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

ILLUSTRATIONS BY
MARY H. JONES.

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

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

vii
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.

CIRCEVILLE, 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° 25', and its northern limit 42° north latitude. Its eastern border is 3° 30' west from Washington, and its western extension is 7° 30'. 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 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 farther 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 1886, 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 28th 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 95° Fahrenheit. The hottest and dryest 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, as 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 —25°, 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.

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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 recorded 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:

| 10. Tufted Titmouse. | 45. Scarlet Tanager. |
| 17. Long-billed Marsh Wren. | 52. Lark Finch. |
| 25. Cercaline Warbler. | 60. Indigo Bunting. |
| 29. Kentucky Warbler. | 64. Rosy-winged Blackbird. |
| 30. Maryland Yellow-throat. | 65. Meadow Lark. |
| 34. Warbling Vireo. | 69. Common Crow. |
| 35. Yellow-throated Vireo. | 70. Blue Jay. |
| 73. Choche Bird. | 74. Wood Pewee. |
| 75. Acadian Flycatcher. | 76. Trail Flycatcher. |
| 77. Ruby-throated Hummingbird. | 78. Chimney Swift. |
| 81. Hairy Woodpecker. | 82. Downy Woodpecker. |
| 83. Red-bellied Woodpecker. | 84. Red-headed Woodpecker. |
| 85. Yellow-shafted Flicker. | 86. Belted Kingfisher. |
| 89. American Long-eared Owl. | 90. Short-eared Owl. |
| 91. Barred Owl. | 92. Little Screech Owl. |
| 93. Great Horned Owl. | 94. Sparrow Hawk. |
| 95. American Osprey. | 96. Marsh Hawk. |
| 97. Cooper's Hawk. | 98. Sharp-shinned Hawk. |
| 101. Broad-winged Hawk. | 102. Turkey Buzzard. |
| 105. Wild Turkey. |
106. Ruffed Grouse.
107. Prairie Hen.*
109. Great Blue Heron.
110. Green Heron.
111. American Bittern.*
112. Least Bittern.
113. Killdeer.
114. American Woodcock.
115. Solitary Sandpiper.
116. Bartram's Sandpiper.
117. Spotted Sandpiper.
118. Red-breasted Rail.
119. Virginia Rail.
120. Soras Rail.
121. Florida Gallinule.

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

### II.

List of permanent residents:

| 13. Meadow Lark. | 27. Great Horned Owl. |

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:


29. Marsh Hawk.*
30. Cooper's Hawk.
31. Sharp-shinned Hawk.
32. Red-tailed Hawk.
33. Red-shouldered Hawk.
34. Broad-winged Hawk.
35. Turkey Buzzard.*
36. Mourning Dove.
37. Wild Turkey.
38. Ruffed Grouse.
39. American Coot.
40. Bob-White.
41. Mallard.*
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.  
   Wood Thrush. 1.

2. **Hylocichla fuscescens** (Steph.) Baird.  
   Wilson's Thrush. 2.

3. **Hylocichla alpestris** Baird.  
   Gray-cheeked Thrush. 3.

4. **Hylocichla semicollata semicollata** (Caban.) Ridg.  
   Olive-backed Thrush. 4a.

5. **Hylocichla semicollata palliata** (Caban.) Ridg.  
   Hermit Thrush. 5b.

6. **Mimus polyglottos** (Linn.) Sw. and Rich.  
   Robin. 7.

7. **Mimus pollyglottos** (Linn.) Boie.  
   Mockingbird. 11.

8. **Gulicopsis carolinensis** (Linn.) Caban.  
   Catbird. 12.

9. **Harpactes rufus** (Linn.) Caban.  
   Brown Thrasher. 13.

10. **Sitta siatica** (Linn.) Haldem.  
    Bluebird. 22.

11. **Polioptila caerulea** (Linn.) Sel.  
    Blue-gray Gnatcatcher. 27.

12. **Regulus calendula** (Linn.) Licht.  
    Ruby-crowned Kinglet. 30.

    Gold-crowned Kinglet. 33.

14. **Loquedula bicolor** (Linn.) Bp.  
    Tufted Titmouse. 36.

15. **Parus atricapillus** Linn.  
    Black-capped Chickadee. 41.

16. **Parus carolinensis** Aud.  
    Carolina Chickadee. 42.

17. **Sitta carolinensis** Gm.  
    White-bellied Nuthatch. 51.

18. **Sitta canadensis** Linn.  
    Red-bellied Nuthatch. 52.

19. **Sitta pusilla** Lath.  
    Brown-headed Nuthatch. 53.

Resident.

See Appendix.

April 27—, 73; May 1—, 74; 4—, 75; April 22—, 76; May 4—, 77
April 19—, 78; 23—, 79; 29—, 80.

Oct. 15, 73; May 9, Sept. 30–Oct. 13, 74; April 1–May 1, 75; April 5–19, 77; 2, Nov. 2, 78.

April 28, 75; Oct. 13, 74; May 11, Oct. 18, 76.

