	White.	Marked with fine spots and speckles of light reddish-brown. Deep shell-marks blue. Some eggs are heavily blotched, spotted, and speckled, with a tendency to form a ring around the crown.	4 to 5	Nest in open swampy thickets, among large trees. Nest pensive, 6 to 8 feet from ground; also placed against the trunk of a tree. Composed of long threads of Spanish moss. Entrance often in the side. Rare.	Blue-yellow-backed Warbler. <i>Parula americana.</i>

A—GROUND-COLOR OF SHELL WHITE OR WHITISH—CONTINUED.

No.	Size of Eggs in Short-diameter.	Size of Eggs in Long-diameter.	Ground-color of Shell.	How Marked, Color of Marks, etc.	No. in a Set.	Location, Position, Materials, Size, etc., of Nest.	English and Latin Name of Bird.
41	.47 to .52	.58 to .65	White.	Marked chiefly about the base with blotches, spots, and speckles of light reddish-brown. Some eggs are uniformly marked from point to base. Deep shell-marks infrequent.	5 to 8	Nest in natural or artificial cavities in trees, stumps, etc., in woods, etc. Birds usually excavate cavity themselves in rotten or dead wood. Nest within purse-shaped or globular. Composed of moss, hair, and other soft materials, felted together. Cavity about $1\frac{1}{2}$ inches in largest part.	Black-capped Chickadee. <i>Parus atricapillus.</i>
42	.46 to .62	.50 to .65	Dull white or ashen white.	Some eggs are marked pretty heavily with blotches and speckles, others less so, while still others are entirely and uniformly speckled with brown-madder or reddish-brown, never very decided in tone. Deep shell-marks appear gray. Some eggs look as if the color had nearly all been washed off.	4 to 5	Nest in heavily timbered woods, in a bush or sapling, in horizontal or perpendicular fork, from 2 to 10 feet from the ground. Nest is frail, composed of tendrils and slender trailing vines, etc., lined with slender moss fibres, rootlets, etc.	Black-and-yellow Warbler. <i>Dendroeca maculosa.</i>
43	.46 to .51	.57 to .69	White, with slightest creamy tint; at times faintly tinted with greenish-blue.	Marked with blotches, spots, and speckles of various shades of brown; sometimes confined chiefly to a ring about the crown; sometimes distributed pretty evenly over entire shell; at others chiefly on the basal half. Deep shell-marks lavender, often numerous, with surface marks superimposed on them.	4 to 5	Nest in saplings and bushes in retired woods, situated in a fork. Composed of strips of inner bark of trees and weeds, and grass, etc., mostly fibres. Lined with wiry threads of grape-vine bark, horse-hairs, etc. Occasionally a nest is nearly pensile. Diameter of cavity about $1\frac{1}{2}$ inches; depth between $1\frac{1}{4}$ and 2 inches.	Chestnut-sided Warbler. <i>Dendroeca pennsylvanica.</i>
44	.45 to .51	.51 to .64	White.	Marked with blotches, spots, and speckles, and often short, fine lines of light reddish-brown. Deep shell-marks fainter brown or lavender tint. Some eggs are chiefly spotted at the base; others are blotched at the base, and spotted and speckled regularly, but not very plentifully elsewhere; others are pretty heavily marked all over, but most abundantly at the base.	5 to 7	Nest in woods or about wooded banks of streams, etc., placed in a natural or artificial cavity in a tree or stump, or in a cavity made by the birds themselves in dead or rotten wood. Composed of soft fibres, moss, hair, feathers, down, etc. Nest purse-shaped or globular, felted and woven. Diameter of cavity about $1\frac{1}{2}$ inches in widest part.	Carolina Chickadee. <i>Parus carolinensis.</i>
45	.45 to .51	.59 to .68	White, often soiled white.	Marked chiefly about the base with blotches, spots, and speckles of yellowish-brown of various shades. Generally there is a well marked wreath of confluent markings about the crown. Deep shell-marks bluish.	4 to 5	Nest in woods, usually in a sapling against the main trunk; fastened to the bark generally by web. Made of flaxen fibres, web, etc., lined with horse-hairs and split grasses. Diameter of cavity about $1\frac{1}{4}$ inches; depth about $1\frac{1}{2}$ inches.	American Redstart. <i>Setophaga ruticilla.</i>
46	.42 to .49	.55 to .62	White, faintly tinged with greenish-blue.	Marked with dots, spots, and speckles over whole surface, though most plentifully about the base, with dull reddish-brown. Some specimens are marked exclusively with dots of very uniform size; others are marked with large spots; commonly they are dotted and speckled; occasionally there is a wreath about the crown. Deep shell-marks bluish tinted.	3 to 5	Nest in tall trees in woods, etc., saddled on a branch and covered with lichens. External diameter about $2\frac{1}{4}$ inches; depth about the same; diameter of cavity about $1\frac{1}{4}$ inches at the rim; an inch below it is nearly $\frac{1}{2}$ inch larger.	Blue-gray Gnatcatcher. <i>Poliophtila cerulea.</i>

B—GROUND-COLOR OF SHELL BLUE OR BLUISH, OR GREEN OR GREENISH.

No.	Size of Eggs in Short-diameter.	Size of Eggs in Long-diameter.	Ground-color of Shell.	How Marked, Color of Marks, etc.	No. in a Set.	Location, Position, Materials, Size, etc., of Nest.	English and Latin Name of Bird.
1	1.38 to 1.60	2.25 to 2.50	Greenish-blue, but covered more or less completely with a thick, white, lime-like deposit.	Unmarked, except by the lime-like wash referred to. Usually the bluish ground-color shows at several places.	3 to 5	Nest in trees or on rocky cliffs about lakes, reservoirs, rivers, etc. Usually many nests in same locality.	Florida Cormorant. <i>Phalacrocorax dilophus floridanus.</i>
2	1.38 to 1.45	1.76 to 1.86	Faintly tinted with greenish-blue.	At first glance most eggs seem to be unmarked, but close inspection shows numerous blotches of the faintest yellowish-brown or lilac. Some eggs are more boldly marked with blotches and spots of light yellowish-brown. Eggs often stained by the materials of the nest. Eggs in April or May; shell rough and unpolished.	4 to 6	Nest in open fields near swamps, ponds, etc.; upon the ground, in grass, etc.; sometimes beside a log or under a bush. Sometimes eggs laid upon the debris covering the site; more commonly, grass, leaves, weed-stems, and sticks compose a rough nest, which may be lined with moss, hair, or feathers.	Marsh Hawk. <i>Circus hudsonius.</i>
3	1.10 to 1.25	1.50 to 1.90	Greenish-blue; occasionally inclined to yellowish-brown.	Marked with small blotches, spots, and speckles of bistre; upon some eggs moderately dark, upon others very faint. Marks may be so numerous as to nearly conceal the ground-color, or may be scattered sparingly. Deep shell-marks are purplish.	4 to 6	Nest in trees in woods. Composed of sticks, weed-stems, etc., lined with weed-fibres, strips of bark, etc. Cavity well-shaped, measuring about 7 inches in diameter by 3 inches in depth.	Common Crow. <i>Corvus frugivorus.</i>
4	1.10 to 1.18	1.35 to 1.45	Faint greenish-blue, almost white at times.	Marked with very large blotches, irregular lines, spots, and speckles of various shades of brown; the largest marks being the lightest in tint. Deep shell-marks neutral tint; largest blotches often about the equator.	3 to 5	Nest in fork of tree in dense woods; rarely in a cavity in a tree, or on a shelving rock. Composed of sticks, weeds, moss, and sometimes feathers, when in a tree.	Sharp-shinned Hawk. <i>Accipiter fuscus.</i>
5	.85 to .98	1.25 to 1.35	Olive-green; also yellowish or brownish.	Marked with blotches, spots, and speckles of sepia, so heavy as to appear black. Some eggs chiefly marked with large, distinct blotches and spots; some only with small spots and speckles, confluent about the base. Deep shell-marks appear bluish. Eggs often covered entirely with mud.	3	Nest about large marshes; also along rivers; often considerable distance from shore; situated on a musk-rat house, an island of reeds, etc. No materials are carried for the nest, the eggs being laid on decaying vegetation or on the ground.	Black Tern. <i>Hydrochelidon lariformis surinamensis.</i>
6	.79 to .89	1.08 to 1.20	Greenish-blue or smoky-blue.	Marked with irregular dark brown or black blotches, dots, and lines, and distributed promiscuously over surface.	4 to 6	Nest in trees, among branches, or in a natural cavity. Composed of grass, straw, weed-stems, etc., and plastered with mud or manure. Lining, round grasses, and sometimes a little horse-hair. Inside diameter of nest about $4\frac{1}{4}$ inches.	Bronzed Grackle. <i>Quiscalus purpureus aeneus.</i>

B—GROUND-COLOR OF SHELL BLUE OR BLuish, OR GREEN OR GREENISH—CONTINUED.