Oct. 7, 73; May 4–6, Oct. 8–23, 74; April 12–28, Sept. 26, 75; May 2–8, Oct. 9, 76; April 8–May 10, Oct. 1, 77; April 16, 78.

June 27, 73; April 27–Sept. 17, 74; April 29—, 75; 26—, 76.

April 23—, 74; 23—, 75.

See appendix—Additions.

June 27, 73; May 8—, 74; July 18, 77.

May 17, 75.

Sept. 10, 73; May 9, Sept. 15–Oct. 1, 74; May 12–10, 75.

May 15–17, 75.

Sept. 15–26, 73; May 14–18, Sept. 2–Oct. 7, 74; Sept. 5–25, 75.

May 15, Sept. 15, 74; May 14, 77; June 30, 79.

May 8–17, 75; Sept. 25, 76.

April 30—, 75; May 1–Aug. 74; May 2—, 75; April 28—, 76; 15—
75; 20—, 76; 19—, 80.

May 19, 73; 9, Sept. 4, 74; May 10–19, 75; 17, 76; 14–21, 77.

Oct. 13, 72; May 2, Sept. 2–Oct. 23, 74; May 8–18, 75; April 21,
Oct. 18–Nov. 5, 76; April 20, 77; 19, 78.
<table>
<thead>
<tr>
<th>Order</th>
<th>Species</th>
<th>Common Name</th>
<th>Date Range</th>
</tr>
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<tr>
<td>Order</td>
<td>Dendroica monacha (Gm.) Baird.</td>
<td>Black-and-yellow Warbler</td>
<td>May 20, Sept. 15, 73; May 8, Sept. 2-28, 74; May 11-22, 75; 7, Sept. 16-25, 76; May 14, 77.</td>
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<td></td>
<td>Dendroica occulus (Wils.) Baird.</td>
<td>Cerulean Warbler</td>
<td>May 21-June 27, 73; May 8—, 74; 0—, 75; 14—, 76; 14—, 77; April 19—, 78.</td>
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<td>Dendroica pennegetis (Linn.) Baird.</td>
<td>Chestnut-sided Warbler</td>
<td>May 10, 73; 8, Sept. 2-20, 74; May 12-21, 75; 18, 76.</td>
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<td>Dendroica casandra (Wils.) Baird.</td>
<td>Bay-breasted Warbler</td>
<td>Sept. 15, 73; May 17, Sept. 7-Oct. 16, 74.</td>
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<td>Dendroica stricta (Forr.) Baird.</td>
<td>Black-throated Warbler</td>
<td>May 20, Sept. 23, 73; May 17, Sept. 14-Oct. 17, 74; May 17, 75; 18-26, Oct. 16, 76.</td>
</tr>
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<td>Dendroica blackburnia (Gm.) Baird.</td>
<td>Blackburnian Warbler</td>
<td>May 13, Sept. 25, 73; May 8, Sept. 5-26, 74; May 12-19, 75; 14, 77.</td>
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<td>Dendroica dominica albicoda Baird.</td>
<td>White-breasted, Yellow-throated Warbler</td>
<td>April 19, Sept. 23, 73; Sept. 7, 74; May 8-Aug. 22, 75; April 19—Aug. 16, 76; April 7—, 77; 14—, 78; 13—, 70.</td>
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<td>Dendroica virens (Gm.) Baird.</td>
<td>Black-throated Green Warbler</td>
<td>May 9-20, 73; 5, Sept. 7-30, 74; May 17, 76; April 18, 80.</td>
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<td>Dendroica pinus (Wils.) Baird.</td>
<td>Pine-breeding Warbler</td>
<td>Nov. 7, 74; May 6-15, 75; April 26, Oct. 27, 76.</td>
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<td>Dendroica palmarum (Gmel.) Baird.</td>
<td>Red-poll Warbler</td>
<td>May 15, 75.</td>
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<td>Dendroica discolor (Vieill.) Baird.</td>
<td>Prairie Warbler</td>
<td>May 18—Sept. 18, 73; April 29-Oct. 1, 74; April 29—, 75; May 4—, 76; Aug. 20, 78; April 24—, 80.</td>
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<td>Siscia norvegica (Linn.) Swains.</td>
<td>Golden-crowned Thrush</td>
<td>Oct. 17, 74; April 26-May 13, 75; 4, Sept. 25, 76; April 15-30, 77; 19, 78.</td>
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<td>Siscia nemoralis (Bodd.) Coves.</td>
<td>Small-billed Thrush</td>
<td>July 25, 74; June 19, 75; April 15—, 77; 21—, 78.</td>
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<td>Siscia motacilla (Vieill.) Coves.</td>
<td>Large-billed Thrush</td>
<td>Sept. 16, 74; May 22, 75.</td>
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<td>Opacornis agilis (Wils.) Baird.</td>
<td>Connecticut Warbler</td>
<td>Sept. 2-30, 74; May 21-26, 75; 15, 76.</td>
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<td>Opacornis formosa (Wils.) Baird.</td>
<td>Kentucky Warbler</td>
<td>May 5—, 73; 11—, 74; 7—, 75; 1—, 76; April 28—, 78.</td>
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<td>Geothlypis philadelphia (Wils.) Baird.</td>
<td>Mourning Warbler</td>
<td>June 6—, 73; May 6—, 74; 7—, 76; 14—, 77; 7—, 78.</td>
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<td>Geothlypis trichas (Linn.) Caban.</td>
<td>Maryland Yellow-throat</td>
<td>Aug. 25, 74; May 21, 75.</td>
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<td>Xenocichla virgina (Linn.) Baird.</td>
<td>Yellow-breasted Chat</td>
<td>May 22, Sept. 18, 73; Sept. 2-28, 74; 8-22, 75; 10, 76; 18, 77.</td>
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xv
64. Myiobius canadensis (Linn.) Aud.
Canadian Flycatching Warbler. 127.
65. Setophaga ruticilla (Linn.) Swains.
American Redstart. 128.
66. Vireo olivaceus (Linn.) Bp.
Red-eyed Vireo. 126.
Philadelphia Vireo. 128.
68. Vireo gilvus (Vieill.) Cass.
Warbling Vireo. 127.
69. Lanivirca flavifrons (Vieill.) Baird.
Yellow-throated Vireo. 125.
70. Lanivirca soUarius (Vieill.) Baird.
Blue-headed Vireo. 121.
71. Vireo norcrossensis (Gmel.) Bp.
White-eyed Vireo. 129.
72. Lanivirca borealis Vieill.
Great Northern Shrike. 148.
73. Lanivirca borealis Vieill.
Loggerhead Shrike. 140.
74. Ampelis garrulus Linn.
Northern Wax-wing. 150.
75. Ampelis cedarum (Vieill.) Baird.
Cedar Wax-wing. 151.
76. Progne subis (Linn.) Baird.
Purple Martin. 152.
77. Petrochelidon fluvialis (Say) Lawr.
Clim Swallow. 153.
78. Hirundo erithroura (Hodg.)
Barn Swallow. 154.
79. Tachycineta bicolor (Vieill.) Caban.
White-bellied Swallow. 155.
80. Cattle riparia (Linn.) Bae.
Bank Swallow. 157.
81. Stelgidopteryx ruficlim (Aud.) Baird.
Rough-winged Swallow. 158.
82. Pyrranga rubra (Linn.) Vieill.
Scarlet Tanager. 161.
83. Pyrranga noveboracensis (Linn.) Vieill.
Summer Redbird. 164.
84. Hesperiphona vomerina (Cooper) Bp.
Evening Grosbeak. 165.

May 13, 73; 11, 74; 8-22, 75; 23, 76; 5, 78.
May 5—, 73; 11—, 74; 9—, 75; 5—, 78; April 23—, 77.
April 30—, 73; May 7—Sept. 28, 74; May 8—, 75; 1—, 76; 16—,
17; April 25—, 78.
Sept. 16—, 75; May 8, Sept. 20, 74; May 18, 19, 76.
May 2—Sept. 14, 74; May 8—, 75; 1—, 76; April 23—, 77; 19—,
78; 25—, 79; 22—, 80.
May 5—Sept. 15, 74; May 8—, 75.
May 1, Sept. 20, 73; Sept. 23—30, 74; May 13, 14, 75.

April 14—27, 73; March 30, 74; Feb. 27, 75; Nov. 7, 76.
May 16—, 73; April 7—Aug. 31, 74; Mar. 23—, 75; Mar. 4—, 76;
4—, 77.
May 16, 73.

April 4—, 73; May 25—, 74; 14—, 76; Nov. 2, 78; wintered,
80, 81.
March 30—, 73; April 13—Aug., 74; April 7—, 75; 7—, 76; 1—,
77; 2—, 78; March 28—, 79.
May 10—, 75; 2—, 76; April 21—, 77; April 21, 78.
April 12—, 75; 22—, 76; 15—, 77; 9—, 78.
April 8—Aug., 74; April 12—, 76; March 28—, 77; April 9—, 78;
14—, 79.
May 6—, 75; April 23—, 76; 23—, 77.
April 18—Aug., 74; May 6—, 75; April 22—, 76; 21—, 77; 16—,
78; 20—, 79.
May 2—, 78; 7—, 74; 16—, 75; 12—, 76; April 20—, 77; May
5—, 78.

xvi
Pinicola enucleator (Linn.) Vieill.
Pine Grosbeak. 166.

Carpodacus pyrrhus (Gm.) Baird.
Purple Finch. 168.

Loxia curvirostra americana (Wils.) Coues.
American Crossbill. 172.

Loxia leucoptera Gm.
White-winged Cross-bill. 173.

Carduelis linaria (Linn.) Caban.
Common Redpoll. 179.

Astragalus tristis (Linn.) Caban.
American Goldfinch. 181.

Chrysomela pumilio (Wils.) Baird.
Pine Goldfinch. 187.

Cenirophanes japonicus (Linn.) Caban.
Lapland Longspur. 187.

Passer domesticus Linn.
English Sparrow. 193.

Passerculus sandivicensis savanna (Wils.) Ridg.
Savannah Sparrow. 193.