No.	Size of Eggs in Short-diameter.	Size of Eggs in Long-diameter.	Ground-color of Shell.	How Marked, Color of Marks, etc.	No. in a Set.	Location, Position, Materials, Size, etc., of Nest.	English and Latin Name of Bird.
7	.78 to .84	1.05 to 1.22	Light to dark olive-green; sometimes dirty ochreous.	Marked with small blotches, spots, and speckles of a darker shade of the ground-color, or yellowish-brown. Deep shell-marks appear purplish. Some eggs are speckled plentifully over the entire shell, the marks being confluent about the base. Usually they are marked with 3 or 4 small blotches and 5 or 6 times as many spots, interspersed with speckles; majority of marks on basal half.	4 to 6	Nest in trees in country and town, not very far from ground; often in thorn trees. Made of sticks, thorns, weeds, mud, leaves, grass-fibres, paper, rags, strings, feathers, etc., lined with rootlets. Diameter of cavity about 4 inches; depth about 1½ inches.	Blue Jay. <i>Cyanocitta cristata</i> .
8	.69 to .79	.87 to 1.00	Pale greenish-blue.	Marked with bold blotches, spots, and speckles of brown-madder or reddish-brown. Deep shell-marks are lilac. Some eggs are mostly marked with blotches and spots; others are speckled, especially at the base, where, with any pattern, they incline to wreath.	4 to 5	Nest usually in a low tree or bush in woods, or about the outskirts of timber. Composed of reed-stems, rootlets, straws, bits of leaves, and pieces of twigs, lined with rootlets, weed-fibres, or horse-hair. Diameter of cavity about 3½ inches; depth about 1½ inches.	Mockingbird. <i>Mimus polyglottus</i> .
9	.67 to .76	.96 to 1.08	Bluish-green; sometimes dull yellowish-gray.	Marked with spots and speckles of reddish-brown, usually in small and diffuse pattern. Some eggs are profusely marked; others have fewer and sharper marks; some have confluent marks at base.	3 to 5	Nest in a tree or tall bush in woods, from 6 to 20 feet from the ground; often in thorn trees. Coarsely built of stubble, leaves, weed-fibres, twigs, etc., lined occasionally with a few horse-hairs. Cavity about 3 inches in diameter.	Rose-breasted Grosbeak. <i>Zamelodia ludoviciana</i> .
10	.65 to .73	.86 to 1.04	Light blue.	Marked with spots, speckles, and irregular lines and blotches of dark brown or black, which have a tendency to congregate about the crown. Deep shell-marks have a muddy-brown appearance.	3 to 6	Usually nest in tall grass, reeds, or rushes in or near a marsh; but may be in a tree, even in woods, or on the ground near damp land. Grasses, reeds, etc., compose the structure. Lining of round grass or split grass, or occasionally hairs. Diameter of cavity about 3 inches.	Red-and-buff-shouldered Blackbird. <i>Agelaius phoeniceus</i> .
11	.68 to .68	.88 to 1.00	Light bluish-green.	Marked with blotches, spots, and speckles of reddish-brown in various shades and combinations. Usually there is a slight wreath about the crown; marks often chiefly on basal half.	3 to 5, usually 3	Nest in trees in or near woods, from 5 to 15 feet from ground; usually saddled on a limb of several inches diameter. Composed of weed-stems, trailing vines, rootlets, etc. Diameter of cavity from 2½ to 2¾ inches; depth of cavity from 1¼ to 1½ inches.	Scarlet Tanager. <i>Pyranga rubra</i> .
12	.61 to .70	.85 to .93	Light bluish-green, varying in purity and shade in different sets.	Marked with blotches, spots, and speckles of yellowish-brown over whole shell; about the crown there is generally a slight wreath of confluent marks. The blotches and dots have ragged outlines and less color at the edges than in center. Deep shell-marks dull purplish.	3 to 5, usually 3	Nest in woods, from 5 to 25 feet above ground; generally at end of limb, supported by a number of twigs. Made of dead grass, lined with grass. Diameter of cavity from 2½ to 2¾ inches; depth from 1 to 1¼ inches.	Summer Redbird. <i>Pyranga testiva</i> .
13	.60 to .65	.85 to .95	Faintly tinted with grayish-blue.	Marked with blotches, spots, and speckles, also occasionally short lines of sepia. Some eggs are evenly and thickly marked; some are marked principally at the base; others are evenly but sparingly blotched and dotted.	4 to 6	Nest in any kind of cavity or hole about trees, buildings, etc. Composed of any accessible material, lined with feathers.	English Sparrow. <i>Passer domesticus</i> .
14	.57 to .67	.80 to .91	Bluish-green or blue-gray tinted; sometimes slate color.	Marked with well-defined spots, and often speckles of sepia, nearly black; marked sparingly but regularly over the whole shell, sometimes forming a wreath about the crown. Usually markings are in small groups. Deep shell-marks nearly as numerous as surface marks.	4 to 5	Nest in a medium sized tree, often orchard or shade tree, in town or country; saddled on a limb or in a perpendicular crotch. Made of rootlets, weed-stems, tendrils, fibres, grass, leaves, strings, paper, rags, etc.; lining contains thread-like rootlets. Diameter of cavity varies from 2½ to 3½ inches; depth from 1¼ to 2½ inches.	Cedar Waxwing. <i>Ampelis cedrorum</i> .
15	.56 to .62	.72 to .86	Very light bluish-green.	Marked with a few blotches, spots, speckles, and irregular lines of various shades of brown. Deep shell-marks purplish.	3 to 5	Nest in trees, either suspended from extremity of limb or suspended between several upright stems; in orchards or trees in fields, etc. Made of fresh blades of blue-grass, fibres, and strips of bark, generally lined with feathers, wool, plant down. Cavity measures 2¼ inches in diameter by 2½ inches in depth.	Orchard Oriole. <i>Icterus purius</i> .
16	.53 to .65	.72 to .84	Greenish-blue.	Marked sparingly, with blotches, spots, and speckles, and occasionally lines of very dark brown, almost black, chiefly about the base. Deep shell-marks gray or lilac.	4 to 6	Nest usually in evergreens in lawns in country and town; also in fruit trees, etc. Composed chiefly of rootlets. Diameter of cavity about 2 inches; depth about 1 inch.	Purple Finch. <i>Carpodacus purpureus</i> .
17	.58 to .58	.69 to .78	Lightly tinted with bluish-green, often clouded with brown.	Marked with blotches, spots, speckles, and rarely short lines of reddish-brown, sometimes nearly burnt sienna. Deep shell-marks bluish. Some eggs are so heavily marked as to obscure the ground-color at the base; some are thickly marked everywhere; some have a wreath about the crown.	4 or 5	Nest generally in swampy land, on the ground at the foot of a bush, or in a tussock of grass; occasionally in a low bush. Composed of grass, weed-stems, rootlets, weed-fibres, etc., lined with grass. Diameter of cavity from 2 to 2¼ inches.	Swamp Sparrow. <i>Melospiza palustris</i> .
18	.52 to .60	.70 to .83	Faint dull blue, sometimes decidedly blue; occasionally nearly brown.	Quantity of markings vary from a few blotches and spots to such a number as to nearly obscure the ground-color. Some eggs have a wreath around the crown made of either confluent or separate blotches, etc.; others are uniformly and closely speckled. Between these extremes various combinations are common. Markings are reddish-brown.	3 to 6	Nest on the ground, in stunted trees, bushes, dirt-piles, etc. Made of weed-stems, roots, blades of grass, straws, bits of dead leaves, etc., lined with slender blades of grass, split grasses, and long horse-hair. Diameter of cavity from 2½ to 2¾ inches; depth from 1¼ to 2 inches.	Song Sparrow. <i>Melospiza fasciata</i> .
19	.50 to .55	.61 to .73	Faint greenish-blue.	Marked with blotches, dots, and fine speckles of light reddish- or yellowish-brown over entire egg, but most plentifully about the base, often forming a wreath. Deep shell-marks purplish. Some eggs speckled only.	3 to 5	Nest on the ground or in a bush in woods. Loosely built of weed-stalks, split grasses, roller grass, and rootlets, lined with black horse-hairs or split grasses. Diameter of cavity from 1½ to 2½ inches; depth of cavity about 1½ inches.	Field Sparrow. <i>Spizella pusilla</i> .
20	.49 to .58	.60 to .82	Light bluish-green.	Marked chiefly about the basal half with blotches, spots, and sometimes lines of various shades of brown, sometimes almost black. Deep shell-marks are purplish.	3 to 5	Nest in woods and open country, in bushes, trees, vines, etc., in orchards, gardens, and lawns in town and country; from 1 to 30 feet above ground. Materials vary with locality; usually made of weed-fibres, rootlets, grass, etc., lined with horse-hairs. Diameter of cavity about 1½ inches.	Chipping Sparrow. <i>Spizella domestica</i> .

C—GROUND-COLOR OF SHELL NEITHER WHITE OR WHITISH, NOR BLUE OR
BLUISH, OR GREEN OR GREENISH.

No.	Size of Eggs in Short-diameter.	Size of Eggs in Long-diameter.	Ground-color of Shell.	How Marked, Color of Marks, etc.	No. in a Set.	Location, Position, Materials, Size, etc., of Nest.	English and Latin Name of Bird.
1	1.80 to 2.00	2.56 to 3.03	Creamy or light greenish-gray.	Marked with blotches, spots, and speckles of various shades of chocolate-brown distributed over whole egg, but most plentifully at the base; not often much confluent. Deep shell-marks purplish.	2	Nest in hollow trees and stumps or upon the ground in woods, often in unexpected places in upland woods. No materials are carried for the nest. When on the ground, eggs laid on leaves, etc.	Turkey Buzzard. <i>Cathartes aura</i> .
2	1.70 to 1.94	2.30 to 2.80	Light, soiled buff.	Marked over entire shell with spots and speckles, rarely blotches, of a deep shade of the ground-color or yellowish-brown; most numerous about the base. Nearly every egg has at least one group of spots larger and darker than the rest.	10 to 20	Nest on the ground in woods with underbrush, under top of fallen tree, beside a log, among bushes, etc. A hollow is scratched in the soft loam and covered with dead leaves; on these the eggs are laid.	Wild Turkey. <i>Meleagris gallopavo americana</i> .
3	1.48 to 1.55	1.90 to 2.00	Brownish, sometimes dirty white.	Marked with clouds, blotches, spots, and speckles of reddish-brown or yellowish-brown, of various shades. Some eggs are sparingly and regularly marked; others are so heavily marked at one end as to conceal the ground-color; others are marked chiefly with deep shell-marks, which appear lavender.	3 to 5	Nest in trees in damp woods and wooded swamps. Composed of sticks, weed-stems, grasses, etc. Built in March or April.	Broad-winged Hawk. <i>Buteo pennsylvanicus</i> .
4	1.25 to 1.38	1.75 to 1.90	Light drab or yellowish-brown.	Marked with blotches, spots, and speckles of dark Vandyke-brown. Some eggs contain a number of bold blotches; others are entirely speckled. The shell is usually pretty uniformly covered; eggs more than ordinarily pointed. Deep shell-marks not plentiful, Payne's gray or neutral tint.	3 to 4	Nest in upland fields of grass, clover, wheat, etc., usually near water, on the ground. Composed of a little grass, weed-stems, etc., carelessly put together.	Bartram's Sandpiper. <i>Bartramia longicauda</i> .
5	1.22 to 1.32	1.70 to 1.95	Grayish or pale brownish-buff.	Marked with dots and speckles of sepia, distributed uniformly and plentifully; rarely confluent. Few marks are larger than a pin's head.	8 to 10	Nest in marshes, etc., situated on the ground among reeds, grass, etc., or a foot or so above the water among reeds. Composed of dead reeds, grasses, etc. Rather bulky; shallow.	American Coot. <i>Fulica americana</i> .
6	1.20 to 1.30	1.65 to 1.75	Light clay color, brownish or yellowish-olive.	Some eggs are almost unmarked; others are uniformly speckled more or less plentifully with brown.	8 to 12	Nest in tall grass in open prairie land. Composed of grass, weed-stems, etc.	Prairie Hen. <i>Cupidonia cupido</i> .
7	1.18 to 1.25	1.58 to 1.63	Reddish, flesh-tint, faint yellowish or grayish.	Marked with blotches, spots, and speckles of amber, inclining to brown-madder. Many marks are beneath the surface and appear of different tints, according to their depth; marks never very numerous.	8 to 10	Nest in marshy places overgrown with grass, flags, reeds, lilies, etc. Composed of grass, reeds, flags, etc.	Red-breasted Rail. <i>Rallus elegans</i> .
8	1.12 to 1.26	1.55 to 1.84	Pale brownish buff.	Marked plentifully with small blotches, speckles, and dashes of rich chocolate-brown. Markings larger and more numerous toward the greater end.	6 to 10	Nest in marshes, etc., usually supported by the foot-stalks of a clump of flags or grass. Floating nests sometimes occur. Composed of dried reeds, weed-stems, etc. About 8 inches in diameter at base; 5 or 6 inches high; diameter at top about 6 or 7 inches.	Florida Gallinule. <i>Gallinula galeata</i> .
9	1.10 to 1.20	1.44 to 1.65	Brown, varying from a light shade of Vandyke to bistre; also yellowish-brown.	Marked not very plentifully with blotches, spots, and speckles of a darker shade of ground-color; often confluent at the base, where they are the most numerous. Deep shell-marks purplish or neutral tint. Eggs from last of February to May.	4	Nest on the ground in woods. Eggs laid upon a natural arrangement of leaves, or leaves may be carelessly arranged in a depression at the foot of a bush, tree, etc.	American Woodcock. <i>Philohela minor</i> .
10	1.05 to 1.23	1.30 to 1.85	Burnt sienna usually; may be almost white, yellowish or reddish-brown.	Marked with blotches, spots, and speckles of reddish- or yellowish-brown. Blotches often so large as to cover one-fifth the shell. Generally the marks are few in number, but they may be numerous, especially at the base, where ground-color may be obscured.	4 to 7	Nest in trees, in natural cavities, or in deserted Woodpeckers' nests. Usually, the trees are old, dead, and semi-decayed, and stand alone in fields. Eggs in April or May.	Sparrow Hawk. <i>Tinnunculus sparverius</i> .
11	.98 to 1.07	1.40 to 1.45	Smoky buff.	Marked with blotches, spots, and speckles of brown, at times almost black. Distributed over entire shell; but marks are largest and most numerous on the basal end. Usually eggs contain several blotches; occasionally marked entirely with speckles.	4	Nest usually near water, along shore, or in recently plowed fields; also sometimes in a grass or pasture field; always on the ground. Composed of a few sticks, weed-stems, etc., carefully laid in a little depression in the ground. Often eggs on bare ground.	Killdeer. <i>Oxyechus vociferus</i> .
12	.90 to 1.00	1.30 to 1.40	Clay-colored or drab.	Marked with blotches, spots, and speckles of reddish-brown, not very unlike the above (Killdeer).	4	Nest on the ground in open fields, or near the border of a wooded pond, etc. Said sometimes to lay in the nest of the Wood Thrush, etc. Birds not uncommon, but eggs never positively identified in Ohio.	Solitary Sandpiper. <i>Rhyacophilus solitarius</i> .
13	.85 to .98	1.25 to 1.35	Light yellowish-brown or coffee-brown; also olive-green.	Marked with blotches, spots, and speckles of sepia, so heavy as to appear black. Some eggs marked principally with large distinct blotches and spots; some only with small spots and speckles, confluent about the base; others have various combinations of these marks. Deep shell-marks show bluish upon light ground-colors. Markings often obscured by a coating of mud.	3	Nest about large marshes; also along rivers, often considerable distance from shore; situated on a musk-rat house, an island of reeds, etc. No materials are carried for the nest. The eggs resting on ground or decaying vegetation.	Black Tern. <i>Hydrochelidon lariformis surinamensis</i> .
14	.84 to .94	1.13 to 1.30	Light shade of yellowish brown or stone color.	Marked plentifully over the entire shell with blotches, spots, speckles, and short lines of slate color or yellowish-brown.	2	No materials are carried for the nest. Eggs laid on bare ground or rocks; also on the flat roofs of city houses, etc.	Night Hawk. <i>Chordeiles popetue</i> .
15	.83 to .93	1.15 to 1.30	Light yellow-brown.	Marked with reddish-brown blotches, spots, and speckles, chiefly about the larger end. Usually there are deep shell-marks, violet-gray in appearance.	6 to 10	Nest in marshes and about wet patches of ground; either upon the ground or upon some rubbish. Made of grass, weed-stems, reeds, etc.	Virginia Rail. <i>Rallus virginianus</i> .
16	.80 to .90	1.15 to 1.30	Buff.	Marked with blotches, spots, and speckles of brown, varying in shade in different eggs from light brown to almost black. Some eggs are heavily spotted; some have a few large blotches of color at the base; and some, the usual pattern, have bold spots and speckles, increasing in size and number from point to base. Deep shell-marks bluish.	4	Nest on the ground, always near water, in open places. Composed of small sticks, weed-stems, blades of grass, etc., placed in a little hollow. Often eggs are laid on the bare ground.	Spotted Sandpiper. <i>Tringoides macularius</i> .

**C—GROUND-COLOR OF SHELL NEITHER WHITE OR WHITISH, NOR BLUE
OR BLUISH, OR GREEN OR GREENISH—CONTINUED.**

No.	Size of Eggs in Short- diameter.	Size of Eggs in Long- diameter.	Ground-color of Shell.	How Marked, Color of Marks, etc.	No. in a Set.	Location, Position, Materials, Size, etc., of Nest.	English and Latin Name of Bird.
17	.80 to .90	1.20 to 1.30	Brown, shading in some eggs toward olive or brownish-buff.	Marked, not very plentifully, with blotches, spots, and speckles, of the same color as the ground, but darker. Deep shell-marks often wanting. When they occur they are bluish-gray.	6 to 10	Nest in marshes and about wet patches of ground, either upon the ground or upon some rubbish. Made of grass, weed-stems, reeds, etc.	Sora Rail. <i>Porzana carolina.</i>
18	.70 to .82	.90 to 1.04	Dingy yellowish-brown.	Marked with irregular spots and blotches of darker shade of ground-color. Deep shell-marks purplish-brown. Markings quite uniformly distributed, or chiefly about the crown in a wreath.	5 to 6	Nest in orchard trees, hedges, and small trees in open fields; honey-locust trees favorites. Composed of weed-stems, grass, weed-fibres, feathers, thorns, etc.; lined with flaxen-fibres, feathers, wool, etc. Inside diameter $3\frac{1}{2}$ inches.	Loggerhead Shrike. <i>Lanius ludovicianus.</i>
19	.60 to .72	.80 to .95	Buff or yellowish-clay-color.	Marked with lines, blotches, spots, and speckles of burnt umber, or walnut-color. Deep shell-marks are purplish or bluish. Eggs are thickly marked. Usually the lines run lengthwise, often crossing one another.	4 to 6	Nest in cavity, natural or artificial, in a tree, usually in woods, but may be in an orchard tree in country or town. Nest composed of weed-stems, etc., almost invariably pieces of snake skin are to be found about the rim.	Great-crested Flycatcher. <i>Myiarchus crinitus.</i>
20	.55 to .65	.70 to .90	Very light gray, drab, olive, or reddish.	Marked with large blotches, spots, and speckles; also occasionally lines of warm, rich brown, or brown, nearly black. Deep shell-marks purplish-gray, and often numerous. Eggs usually profusely marked; sometimes greatly obscuring the ground-color; shell often looks stained.	1 to 5	Nest on the ground in damp meadows, etc. Composed of grass, clover-stalks, etc.; lined with grass. Diameter of cavity about 3 inches.	Bobolink. <i>Dolichonyx oryzivorus.</i>
21	.55 to .59	.70 to .79	Light buff or creamy.	Marked with blotches, spots, and minute specks of chocolate- or reddish-brown, chiefly on the basal half; often forming a ring; seldom more than 20 blotches and spots; seldom deep shell-marks.	3	Nest in low trees or in the lower limbs of large trees in woods, usually within reach, in a horizontal crotch near the end of a limb. Made of small, round weed-stems, tendrils, catkins, etc.; a frail affair, supported at sides only. Eggs often may be seen through the bottom. Diameter of cavity about 2 inches.	Acadian Flycatcher. <i>Empidonax acadicus.</i>
22	.51 to .58	.66 to .74	Light buff or creamy.	Marked with large blotches, spots, and speckles of various shades of chocolate-brown, from a light wash to almost black. Number of marks from 2 to 20, chiefly about the basal end.	2 to 4, usually 3	Nest in bushes and low trees in thickly overgrown bottom land, etc.; willow thickets, so dense as to be almost impenetrable, are favorite places; most generally in a perpendicular fork, within reach from the ground. Composed of flaxen fibres, weed-stems, etc.; lined with split grasses, roller grass, etc. Diameter of cavity about 2 inches; depth, about $1\frac{1}{2}$ inches.	Trail's Flycatcher. <i>Empidonax pusillus trailii.</i>
23	.50 to .59	.65 to .79	Light buff or creamy.	Marked with blotches, spots, and speckles of chocolate-brown or reddish-brown, confined to the base, where they form a ring; often they are confluent. Deep shell-marks about as numerous as surface marks, and lavender in color.	3 to 4	Nest in trees about the border of woods, on the banks of streams, etc.; also in town in shade trees. Nest situated on upper surface of a limb or in a horizontal fork; sometimes on a dead limb. Nest covered entirely or partly with lichens. Diameter of cavity from 1.80 to 2.25 inches.	Wood Pewee. <i>Contopus virens.</i>
24	.48 to .55	.62 to .72	Pinkish or sometimes nearly white.	Marked with blotches, spots, and speckles, so thickly as to nearly obscure the ground-color of some specimens. Some are thickly and uniformly speckled only; others have a ring about the base, composed of blotches and spots in addition to the speckles elsewhere. But whatever the arrangement of the marks, they are uniformly brown-madder. Deep shell-marks may be wanting or numerous.	5 to 9	Nest about old buildings, etc., in all kinds of odd nooks; also in natural cavities in orchard and other trees; often in bird-boxes. Composed of sticks, weed-stems, strings, horse-hair, moss, feathers, etc. Diameter of cavity about 2 inches.	House Wren. <i>Troglodytes aedon.</i>
25	.48 to .53	.60 to .70	Chocolate, often of a pinkish cast; some eggs are only lightly tinted; others as dark as a grain of browned coffee.	Some eggs are nearly plain; others are heavily marked over entire shell; some have only very fine and indistinct speckles; others moderately large and bold spots and speckles. The various ground-colors and different markings combine to make very numerous patterns. Marks usually a darker shade of ground-color.	1 to 6	Nest usually between 1 and 3 feet above ground or water; placed in a bush, reeds, cat-tails, or marsh grass; globular, about the size of a small coconut. Composed chiefly of long blades of grass, interwoven. Found only about swamps.	Long-billed Marsh Wren. <i>Telmatodytes palustris.</i>