Poecile gramineus (Gm.) Baird.
Grass Finch. 197.

Coturniculus passerinus (Wils.) Baird.
Yellow-winged Sparrow. 197.

Clupea melanops (Say) Baird.
Lark Finch. 199.

Zonotrichia leucophrys (Forst.) Swains.
White-crowned Sparrow. 199.

Zonotrichia montana (Forst.) Swains.

Spizella pusilla (Wils.) Ridg.
Field Sparrow. 214.

Junco hudsonius (Linn.) Sol.
Black Snowbird. 217.

Melospiza fusca (Gmel.) Scott.
Song Sparrow. 221.

Feb. 12-April 18, Oct. 13-Nov. 7, 74; April 7, 75; Jan. 19, 77; Nov. 2-78.

June 18, 78.

N. 29, 73; Dec. 19, 76; Nov. 2, 78.

Feb. 19, 75; Jan. 27, 77.

Feb. 8, 74; 19-27, Nov. 28—75; Nov. 7, 76; Jan. 6-13, 77.

Imported. Resident.

Sept. 27, 75; April 6-May 6, Sept. 11, 74; April 8-May 24, 75; April 20-May 3, 76.

March 28—75; 22—75; April 6—75, 76; 2—77; March 22—78.

May 6-Sept. 74; April 30—75; May 3, 76; April 26—, 77.

April 30—73; May 7—Sept. 28, 74; April 30—73, 75; 19—, 76; 22—, 77; 21—, 78.

May 1, Nov. 1, 73; May 2, Oct. 13-17, 74; May 8-11, 75; 4—7, Oct. 18-21, 76; April 29, 77; 28-78.

April 15, Sept. 16, 73; April 23, Sept. 29, 74; April 20, 75; 20, Oct. 18-23, 77; 19, 78; 20, 79.

Nov. 2, 78-Jan. 31, Nov. 7—, 74; 9, 77.

April 8—73; 1—, Nov. 4, 74; Mar. 30—75; April 16—, 76; April 2—77; Mar. 27—, 78; 24—, 79.

April 16—73; Mar. 30—74; 25—, 75; April 15—, 76; 8—, 77; Mar. 28—, 78.

Oct. 12, 78-May 9, Sept. 28, 74-May 8, 75; Oct. 1, 76.

Resident.

xvii
106. Melospiza palustris (Wils.) Baird. 
Swamp Sparrow. 243.
Lincoln's Finch. 244.
108. Passerella iliaca (Merrem.) Sw. 
Fox-colored Sparrow. 245.
109. Pipilo erythrophthalmus (Linn.) Vieill. 
Cheewink; Towhee. 257.
110. Cardinalis virginianus (Bris.) Bp. 
Cardinal Grosbeak. 242.
111. Zonotrichia ulocau (Linn.) Coues. 
Rose-breasted Grosbeak. 244.
112. Passerina cayraka (Linn.) Swains. 
Indigo Bunting. 248.
113. Spiza americana (Gm.) Bp. 
Black-throated Bunting. 254.
114. Dolichonyx oryzivorus (Linn.) Swains. 
Bobolink. 257.
115. Molothrus albb (Bodd.) Gray. 
Cowbird. 258.
116. Xanthocephalus interosus (Bp.) Baird. 
Yellow-headed Blackbird. 260.
117. Agelius phoeniceus (Linn.) Vieill. 
118. Sturnella magna (Linn.) Swains. 
Meadow Lark. 263.
119. Icterus quercus (Linn.) Bp. 
Orchard Oriole. 270.
120. Icterus galbula (Linn.) Coues. 
Baltimore Oriole. 271.
121. Scolothraupis ferminicola (Gm.) Swains. 
Rusty Blackbird. 273.
122. Quiscalus pauperus excis Ridg. 
Brazed Grackle. 2789.
123. Corvus corax carolinus (Bartr.) Ridg. 
American Raven. 280.
124. Corvus frugilegus Bartr. 
Common Crow. 282.
125. Cynocitta cristata (Linn.) Strickl. 
Blue Jay. 289.
— Ama berynas Linn. 
Sky Lark. 290.
126. Recountry alpesinis (Forst.) Boie. 
Shore Lark. 300.

May 1, Sept. 29–Oct. 17, 74; April 21, 76; 13, 79.

May 15, 73; Oct. 17, 18, 74; May 10–24, 75; 17, 77.

Oct. 20, 73; Mar. 7–24, Oct. 13–Nov. 7, 74; Mar. 18, 75, 76; Feb. 27, 77; Mar. 9, 79.

May 10–24, Dec. 10, 73; Mar. 24–, 74; 18–, 75; April 11–, 77; Mar. 15–, 78.

Residents.

May 4, 73; 3–June 3, Sept. 12–23, 74; May 11–19, 75; 14–, 76; 9–, 78.

May 11–, 73; 10–, 74; 10–, 75; 7–, 76; April 30–, 77; May 5–, 78.

May 11–, 73; 4, 74; 6–, 75; 4–, 76; 7–, 77; April 28–, 78.