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.

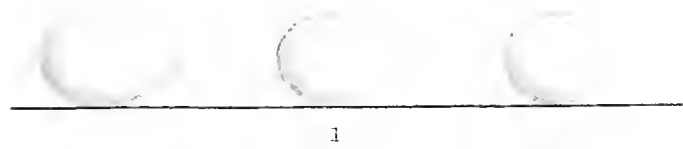
DIFFERENTIAL POINTS:

See Table.

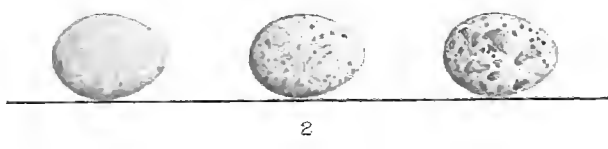
REMARKS:

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 $1\frac{1}{2}$ 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.



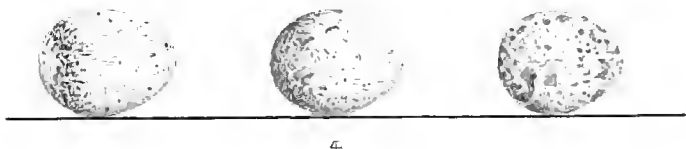
1



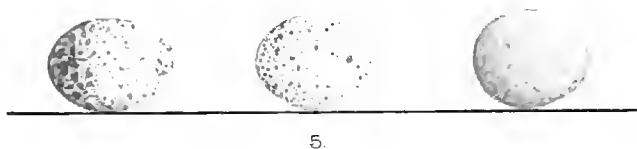
2



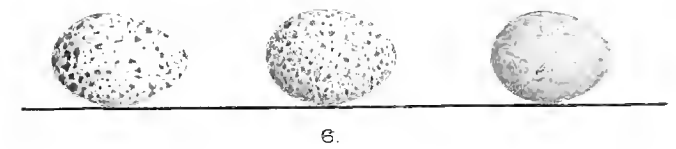
3



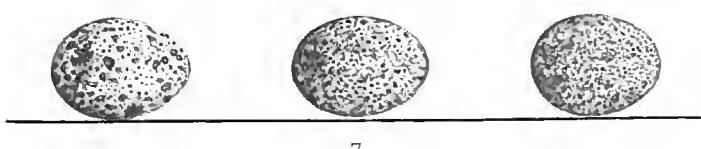
4



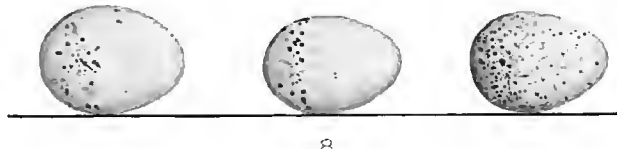
5



6



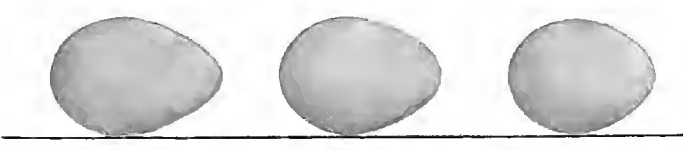
7



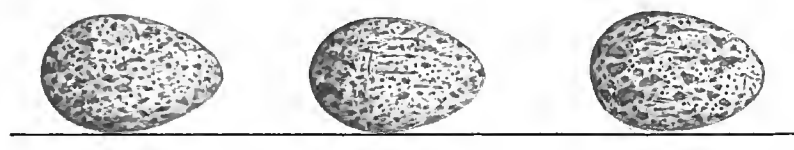
8



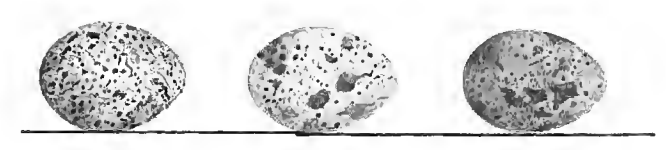
9



10



11



12



13

Fig. 13 RHYACOPHILUS SOLITARIUS
SOLITARY SANDPIPER

- Fig. 1 TACHYCNETA BICOLOR
WHITE-BELLIED SWALLOW
- Fig. 2 DENDROECA 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 HYLOCICHLA UNALASCÆ PALLASI
HERMIT THRUSH
- Fig. 11 ZAMELODIA LUDOVICIANA
ROSE-BREADED GROSBEAK
- Fig. 12 DOLICHONYX ORYZIVORUS
BOBOLINK

PLATE LXVIII.

Fig. 1. *TACHYGINETA 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 umber, 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 pensile, 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:

Andubon 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 .50 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 .68 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 (*Sesuvium 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!

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!

'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!

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!

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!

"Only think" with your eye cocked upon me—
 "That a clap 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!"

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?

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?

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!

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 Lake 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 ἀγέλιος,=gregarious.
phoeniceus, adj. L.,=purple red.
- Aix sponsa*.
aix, subs. Gr. (αἰξ),=a water-fowl mentioned by Aristotle.
sponsa, subs. L.,=a bride.
- Ampelis cedrorum*.
ampelis, subs. Gr.,=the ἀμπελιζ or ἀμπελιών, a bird mentioned by Aristophanes in *The Birds*.
cedrorum, subs. L.,=of the cedars.
- Anas boschas*.
anas, subs. L.,=duck.
boschas, subs. Gr. (βοσκάτ),=duck.
- Ardeetta exilis*.
ardeetta, 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. ἑρωδιός,=heron.
- B**
- 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. (βονασός),=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.
δάκνω,=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 κέντρον,=a goad.
ὄψα,=a tail.
carolinus, adj. L.,=(improperly) of Carolina.
- Chaetura pelagica*.
chaetura, adj. Gr.,=hair-tailed.
 comp. of χαιτή,=hair.
ὄψα,=tail.
pelagica, adj. Gr.,=wandering.
- Chondestes grammica*.
chondestes, subs. Gr.,=groundling.
 Formed from χῶς, ground.
grammica, adj. Gr.,=striped.
 From γράμμα, a line.

- Chordeiles popetue*.
chordeiles, subs. Gr.,=chord of evening.
popetue (perhaps from *ποποποῖ*,=cry of the hoopoe).
- Circus cyaneus*, var. *Hudsonius*.
circus, subs., Gr. (*αἰροζοζ*),=hawk.
cyaneus, adj. L.,=deep blue.
hudsonius, adj. L.,=Hudsonian, i. e., of Hudson's Bay.
- Colaptes auratus*.
colaptes subs. Gr. (*κολαπτέρης*),=hammer.
auratus, adj. L.,=golden gilded.
- Coccyzus americanus*.
coccyzus, subs. Gr. (*κοκκυζῆς*),=cuckoo.
americanus, adj. L.,=American.
- Coccyzus erythrophthalmus*.
coccyzus, subs. Gr. (*κοκκυζῆς*),=cuckoo.
erythrophthalmus, adj. Gr.,=red-eyed.
comp. of *ἐρυθρόφθαλμος*,=red.
ὄφθαλμός,=eye.
- Collurio ludovicianus*.
collurio, subs. Gr. (*κολλυρίων*),=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.
voros,=I eat greedily.
- Cotile riparia*.
cotile, subs. Gr. (*κοτιλάς*),=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.
ὄψα,=tail.
cristata, adj. L.,=tufted.
- D**
- Dendroeca maculosa*.
dendroeca, subs. Gr.,=tree dweller.
comp. of *δένδρον*,=a tree.
ὄκτώ,=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 *δολιχός*,=long.
ὄνυξ,=nail, claw.
oryzivorus, adj. L.,=rice eating.
comp. of *oryza*,=rice.
voros,=I eat greedily.
- Dytes auritus*.
dytes, subs. Gr. (*δύτης*),=diver.
auritus, adj. L.,=furnished with ears.
- E**
- Ectopistes migratoria*.
ectopistes, subs. Gr. (*ἐκτοπίστεις*),=wanderer.
migratoria, adj. L.,=wandering.
- Empidonax acadicus*.
empidonax, subs. Gr.,=mosquito king.
comp. of *ἐμπίς*,=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.
θῶς,=proper name.
trichas, subs. Gr. (*τριχάς*),=thrush.
- H**
- Harporyhynchus rufus*.
harporyhynchus, subs. Gr.,=hawk-bill.
comp. of *ἄρπυξ*,=the Egyptian kite.
ῥύγχος,=a bill or beak.
rufus, adj. L.,=reddish brown.
- Helminthophaga pinus*.
helminthophaga, subs. Gr.,=worm-eater.
comp. of *ἕλμινξ*,=worm.
φαγεῖν,=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.

Hylocichla fuscescens.
hylocichla, subs. Gr.,=wood thrush.
comp. of *ὕλη*,=wood.
τίτης,=thrush.
fuscescens, adj. L.,=somewhat swarthy.

Hylocichla unalascae pallasii.
hylocichla, subs. Gr.,=wood thrush.
unalascae, subs. L.,=of Unalaska.
pallasii, subs. L.,=Pallas'.

I

Icterus baltimore.
icterus, subs. Gr.,=a yellow bird.
baltimore, Eng. adj.,=Baltimore.

Icterus spurius.
icterus, subs. Gr.,=a yellow bird.
spurius, adj. L.,=spurious, bastard.

Icteria virens.
icteria, subs. Gr.,=jaundice color.
virens, adj. L.,=greenish.

L

Lanius vireo 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.
φανέας,=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.
σπίζα,=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.
ἔρπηξ,=creeper.
erythrocephalus, adj. Gr.,=red-headed.
comp. of *ἔρυθρός*,=red.
κεφαλή,=head.

Melospiza palustris.
melospiza, subs. Gr.,=singing finch.
comp. of *μέλος*,=song.
σπίζα,=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 *πολύς*,=many.
γλῶσσα,=tongue.

Molothrus ater.
molothrus, subs. Gr.,=parasite.
μολοθρός,=μολοθρός.
ater, adj. L.,=black.

Mniotilta varia.
mniotilta, subs. Gr.,=moss-plucking.
comp. of *μόσχος*,=moss.
τίλλω,=I pluck.
varia, adj. L.,=parti-colored.

Myiarchus crinitus.
myiarchus, subs. Gr.,=fly-catcher.
For *μυιαγρος*,=name of an Elean
God.
crinitus, adj. L.,=hairy.

O

Ortyx virginianus.
ortyx, subs. Gr. (ὄρτυξ),=quail.
virginianus, adj. L.,=Virginian.

Oryzopsis vociferus.
oryzopsis, subs. Gr.,=high sounding one.

comp. of *ὄζυς*,=sharp.
ἦχος,=sound.
vociferus, adj. L.,=vociferous.

P

Pandion haliaetus carolinensis.
pandion,=Πανδιόν, a Greek proper
name.

haliaetus, subs. Gr.,=sea eagle.
ἀλιεύς.

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 *ater*,=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.
γελιδών,=a swallow.
lunifrons, subs. L.,=crescent-face.
comp. of *luna*,=moon.
frons,=forehead, face.

Philohela minor.
philohela, subs. Gr.,=loving low ground.
comp. of *φιλος*,=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 δις,=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 *pipio*), subs. L.,=a chirping bird.
erythrophthalmus, adj. Gr.,=red-eyed.
comp. of ἐρυθρόζ,=red.
ὄφθαλμός,=eye.
- Poocetes gramineus*.
poocetes, subs. Gr.,=grass-dweller.
comp. of ποός,=grass.
ἀσχητόζ,=inhabitant.
gramineus, adj. L.,=grassy.
- Polioptila caerulea*.
polioptila, subs. Gr.,=gray-wing.
comp. of πολίός,=gray.
πίλον,=feather, wing.
caerulea, 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. (ζόλυμφοζ),=diver.
podiceps(*colymbus*).
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 ζερροβρίζ.
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 ῥυαζός,=of a brook.
φίλος, a friend.
solitarius, adj. L.,=solitary.
- S
- Sayornis fuscus*.
sayornis, subs. L. and Gr.,=Say's bird.
comp. of *sayi*,=gen. of (Thos.) Say.
ὄρνις,=bird.
fuscus, adj. L.,=tawny.
- Setophaga ruticilla*.
setophaga, subs. Gr.,=moth-eater.
comp. of σήζ,=moth.
εἰς ἀγρον,=I ate (ἐσθίω).
ruticilla,=adj. L.,=reddish.
- Sialia sialis*.
sialia, adj. Gr.,=slavering.
Perhaps of σιάλος,=a slavering noise.
sialis, subs. Gr.,=name of some bird.
- Sitta carolinensis*.
sitta, subs. Gr. (σίττη),=nuthatch.
carolinensis, adj. L.,=of Carolina.
- Seiurus auricapillus*.
seiurus, subs. Gr.,=tail-shaker.
comp. of σείω,=I shake.
ὄψά,=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 σπιζα,=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.
πτέρυξ,=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 ταχίς,=quick.
κινητός,=movable.
bicolor, subs. L.,=two-colored.
comp. of *bis*,=twice.
color,=color.
- Telmatodytes palustris*.
telmatodytes, adj. Gr.,=swamp-dweller.
comp. of τέλμα,=swamp.
ὄστρηζ,=inhabitant.
palustris, adj. L.,=marshy.
- Thryomanes bewicki*.
thryomanes, subs. Gr.,=rush dweller.
comp. of θρόνον,=a rush.
μνήζ,=an inhabitant.
bewicki, subs. L.,=Bewick's.
- Thryothorus ludovicianus*.
thryothorus, adj. Gr.,=brush-leaping.
comp. of θρόνον,=a rush, a reed.
δορῆν,=to leap upon.
ludovicianus, adj. L.,=Louisianian.

Tinnunculus sparverius.

tinnunculus, subs. L.,=kestrel.
sparverius, adj. L.,=like a sparrow.

Tringoides macularius.

tringoides, adj. Gr.,=sandpiper-like.
comp. of $\tau\rho\acute{\upsilon}\gamma\gamma\alpha\varsigma$,=a sort of wagtail.
 $\epsilon\acute{\iota}\delta\acute{\eta}\varsigma$,=like.
macularius, adj. L.,=spotted.

Trochilus colubris.

trochilus, subs. Gr.,=a bird of the sand-
piper species.
From $\tau\rho\epsilon\chi\omega$,=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 $\tau\rho\acute{\omega}\gamma\lambda\eta$,=a hollow.
 $\delta\acute{\upsilon}\omega$,=I enter.
aedon, subs. Gr. ($\acute{\alpha}\eta\delta\omega\nu$),=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.
 $\delta\upsilon\rho\alpha$,=tail.
carolinensis, adj. L.,=of Carolina.

Zamelodia ludoviciana.

zamelodia, subs. Gr.,=much singing.
comp. of $\zeta\acute{\alpha}$,=very.
 $\mu\epsilon\lambda\omega\delta\acute{\iota}\alpha$,=melody (perhaps
for $\mu\epsilon\lambda\omega\delta\acute{\omicron}\varsigma$,=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.

NAMES OF SUBSCRIBERS.

HON. HENRY F. PAGE,	CIRCLEVILLE, OHIO.
MISS SARAH PORTER,	FARMINGTON, CONN.
MRS. J. S. CASEMENT,	PAINESVILLE, OHIO.
SMITHSONIAN INSTITUTION,	WASHINGTON, D. C.
WORCESTER FREE LIBRARY,	WORCESTER, MASS.
PEABODY INSTITUTE,	BALTIMORE, MD.
OMAR T. JOSLIN,	CINCINNATI, OHIO.
MRS. S. B. CONE,	STOCKBRIDGE, MASS.
J. A. HAWKS,	CIRCLEVILLE, OHIO.
MRS. N. J. TURNEY,	CIRCLEVILLE, OHIO.
MRS. WILLIAM BRADFORD,	CLEVELAND, OHIO.
EX-PRESIDENT R. B. HAYES,	FREMONT, OHIO.
REV. VINCENT CLEMENTI,	PETERBORO, ONTARIO, CANADA.
HENRY D. MINOT,	BOSTON, MASS.
W. B. CLARKE & CARRUTH,	BOSTON, MASS.
EDWARD S. DENTON,	WEST POINT, NEW YORK.
DR. J. M. WHEATON,	COLUMBUS, OHIO.
DR. EDGAR A. MEARNS,	HIGHLAND FALLS, NEW YORK.
JOSEPH M. WADE,	BOSTON, MASS.
ERASTUS CORNING, JR.,	ALBANY, NEW YORK.
DR. W. W. DAWSON,	CINCINNATI, OHIO.
PETER G. THOMSON,	CINCINNATI, OHIO.
CINCINNATI LIBRARY,	CINCINNATI, OHIO.
CHARLES W. SEVER,	CAMBRIDGE, MASS.
HARNES RENICK,	CIRCLEVILLE, OHIO.
JOSEPH LONGWORTH,	CINCINNATI, OHIO.
COSTELLO LIPPITT,	NORWICH, CONN.
MRS. MARCUS RADCLIFF,	CIRCLEVILLE, OHIO.
JOSEPH ERB,	COLUMBUS, OHIO.
D. P. REMER,	OBERLIN, OHIO.
DULAU & CO.,	LONDON, ENGLAND.
R. L. MAITLAND,	NEW YORK CITY.
HOWARD MOORE,	CIRCLEVILLE, OHIO.
BUNN BENFORD,	CIRCLEVILLE, OHIO.
DR. ELLIOTT COUES,	WASHINGTON, D. C.
MISS EUNICE LYMAN,	EAST HAMPTON, MASS.—Uncolored.
H. C. WANN,	ABILENE, KANSAS—Uncolored.
C. J. MAYNARD,	NEWTONVILLE, MASS.—Uncolored.
CONGRESSIONAL LIBRARY,	WASHINGTON, D. C.—Uncolored.