May 4–, 73; 2–Aug. 13, 74; 7–, 76; April 30–, 77; May 5–, 78.

April 14–Oct. 13, 73; Mar. 30–, 74; Oct. 15, 76.

Mar. 8–Oct. 17, 74; Mar. 25–, 75; Feb. 25–Oct. 18, 76; Feb. 20–, 77; Mar. 10–, 79.

Mar. 16–, 73; Feb. 12–Oct. 13, 74; Mar. 12–, 75; Feb. 20–, 76; wintered, 76, 77, 78; Feb. 24–, 80.

May 4–Aug., 74; May 8–, 75; 7–, 76; 4–, 77; 5–, 78.

April 30–, 73; May 1–, Sept. 24, 74; May 4–, 75; April 20–, 76; 28–, 77; 10–, 78; 22–, 80.

Sept. 9, 76; April 18, Oct. 17, 74; March 12–April 24, 75; April 30, 77.

Oct. 5, 75; Mar. 2–, 74; Mar. 12–, 75; Feb. 26–Nov. 7, 76; Feb. 20–, 77; Mar. 9–, 79.

Feb. 14–Oct. 17, 74; Jan. 28–, 77; Mar. 9–, 79.

Residents.

Nov. 9–, 74; Oct. 31–, 75; 18, 76–Mar. 28, 77; Nov. 1–, 77.

xviii


144. *Bythonomus ptilon* (Linn.) Baird. Pileated Woodpecker; Legcock. 371.


May 4—, 73; 1—, 74; 6—, 75; 1—, 76; April 21—, 78.

May 4—, 73; 3—, 74; 8—, 75; 1—, 76; 14—, 77; April 25—, 78.

Nov. 3, 74; Mar. 14—, 75; 13—, 76; 24—, 77; 27—, 78; 9—, 79.

May 12—, 73; 10—, 74; 3—, 75; 8—, 76; 14—, 77, 5—, 78.

May 8-22, 75; 10-20, 76; 18, 77.

May 21—, 73; Aug. 26, 74; May 14—, 76; 17—, 77; 5—, 78.

May 18-Aug., 74; May 15—, 75; 13—, 76; 21—, 77; 8—, 78.

May 12, 73; 6, 74; 7-24, Aug. 22, 75; Aug. 28, 76; May 7-9, 77.

May 6-Oct. 2, 73; May 5-Sept. 27, 74; May 10-Oct. 16, 75; May 15—, 76; 9—, 77; 5—, 78.

April 18-Oct. 13, 74; April 14—, 76; April 18—, 78.

May 5, 74; 2, 76; 25, 77.

May 29—, 74; 11, 74; 13—, 75; 7—, 76; 15, 77; Aug. 26, 78.

Resident.

Resident.

April 4, 73; 5, 75; 20, 76; 2-16, 77; 19, 78; 13, 79.

April —, 1881.

Resident.

April 12-Dec. 19, 73; Mar. 39—, 74; April 30—, 75; 21—, 77; 19—, 78.

Resident.

Mar. 17-Oct. 28, 74; Mar. 15—, 76; April 3, 77; 6—, 79.
149. Coccyzus americanus (Linn.) Bp. Yellow-billed Cuckoo. 387.
156. Scops asio (Linn.) Bp. Little Screech Owl. 402.
158. Falco peregrinos murialis (Gm.) Ridg. Peregrine Falcon; Duck Hawk. 414.
160. Passerineus aquatics (Linn.) Vieill. Sparrow Hawk. 420.
161. Pandion haliaetus carolinensis (Gm.) Ridg. American Osprey; Fish Hawk. 425.
162. Emleria forficata (Linn.) Ridg. Swallow-tailed Kite. 426.
163. Circa hudsonius (Linn.) Vieill. Marsh Hawk. 430.
164. Accipiter cooperi Bonap. Cooper's Hawk. 491.
171. *Buteo borealis* (Gm.) Vieill.
   Red-tailed Hawk. 436.
   Resident.

172. *Buteo lineatus* (Gm.) Jard.
   Red-shouldered Hawk. 439.
   Resident.

   Broad-winged Hawk. 448.
   Resident.

174. *Archilochus lagopus sancti-johannis* (Gm.) Ridg.
   American Rough-legged Hawk. 447.
   Mar. 14, 75.

175. *Aquila chrysaetos canadensis* (Linn.)
   Golden Eagle. 449.
   Mar. 15—, 75; Apr. 6—, 76.

176. *Haliaeetus leucocephalus* (Linn.) Savig.
   Bald Eagle; Gray Eagle. 451.
   Oct. 17, 74; Jan. 11, 77.

177. *Cathartes aura* (Linn.) Illg.
   Turkey Buzzard. 454.
   Mar. 2—, 74; 22—, 75; winters.

   Black Vulture; Carrion Crow. 455.

179. *Ectopistes migratorius* (Linn.) Sw.
   Passenger Pigeon. 459.
   May 28, 66.

   Mourning Dove. 469.

   Wild Turkey. 470a.

182. *Bonasa umbellus* (Linn.) Steph.
   Ruffed Grouse. 473.
   Sept. —, 1868.