INDEX TO ILLUSTRATIONS.

Plates Published in 1879.

- I. *Icterus galbula*.—Baltimore Oriole.
- II. *Hylocichla ustulata*.—Wood Thrush.
- III. *Coccyzus erythrophthalmus*.—Black-billed Cuckoo.
- IV. *Cyanospiza cyanea*.—Indigo Bird.
- V. *Agelaius phoeniceus*.—Red-and-buff-shouldered Black-bird.
- VI. *Tyrannus carolinensis*.—Kingbird.

Plates Published in 1880.

- VII. *Quiscalus purpuraceus* (var. *Aeneus*, Ridgw.).—Bronzed Grackle.
- VIII. *Merula migratoria*.—Robin.
- IX. *Lanius ludovicianus*.—Loggerhead Shrike.
- X. *Sayornis fuscus*.—Pewee Flycatcher.
- XI. *Thryothorus ludovicianus*.—Great Carolina Wren.
- XII. *Sialia sialis*.—Bluebird.
- XIII. *Hirundo erythrogaster*.—Barn Swallow.
- XIV. *Coccyzus americanus*.—Yellow-billed Cuckoo.
- XV. *Dendroica aestiva*.—Summer Warbler.
- XVI. *Spizella pusilla*.—Field Sparrow.
- XVII. *Galeoscoptes carolinensis*.—Catbird.
- XVIII. *Ortyx virginiana*.—Quail; Bob-white.

Plates Published in 1881.

- XIX. Fig. 1. *Empidonax acadicus*.—Acadian Flycatcher.
- “ “ 2. *Contopus virens*.—Wood Pewee.
- XX. *Icteria virens*.—Yellow-breasted Chat.
- XXI. *Geothlypis trichas*.—Maryland Yellow-throat.
- XXII. *Cardinalis virginianus*.—Cardinal Redbird.
- XXIII. Fig. 1. *Vireosylva gilva*.—Warbling Vireo.
- “ “ 2. *Vireosylva olivacea*.—Red-eyed Vireo.
- XXIV. *Zenaidura carolinensis*.—Mourning Dove.
- XXV. Fig. 1. *Trochilus colubris*.—Ruby-throated Hummingbird.
- “ “ 2. *Polioptila caerulea*.—Blue-gray Gnatcatcher.
- XXVI. *Spizella socialis*.—Chipping Sparrow.
- XXVII. *Butorides virescens*.—Green Heron.
- XXVIII. *Progne purpurea*.—Purple Martin.
- XXIX. *Euspiza americana*.—Black-throated Bunting.
- XXX. *Melospiza melodia*.—Song Sparrow.

Plates Published in 1882.

- XXXI. *Harporhynchus rufus*.—Brown Thrasher.
- XXXII. *Helminthophaga pinus*.—Blue-winged Yellow Warbler.
- XXXIII. *Pyrranga rubra*.—Scarlet Tanager.

- XXXIV. *Pyrranga aestiva*.—Summer Redbird.
- XXXV. *Empidonax pusillus trailii*.—Trail's Flycatcher.
- XXXVI. *Cyanocitta cristata*.—Blue Jay.
- XXXVII. *Pipilo erythrophthalmus*.—Chewink; Towhee.
- XXXVIII. *Sturnella magna*.—Meadow Lark.
- XXXIX. Fig. 1. *Pandion haliaetus carolinensis*.—Fish Hawk; American Osprey.
- “ “ 2. *Meleagris gallopavo americana*.—Wild Turkey.
- “ “ 3. *Cathartes aura*.—Turkey Buzzard.
- XL. *Icterus spurius*.—Orchard Oriole.
- XLI. *Petrochelidon lunifrons*.—Cliff Swallow.
- XLII. *Thryothorus bewicki*.—Bewick's Wren.

Plates Published in 1883.

- XLIII. *Astragalinus tristis*.—American Goldfinch.
- XLIV. *Melanerpes erythrocephalus*.—Red-headed Woodpecker.
- XLV. Fig. 1. *Tringoides macularius*.—Spotted Sandpiper.
- “ “ 2. *Oxyechus vociferus*.—Killdeer.
- “ “ 3. *Asio accipitrinus*.—Short-eared Owl.
- “ “ 4. *Corvus frugivorus*.—Common Crow.
- XLVI. *Telmatodytes palustris*.—Long-billed Marsh Wren.
- XLVII. Fig. 1. *Hydrochelidon lariformis surinamensis*.—Black Tern.
- “ “ 2. *Ceryle alcyon*.—Belted Kingfisher.
- “ “ 3. *Gallinula galeata*.—Florida Gallinule.
- “ “ 4. *Fulica americana*.—American Coot.
- XLVIII. Fig. 1. *Vireo noveboracensis*.—White-eyed Vireo.
- “ “ 2. *Poocetes gramineus*.—Grass Finch.
- XLIX. Fig. 1. *Tinnunculus sparverius*.—Sparrow Hawk.
- “ “ 2. *Accipiter cooperi*.—Cooper's Hawk.
- “ “ 3. *Buteo lineatus*.—Red-shouldered Hawk.
- “ “ 4. *Buteo borealis*.—Red-tailed Hawk.
- L. *Troglodytes aedon*.—House Wren.
- LI. *Setophaga ruticilla*.—American Redstart.
- LII. *Ampelis cedrorum*.—Cedar Wax-wing.
- LIII. Fig. 1. *Melospiza palustris*.—Swamp Sparrow.
- “ “ 2. *Chaturus pelagica*.—Chimney Swift.
- LIV. Fig. 1. *Myiarchus crinitus*.—Great Crested Flycatcher.
- “ “ 2. *Passer domesticus*.—English Sparrow.
- “ “ 3. *Molothrus ater*.—Cowbird.
- “ “ 4. *Chordeiles popetue*.—Nighthawk.
- “ “ 5. *Colaptes auratus*.—Yellow-shafted Flicker.
- “ “ 6. *Caprimulgus vociferus*.—Whip-poor-will.
- “ “ 7. *Ardea herodias*.—Great Blue Heron.

Plates Published in 1884.

- LV. *Chondestes grammica*.—Lark Finch.
 LVI. *Picus pubescens*.—Downy Woodpecker.
 LVII. *Dendroica pennsylvanica*.—Chestnut-sided Warbler.

Plates Published in 1885.

- LVIII. *Hylocichla fuscescens*.—Wilson's Thrush.
 LIX. Fig. 1. *Circus hudsonius*.—Marsh Hawk.
 " " 2. *Buteo pennsylvanicus*.—Broad-winged Hawk.
 " " 3. *Strix nebulosa*.—Barred Owl.
 " " 4. *Bubo virginianus*.—Great Horned Owl.
 LX. Fig. 1. *Cotile riparia*.—Bank Swallow.
 " " 2. *Stelgidopteryx serripennis*.—Roughed-winged Swallow.
 " " 3. *Protonotaria citrea*.—Prothonotary Warbler.
 " " 4. *Coturniculus passerinus*.—Yellow-winged Sparrow.
 " " 5. *Parus carolinensis*.—Carolina Chickadee.
 " " 6. *Bonasa umbellus*.—Ruffed Grouse.
 " " 7. *Ardetta exilis*.—Least Bittern.
 " " 8. *Asio americanus*.—American Long-eared Owl.
 " " 9. *Philohela minor*.—American Woodcock.

Plates Published in 1886.

- LXI. Fig. 1. *Lanius flavifrons*.—Yellow-throated Vireo.
 " " 2. *Helminthophaga chrysoptera*.—Golden-winged Warbler.
 LXII. Fig. 1. *Querquedula discors*.—Blue-winged Teal.
 " " 2. *Botaurus lentiginosus*.—American Bittern.
 " " 3. *Aix sponsa*.—Wood Duck.
 " " 4. *Anas boschas*.—Mallard.
 LXIII. Fig. 1. *Accipiter fuscus*.—Sharp-shinned Hawk.
 " " 2. *Podilymbus podiceps*.—Thick-billed Grebe.

- LXIII. Fig. 3. *Cupidonia cupido*.—Prairie Hen.
 " " 4. *Dytes auritus*.—Horned Grebe.
 " " 5. *Bartramia longicauda*.—Bartram's Sandpiper.
 LXIV. Fig. 1. *Picus villosus*.—Hairy Woodpecker.
 " " 2. *Centurus carolinus*.—Red-bellied Woodpecker.
 " " 3. *Porzana carolina*.—Sora Rail.
 " " 4. *Mimus polyglottus*.—Mockingbird.
 " " 5. *Ectopistes migratoria*.—Passenger Pigeon.
 " " 6. *Rallus virginianus*.—Virginia Rail.
 " " 7. *Rallus elegans*.—Red breasted Rail.
 " " 8. *Scops asio*.—Little Screech Owl.
 " " 9. *Phalacrocorax dilophus floridanus*.—Florida Cormorant.

- LXV. *Siurus auricapillus*.—Golden-crowned Thrush.
 LXVI. *Parus atricapillus*.—Black-capped Chickadee.
 LXVII. *Oporornis formosa*.—Kentucky Warbler.
 LXVIII. Fig. 1. *Tachycineta bicolor*.—White-bellied Swallow.
 " " 2. *Dendroica maculosa*.—Black and Yellow Warbler.
 " " 3. *Parula americana*.—Blue Yellow-backed Warbler.
 " " 4. *Siurus motacilla*.—Large-billed Water Thrush.
 " " 5. *Lophophanes bicolor*.—Tufted Titmouse.
 " " 6. *Sitta carolinensis*.—White-bellied Nuthatch.
 " " 7. *Passerculus sandwichensis savanna*.—Savannah Sparrow.
 " " 8. *Carpodacus purpureus*.—Purple Finch.
 " " 9. *Mniotilta varia*.—Black and White Creeper.
 " " 10. *Hylocichla ustulata pallasi*.—Hermit Thrush.
 " " 11. *Zonotrichia leucophrys*.—Rose-breasted Grosbeak.
 " " 12. *Dolichonyx oryzivorus*.—Bobolink.
 " " 13. *Rhyacophilus solitarius*.—Solitary Sandpiper.