   Prairie Hen. 476.
   Nov. 16, 78.

   Boh-white; American Quail. 480.

185. *Ardea herodias* Linn.
   Great Blue Heron. 487.

186. *Heronia alba eretta* (Gm.) Ridg.
   American Egret. 489.

187. *Geronticus crassirostris* (Gm.) Bp.
   Snowy Heron. 490.
   April 14—, 73; 18—, 74; 24—, 75.

188. *Bioturus vivaceus* (Linn.) Bp.
   Green Heron. 494.
   Oct. 17, 74.

189. *Nycticorax griseus moris* (Bodl.) Allen.
   Black-crowned Night Heron. 495.
   Oct. 28-Nov. 26, 73; Apr. 21—, 78.

190. *Bubulcus ibis* (Montg.) Steph.
   American Bittern. 497.
   May 14, 76.

191. *Tadorna tadorna* (Linn.)
   Least Bittern. 498.

   Wood Ibis. 500.
Glossy Ibis.  503.

194. *Strygos interpres* (Linn.) Illig.  
Turnstone.  509.

Black-bellied Plover.  513.

American Golden Plover.  515.

197. *Strepsilas interpres* (Linn.) Illig.  
Killdeer.  516.


199. *Squatarola helenica* (Linn.) Cuv.  
Black-bellied Plover.  513.

American Golden Plover.  515.

201. *Squatarola helenica* (Linn.) Cuv.  
Black-bellied Plover.  513.


203. *Pholos minor* (Gm.) Gray,  
American Woodcock.  525.

204. *Macrorhamphus griseus* (Gm.) Leach.  
Red-breasted Snipe; Gray Snipe.  527.

205. *Macrorhamphus griseus* (Gm.) Leach.  
Red-breasted Snipe; Gray Snipe.  527.

206. *Actodromas fusciolus* Vieill.  
Bonaparte’s Sandpiper.  536.

Stilt Sandpiper.  529.

208. *Actodromas fusciolus* Vieill.  
Bonaparte’s Sandpiper.  536.

Least Sandpiper.  538.

Red-backed Sandpiper.  539a.

211. *Eremophila semipalmata* (Linn.) Cass.  
Semipalmated Sandpiper.  541.

212. *Calidris cincta* (Linn.) Illig.  
Sanderling.  542.

Marble Godwit.  543.
214. Limosa hudsonica (Linn.) Coues.
   Hudsonian Godwit. 545.
215. Tringa melanoleuca (Gm.) Vieill.
   Greater Yellow-legs; Tell-tale. 548.
216. Tringa flavipes (Gmel.) Vieill.
   Yellow-legs. 549.
   Solitary Sandpiper. 550.
218. Tringa solitaria (Wils.) Cass.
   Solitary Sandpiper. 551.
219. Tringa pugnax (Linn.) Gmel.
   Kellf. 552.
220. Bartramia longicauda (Bechst.) Bp.
   Bartram’s Sandpiper; Field Plover. 553.
221. Tringa melanoleuca (Gm.) Vieill.
   Greater Yellow-legs; Tell-tale. 548.
222. Tringa melanoleuca (Gm.) Vieill.
   Greater Yellow-legs; Tell-tale. 548.
   Solitary Sandpiper. 550.
   Buff-breasted Sandpiper. 551.
225. Numenius hyperboreus (Linn.) Cuv.
   Northern Phalarope. 564.
226. Syncotus virginosus (Linn.) Cuv.
   Virginia Rail. 572.
227. Porzana carolina (Linn.) Baird.
   Sora Rail. 574.
228. Porzana palustris (Gm.) Baird.
   Little Yellow Rail. 575.
229. Lornis maculicollis (Linn.) Reich.
   Purple Gallinule. 578.

   Hudsonian Godwit. 545.
215. *Tringa melanoleuca* (Gm.) Vieill.
   Greater Yellow-legs; Tell-tale. 548.
216. *Tringa flavipes* (Gmel.) Vieill.
   Yellow-legs. 549.
   Solitary Sandpiper. 550.
   Solitary Sandpiper. 551.
   Kellf. 552.
   Bartram’s Sandpiper; Field Plover. 553.
221. *Tringa melanoleuca* (Gm.) Vieill.
   Greater Yellow-legs; Tell-tale. 548.
222. *Tringa melanoleuca* (Gm.) Vieill.
   Greater Yellow-legs; Tell-tale. 548.
   Solitary Sandpiper. 550.
   Buff-breasted Sandpiper. 551.
225. *Numenius hyperboreus* (Linn.) Cuv.
   Northern Phalarope. 564.
   Virginia Rail. 572.
   Sora Rail. 574.
228. *Porzana palustris* (Gm.) Baird.
   Little Yellow Rail. 575.
229. *Lornis maculicollis* (Linn.) Reich.
   Purple Gallinule. 578.

April —, 1857; May —, 1862.

Sept. 4, 78; April 18, Aug. 6-Oct. 17, 74; April 21, 75; Aug. 16-
Nov. 17, 76; Aug. 28, 77.

April 14-May 16, Aug. 16, 73; Aug.-Oct. 17, 74; May 8, 76; Aug.
30, 77.

April 24-July 20, 73; May 28-July 25, 74; April 18, 76.

Nov. 10, 72. Licking Reservoir.

Aug. 14, 72; April 27-Aug. 31, 74; April 19—, 75.

Aug. 31, 76.

April 27—, 73; 18-Oct. 8, 74; April 19—, 75; 18—, 76; 21—, 77;
19—, 78.

Columbus, fall of ——; Dr. Jasper.

May 4, 74; April 19, 76.

April 19, 75.

May 4-Nov. 1, 73; May 2-Oct. 17, 74; April 17—, 76.

April 24, 79.

May 10, 77; Circleville.


238. *Gors americana* (Linn.) Temm. Whooping Crane. 582.

239. *Gors canadensis* (Linn.) Temm. Sandhill Crane. 583.


255. *Anas snychra* (Linn.) Lebe. Wood Duck; Summer Duck. 604.


April 29, 76.

Nov. 1, 73; Oct. 17, 74; Mar. 26—, 75.

Nov. 26, 76.

March 19, 77.

Oct. 28, 76.

Mar. 19, 74.

Oct. 17, 74; Mar. 1, 2, 77.

Oct. 17, 74; Mar. 5, 79.

Mar. 28, 77.

Feb. 27, 75; 20, 77; Mar. 5, 79.

Oct. 3, 74; Mar. 19, 77.

April 15, 75; Mar. 4, 79; 27, 77; 11, 79.

April 18, Oct. 17, 74; April 20, 75; 7, 76; May 8, 76; April 20, 77; 14, 78.

April 20, 75.

Mar. 28, 77.

April 7–23, 76; Mar. 11, 77.
257. *Fidix effinis* (Eyt.) Baird.  
Little Blackhead. 615.

258. *Fidix coliris* (Donov.) Baird.  
King-billed Blackhead. 616.

259. *Anhyra wilsoni* (Wils.) Boie.  
Canvas-back. 617.

Redhead. 618.

261. *Clangula glauca americana* (Bp.) Ridg.  
American Golden-eye. 619.

262. *Clangula alheola* (Linn.) Steph.  
Butterball; Bufflehead. 620.

263. *Harelda gaeidalk* (Linn.) Leach.  
Long-tailed Duck; Old Squaw. 621.

264. *Somatricia spectabilis* (Linn.) Boie.  
King Eider. 622.

American Scoter. 623.

266. *Melanetta velvetina* (Cass.) Baird.  
American Velvet Scoter. 624.

Ruddy Duck. 625.

American Sheldrake. 626.

269. *Mergus serrator* Linn.  
Red-breasted Sheldrake. 627.

270. *Lophodytes cucullatus* (Linn.) Reich.  
Hooded Sheldrake. 628.

American White Pelican. 629.

Double-crested Cormorant. 630.

Florida Cormorant. 631.

Kittiwake Gull. 632.

274. *Larus leucopterus* Faber.  
White-winged Gull. 633.

275. *Larus marinus* Linn.  
Great Black-backed Gull. 634.

American Herring Gull. 635.

Ring-billed Gull. 636.

Mar. 25, 75; 11, 77; 6, 79.

Mar. 23, 75; 11, 77; 6, 79.

Mar. 30, 77.

Mar. 25, 75.

Mar. 23, Dec. 20, 75; 12-15, 75.

Mar. 25, 75; 6, 77; April 14, 78.

Dec. 4, 1880.

Dec. 11, 75; Licking Reservoir.

Dec. 13, 75; Licking Reservoir.

April 27, 78.

Mar. 19, Nov. 12, 77.

Nov. 4, 78.

Mar. 25, 75; 4, 76; 19, 77; Nov. 2, 78.

Oct. —, 61.

April 1, 78; Licking Reservoir.

Sept. —, 61.

Mar. 23, 75; April 22, 75; Mar. 30, 76; 2-30, 77; Nov. 4, 78.

Mar. 3, 77.
278. *Larus philadelphicus* (Ord.) Gray.
Bonaparte's Gull. 675.

279. *Xema sabini* (J. Sabine) Leach.
Sabine's Gull. 677.

Gull-billed Tern. 679.

281. *Sterna forsteri* Nutt.
Forster’s Tern. 685.

282. *Sterna puscula* Nann.
Common Tern. 687.

Roseate Tern. 690.

May 29, 19, 73.

285. *Hydrochelidon loriiformis surinamensis* (Gm.) Ridg.
Black Tern. 693.

286. *Stercorarius pomaricus* (Temm.) Vieill.
Pomarine Jaeger. 697.

American Red-necked Grebe. 731.

288. *Dyctes auritus* (Linn.) Ridg.
Horned Grebe. 732.

289. *Podiceps nigricollis* (Linn.) Linn.
Black-necked Grebe. 735.

290. *Colymbus torquatus* Brun.
Loon. 736.

291. *Colymbus arcticus* Linn.
Black-throated Diver. 738.