GENERAL INDEX.

	Plate.	Fig.	Page.		Plate.	Fig.	Page.
Acadian Flycatcher.....	XIX	1	83	Blue-winged Teal.....	LXII	1	245
Accipiter Cooperi.....	XLIX	2	173	Blue-winged Yellow Warbler.....	XXXII		115
Accipiter fuscus.....	LXIII	1	255	Blue Yellow-backed Warbler.....	LXVIII	3	293
Agelaius phoeniceus.....	V		49	Bobolink.....	LXVIII	12	311
Aix sponsa.....	LXII	3	249	Bobwhite.....	XVIII		77
American Bittern.....	LXII	2	247	Bonasa umbellus.....	LX	6	229
American Coot.....	XLVII	4	165	Botaurus lentiginosus.....	LXII	2	247
American Goldfinch.....	XLIII		145	Broad-winged Hawk.....	LIX	2	213
American Long-eared Owl.....	LX	8	237	Bronzed Grackle.....	VII		53
American Osprey.....	XXXIX	1	129	Brown Thrush.....	XXXI		113
American Redstart.....	LI		181	Bubo virginianus.....	LIX	4	217
American Robin.....	VIII		55	Bunting, Black-throated.....	XXIX		109
American Woodcock.....	LX	9	239	Bunting, Bay-winged.....	XLVIII	2	169
Ampelis cedrorum.....	LII		183	Buteo lineatus.....	XLIX	3	175
Anas boscas.....	LXII	4	253	Buteo borealis.....	XLIX	4	177
Ardetta exilis.....	LX	7	235	Buteo pennsylvanicus.....	LIX	2	213
Ardea virescens.....	XXVII		105	Cardinal Redbird.....	XXII		91
Ardea herodias.....	LIV	7	201	Cardinalis virginianus.....	XXII		91
Asio americanus.....	LX	8	237	Caprimulgus vociferus.....	LIV	6	199
Asio accipitrinus.....	XLV	3	153	Carpodacus purpureus.....	LXIII	8	303
Astragalinus tristis.....	XLIII		145	Carolina Chickadee.....	LX	5	227
Baltimore Oriole.....	I		41	Carolina Dove.....	XXIV		97
Bank Swallow.....	LX	1	219	Carolina Rail.....	LXIV	3	269
Barn Swallow.....	XIII		67	Carolina Wren.....	XI		61
Bartramia longicauda.....	LXIII	5	263	Catbird.....	XVII		75
Bartram's Sandpiper.....	LXIII	5	263	Cathartes aura.....	XXXIX	3	137
Barred Owl.....	LIX	3	215	Cedar Waxwing.....	LII		183
Bay-winged Bunting.....	XLVIII	2	169	Centurus carolinus.....	LXIV	2	267
Belted Kingfisher.....	XLVII	2	161	Cerulean Warbler.....			11
Bewick's Wren.....	XLII		143	Ceryle alcyon.....	XLVII	2	161
Bittern, Least.....	LX	7	235	Chaetura pelagica.....	LIII	2	187
Black-billed Cuckoo.....	III		45	Chat, Yellow-breasted.....	XX		87
Blackbird, Red-winged.....	V		49	Chewink.....	XXXVII		125
Blackbird Crow.....	VII		53	Chestnut-sided Warbler.....	LVII		207
Black-throated Bunting.....	XXIX		109	Chickadee, Black-capped.....	LXVI		285
Black Tern.....	XLVII	1	159	Chickadee, Carolina.....	LX	5	227
Black-capped Chickadee.....	LXVI		285	Chipping Sparrow.....	XXVI		103
Black and White Creeper.....	LXVIII	9	305	Chimney Swift.....	LIII	2	187
Black and Yellow Warbler.....	LXVIII	2	291	Chondestes grammica.....	LV		203
Bluebird, Eastern.....	XII		65	Chordeiles popetue.....	LIV	4	195
Blue Jay.....	XXXVI		123	Circus hudsonius.....	LIX	1	211
Blue-Gray Gnatcatcher.....	XXV	2	101	Cliff Swallow.....	XLI		141

	Plate.	Fig.	Page.		Plate.	Fig.	Page.
Colaptes auratus.....	LIV	5	197	Flycatcher, Great Crested.....	LIV	1	189
Coccyzus americanus.....	XIV		69	Fulica americana.....	XLVII	4	165
Coccyzus erythrophthalmus.....	III		45	Gallinule, Florida.....	XLVII	3	163
Collurio ludovicianus.....	LX		57	Gallinula galeata.....	XLVII	3	163
Common Crow.....	XLV	4	155	Geothlypis trichas.....	XXI		89
Contopus virens.....	XIX	2	85	Goldfinch, American.....	XLIII		145
Corvus frugivorus.....	XLV	4	155	Golden-crowned Thrush.....	LXV		283
Cormorant, Florida.....	LXIV	9	281	Golden-winged Warbler.....	LXI	2	243
Cotile riparia.....	LX	1	219	Grackle, Bronzed.....	VII		53
Coturuielus passerinus.....	LX	4	225	Gnatcatcher, Blue-gray.....	XXV	2	101
Cowbird.....	LIV	3	193	Grass Finch.....	XLVIII	2	169
Coot, American.....	XLVII	4	165	Great Blue Heron.....	LIV	7	201
Cooper's Hawk.....	XLIX	2	173	Grebe, Horned.....	LXIII	4	261
Creepers, Black and White.....	LXVIII	9	305	Grebe, Thick-billed.....	LXIII	2	257
Crow Blackbird.....	VII		53	Greenhead.....	LXII	4	253
Crow, Common.....	XLV	4	155	Great Carolina Wren.....	XI		61
Cuckoo, Black-billed.....	III		45	Great Crested Flycatcher.....	LIV	1	189
Cuckoo, Yellow-billed.....	XIV		69	Great Horned Owl.....	LIX	4	217
Cupidonia eupido.....	LXIII	3	259	Green Heron.....	XXVII		105
Cyanospiza cyanea.....	IV		47	Grassbeak, Rose-breasted.....	LXVIII	11	309
Cyanurus cristatus.....	XXXVI		123	Ground Robin.....	XXXVII		125
				Grouse, Ruffed.....	LX	6	229
Dendroica maculosa.....	LXVIII	2	291	Grouse, Pinnated.....	LXIII	3	259
Dendroica aestiva.....	XV		71	Hairy Woodpecker.....	LXIV	1	265
Dendroica pennsylvanica.....	LVII		207	Harporhynchus rufus.....	XXXI		113
Dolichonyx oryzivorus.....	LXVIII	12	311	Hawk, Broad-winged.....	LIX	2	213
Dove, Carolina.....	XXIV		97	Hawk, Cooper's.....	XLIX	2	173
Dowry Woodpecker.....	LVI		205	Hawk, Marsh.....	LIX	1	211
Duck, Summer.....	LXII	3	249	Hawk, Sparrow.....	XLIX	1	171
Duck, Wood.....	LXII	3	249	Hawk, Sharp-shinned.....	LXIII	1	255
Duck, Mallard; Greenhead.....	LXII	4	253	Hawk, Fish.....	XXXIX	1	129
Dytes auritus.....	LXIII	4	261	Hawk, Red-shouldered.....	XLIX	3	175
				Hawk, Red-tailed.....	XLIX	4	177
Eastern Bluebird.....	XII		65	Helminthophaga pinus.....	XXXII		115
Ectopistes migratoria.....	LXIV	5	273	Helminthophaga chrysoptera.....	LXI	2	243
Eggs, key to.....			34	Heron, Green.....	XXVII		105
Empidonax acadicus.....	XIX	1	83	Heron, Great Blue.....	LIV	7	201
Empidonax traillii.....	XXXV		121	Hermit Thrush.....	LXVIII	10	307
English Sparrow.....	LIV	2	191	Hirundo erythrogastrus.....	XIII		67
Euspiza americana.....	XXIX		109	Horned Grebe.....	LXIII	4	261
				House Wren.....	L		179
Finch, Purple.....	LXVIII	8	303	Hummingbird.....	XXV	1	99
Field Sparrow.....	XVI		73	Hydrochelidon lariformis surinamensis.....	XLVII	1	159
Finch, Lark.....	LV		203	Hylocichla fuscescens.....	LVIII		209
Finch, Grass.....	XLVIII	2	169	Hylocichla ualascæ pallasi.....	LXVIII	10	307
Fish Hawk.....	XXXIX	1	129				
Flicker, Yellow-shafted.....	LIV	5	197	Icterus baltimore.....	I		41
Florida Gallinule.....	XLVII	3	163	Icterus spurius.....	XL		139
Florida Cormorant.....	LXIV	9	281	Icteria virens.....	XX		87
Flycatcher, Aadian.....	XIX	1	83	Indigobird.....	IV		47
Flycatcher, Pewee.....	X		59	Introductory.....			9
Flycatcher, Traill's.....	XXXV		121				

	Plate.	Fig.	Page.
Jaybird.....	XXXVI		123
Jay, Blue.....	XXXVI		123
Key, Etymological.....			315
Key to Eggs.....			34
Killdeer.....	XLV	2	151
Kingbird.....	VI		51
Kingfisher, Belted.....	XLVII	2	161
Kentucky Warbler.....	LXVII		287
Lanius flavifrons.....	LXI	1	241
Lark Finch.....	LV		203
Least Bittern.....	LX	7	235
Lark Meadow.....	XXXVIII		127
Large-billed Water Thrush.....	LXVIII	4	295
List of permanent residents.....			12
List of summer residents.....			11
List of probable residents.....			12
List of every species found in Ohio.....			13-26
List of subscribers.....			321
Long-billed Marsh Wren.....	XLVI		157
Long-eared Owl.....	LX	8	237
Loggerhead Shrike.....	IX		57
Lophophanes bicolor.....	LXVIII	5	297
Mallard Duck.....	LXII	4	253
Marsh Hawk.....	LIX	1	211
Maryland Yellow-throat.....	XXI		89
Martin, Purple.....	XXVIII		107
Meadow Lark.....	XXXVIII		127
Meleagris gallopavo americana.....	XXXIX	2	131
Melanerpes erythrocephalus.....	XLIV		147
Melospiza melodia.....	XXX		111
Melospiza palustris.....	LIII	1	185
Mimus carolinensis.....	XVII		75
Mimus polyglottus.....	LXIV	4	271
Mniotilta varia.....	LXVIII	9	305
Mockingbird.....	LXIV	4	271
Molothrus ater.....	LIV	3	193
Mottled Owl.....	LXIV	8	279
Myiarchus crinitus.....	LIV	1	189
Names of subscribers.....			321
Nighthawk.....	LIV	4	195
Nuthatch, White-bellied.....	LXVIII	6	299
Oporornis formosa.....	LXVII		287
Orchard Oriole.....	XL		139
Oriole, Baltimore.....	I		41
Oriole, Orchard.....	XL		139
Ortyx virginianus.....	XVIII		77
Owl, Barred.....	LIX	3	215
Owl, Short-eared.....	XLV	3	153

	Plate.	Fig.	Page.
Owl, Great Horned.....	LIX	4	217
Owl, Long-eared.....	LX	8	237
Owl, Little Screech.....	LXIV	8	279
Oxyechus vociferus.....	XLV	2	151
Pandion haliaetus carolinensis.....	XXXIX	1	129
Parula americana.....	LXVIII	3	293
Parus carolinensis.....	LX	5	227
Parus atricapillus.....	LXVI		285
Passer domesticus.....	LIV	2	191
Passenger Pigeon.....	LXIV	5	273
Passerculus sandwichensis savanna.....	LXVIII	7	301
Petrochelidon lunifrons.....	XLJ		141
Pewit Flycatcher.....	X		59
Phalacrocorax dilophus floridanus.....	LXIV	9	281
Philohela minor.....	LX	9	239
Picus pubescens.....	LVI		205
Picus villosus.....	LXIV	1	265
Pipilo erythrophthalmus.....	XXXVII		125
Pigeon, Passenger.....	LXIV	5	273
Poecetes gramineus.....	XLVIII	2	169
Polioptila caerulea.....	XXV	2	101
Podilymbus podiceps.....	LXIII	2	257
Porzana carolina.....	LXIV	3	269
Prairie Hen.....	LXIII	3	259
Progne purpurea.....	XXVIII		107
Protonotaria citrea.....	LX	3	223
Prothonotary Warbler.....	LX	3	223
Purple Martin.....	XXVIII		107
Purple Finch.....	LXVIII	8	303
Pyrranga rubra.....	XXXIII		117
Pyrranga aestiva.....	XXXIV		119
Quail.....	XVIII		77
Querquedula discors.....	LXII	1	245
Quiscalus purpureus.....	VII		53
Rail, Carolina.....	LXIV	3	269
Rail, Sora.....	LXIV	3	269
Rail, Virginia.....	LXIV	6	275
Rail, Red-breasted.....	LXIV	7	277
Rallus elegans.....	LXIV	7	277
Rallus virginianus.....	LXIV	6	275
Red-breasted Rail.....	LXIV	7	277
Red-bellied Woodpecker.....	LXIV	2	267
Redbird, Cardinal.....	XXII		91
Redbird, Summer.....	XXXIV		119
Red-headed Woodpecker.....	XLIV		147
Red-eyed Vireo.....	XXIII	2	95
Red Start, American.....	LI		181
Red-shouldered Hawk.....	XLIX	3	175
Red-tailed Hawk.....	XLIX	4	177
Red-winged Blackbird.....	V		49

	Plate.	Fig.	Page.		Plate.	Fig.	Page.
Rhyacophilus solitarius.....	LXVIII	13	313	Teal, Blue-winged.....	LXII	1	245
Robin.....	VIII		55	Telmatodytes palustris.....	XLVI		157
Rough-winged Swallow.....	LX	2	221	Tern, Black.....	XLVII	1	159
Rose-breasted Grosbeak.....	LXVIII	11	309	Thick-billed Grebe.....	LXIII	2	257
Ruby-throated Hummingbird.....	XXV	1	99	Titmouse, Tufted.....	LXVIII	5	297
Ruffed Grouse.....	LX	6	229	Thrush, Brown.....	XXXI		113
				Thrush, Wood.....	II		43
Sandpiper, Solitary.....	LXVIII	13	313	Thrush, Wilson's.....	LVIII		209
Sandpiper, Bartram's.....	LXIII	5	263	Thrush, Golden-crowned.....	LXV		283
Sandpiper, Spotted.....	XLV	1	149	Thrush, Large-billed, Water.....	LXVIII	4	295
Sayornis fuscus.....	X		59	Thrush, Hermit.....	LXVIII	10	307
Savannah Sparrow.....	LXVIII	7	301	Thryomanes bewicki.....	XLII		143
Screech Owl, Little.....	LXIV	8	279	Thryothorus ludovicianus.....	XI		61
Setophaga ruticilla.....	LI		181	Tinnunculus sparverius.....	XLIX	1	171
Scarlet Tanager.....	XXXIII		117	Towhee.....	XXXVII		125
Scops asio.....	LXIV	8	279	Traill's Flycatcher.....	XXXV		121
Sharp-shinned Hawk.....	LXIII	1	255	Tringoides macularius.....	XLV	1	149
Short-eared Owl.....	XLV	3	153	Trochilus colubris.....	XXV	1	99
Shrike, Loggerhead.....	IX		57	Troglodytes aedon.....	L		179
Sialia sialis.....	XII		65	Tufted Titmouse.....	LXVIII	5	297
Sitta carolinensis.....	LXVIII	6	299	Turdus mustelinus.....	II		43
Siurus auricapillus.....	LXV		283	Turdus migratorius.....	VIII		55
Siurus motacilla.....	LXVIII	4	295	Turkey Buzzard.....	XXXIX	3	137
Solitary Sandpiper.....	LXVIII	13	313	Tyrannus carolinensis.....	VI		51
Song Sparrow.....	XXX		111				
Sora Rail.....	LXIV	3	269	Vireo gilvus.....	XXIII	1	93
Sparrow, Savannah.....	LXVIII	7	301	Vireo olivaceus.....	XXIII	2	95
Sparrow, Field.....	XVI		73	Vireo, Red-eyed.....	XXIII	2	95
Sparrow, Chipping.....	XXVI		103	Vireo, noveboracensis.....	XLVIII	1	167
Sparrow Hawk.....	XLIX	1	171	Vireo, White-eyed.....	XLVIII	1	167
Sparrow, Song.....	XXX		111	Vireo, Yellow-throated.....	LXI	1	241
Sparrow, Swamp.....	LIII	1	185	Virginia Rail.....	LXIV	6	275
Sparrow, English.....	LIV	2	191				
Sparrow, Yellow-winged.....	LX	4	225	Warbling Vireo.....	XXIII	1	93
Spizella pusilla.....	XVI		73	Warbler, Summer.....	XV		71
Spizella socialis.....	XXVI		103	Warbler, Blue-Winged Yellow.....	XXXII		115
Spotted Sandpiper.....	XLV	1	149	Warbler, Chestnut-sided.....	LVII		207
Stelgidopteryx serripennis.....	LX	2	221	Warbler, Cerulean.....			11
Strix nebulosa.....	LIX	3	215	Waxwing, Cedar.....	LII		183
Sturnella magna.....	XXXVIII		127	Warbler, Prothonotary.....	LX	3	223
Summer Duck.....	LXII	3	249	Warbler, Golden-winged.....	LXI	2	243
Summer Redbird.....	XXXIV		119	Warbler, Black and Yellow.....	LXVIII	2	291
Summer Warbler.....	XV		71	Warbler, Blue Yellow-backed.....	LXVIII	3	293
Swallow, Bank.....	LX	1	219	White-bellied Swallow.....	LXVIII	1	289
Swallow, Barn.....	XIII		67	White-eyed Vireo.....	XLVIII	1	167
Swallow, Cliff.....	XL		141	Whip-poor-will.....	LIV	6	199
Swallow, Chimney.....	LIII	2	187	White-bellied Nuthatch.....	LXVIII	6	299
Swallow, Rough-winged.....	LX	2	221	Wild Turkey.....	XXXIX	2	131
Swallow, White-bellied.....	LXVIII	1	289	Wilson's Thrush.....	LVIII		209
Swamp Sparrow.....	LIII	1	185	Woodcock.....	LX	9	239
				Wood Duck.....	LXII	3	249
Tachycineta bicolor.....	LXVIII	1	289	Wood Pewee.....	XIX	2	85
Tanager, Scarlet.....	XXXIII		117				

	Plate.	Fig.	Page.		Plate.	Fig.	Page.
Woodpecker, Downy.....	LVI		205	Yellow-breasted Chat.....	XX		87
Woodpecker, Hairy.....	LXIV	1	265	Yellow-billed Cuckoo.....	XIV		69
Woodpecker, Red-bellied.....	LXIV	2	267	Yellow-throated Vireo.....	LXI	1	241
Woodpecker, Red-headed.....	XLIV		147	Yellow-shafted Flicker.....	LIV	5	197
Wood Thrush.....	II		43	Yellow-winged Sparrow.....	LX	4	225
Wren, Great Carolina.....	XI		61	Zamelodia ludoviciana.....	LXVIII	11	309
Wren, Bewick's.....	XLII		143	Zenædura Carolinensis.....	XXIV		97
Wren, Long-billed Marsh.....	XLVI		157				
Wren, House.....	L		179				

SMITHSONIAN INSTITUTION LIBRARIES



3 9088 00660 7816