292. *Clymopus 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, 19, 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, 95, 97, 99, 102, 103, 104, 105, 106, 108, 109, 110, 112,

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 chatter of their machinery and the far-reaching sounds of steam whistles. Such changes were sure to produce corresponding influences upon the Avian 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 Pinated 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
dresses 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 oological 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 Phoebe 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 house 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 unacquainted 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 Robio 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.

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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 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 yet not 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 hardly, 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 moss, 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 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 collector 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 desirable 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 hastily 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 oology, 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 oologist in his out-of-door work. Exceptional nests and eggs cannot 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 cannot 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 oology 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.

A.—SHELL WHITE OR WHITISH.

<table>
<thead>
<tr>
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<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1.00 to 1.05</td>
<td>1.85 to 1.90</td>
<td>White.</td>
<td>2 to 5</td>
<td>Crudely the eggs are laid in an old nest of a Black or in a hollow tree. Commonly laid near nests made a nest or by themselves in the fork of a tree. If made of sticks, twigs, etc. Eggs laid in February or March. Eels in February or March.</td>
</tr>
<tr>
<td>2</td>
<td>1.05 to 1.30</td>
<td>1.40 to 1.90</td>
<td>White.</td>
<td>2 to 5</td>
<td>Nest in the fork of a tree, or placed in a fork similar to the above. Eggs laid in February or March.</td>
</tr>
<tr>
<td>3</td>
<td>1.30 to 1.50</td>
<td>1.30 to 1.80</td>
<td>White.</td>
<td>2 to 6</td>
<td>Nest made of sticks, grass, etc., and placed in a tree, bush, upon the ground or in the nest of a hawk or an owl. Sometimes laid in a nest of a hawk and sometimes in one of a owl. Eggs in May or June.</td>
</tr>
<tr>
<td>4</td>
<td>1.40 to 1.50</td>
<td>1.30 to 1.70</td>
<td>White.</td>
<td>4 to 4</td>
<td>Nest in a hollow tree or on a tree-stump. Eggs in May or June.</td>
</tr>
<tr>
<td>5</td>
<td>1.70 to 1.80</td>
<td>1.70 to 1.70</td>
<td>White.</td>
<td>4 to 1</td>
<td>Eggs laid upon a rock or a rock, or a rock or in a hollow tree, etc. Eggs laid in May or June.</td>
</tr>
<tr>
<td>6</td>
<td>1.30 to 1.30</td>
<td>1.40 to 1.70</td>
<td>White.</td>
<td>7 to 15</td>
<td>Nest of leaves, etc., on the ground beside a log, under a bush, etc., in another woods, occasionally also in broken pines near woods. Eggs from April to July.</td>
</tr>
<tr>
<td>7</td>
<td>0.80 to 1.00</td>
<td>1.00 to 1.30</td>
<td>White.</td>
<td>2</td>
<td>Nest in a hollow tree, usually a number of nests near by each other. Made at night chiefly.</td>
</tr>
<tr>
<td>8</td>
<td>1.00 to 1.05</td>
<td>1.20 to 1.50</td>
<td>White.</td>
<td>6 to 1</td>
<td>Nest at the end of a branch in a bush, or on a branch of a tree, etc. Occasionally laid in a hollow tree. Eggs laid in May or June.</td>
</tr>
<tr>
<td>9</td>
<td>0.80 to 1.00</td>
<td>1.00 to 1.20</td>
<td>White.</td>
<td>12 to 20</td>
<td>Nest on the ground in open fields, sometimes in woods, made of grass, etc., and generally consumption by birds of prey. Eggs from April to July.</td>
</tr>
<tr>
<td>10</td>
<td>0.70 to 0.80</td>
<td>0.70 to 1.20</td>
<td>White.</td>
<td>2</td>
<td>Nest in a hollow tree, leaves-and, etc., made for the purpose to the birds. Nest in a hollow tree, leaves-and, etc., made for the purpose to the birds. Eggs laid in April.</td>
</tr>
<tr>
<td>11</td>
<td>0.80 to 0.90</td>
<td>0.80 to 1.30</td>
<td>White.</td>
<td>6 to 9</td>
<td>Nest in the cavity in a dead tree, leaves-and, etc., made for the purpose to the birds. Nest in a hollow tree, leaves-and, etc., made for the purpose to the birds. Eggs laid in May or June.</td>
</tr>
<tr>
<td>12</td>
<td>0.90 to 1.00</td>
<td>1.00 to 1.10</td>
<td>White.</td>
<td>2 to 6</td>
<td>Nest in a cavity in a dead tree, leaves-and, etc., made for the purpose to the birds. Nest in a hollow tree, leaves-and, etc., made for the purpose to the birds. Eggs laid in May or June.</td>
</tr>
<tr>
<td>13</td>
<td>0.30 to 0.50</td>
<td>0.30 to 1.00</td>
<td>White.</td>
<td>2 to 4</td>
<td>Nest in a hollow tree, leaves-and, etc., made for the purpose to the birds. Nest in a hollow tree, leaves-and, etc., made for the purpose to the birds. Eggs laid in May or June.</td>
</tr>
<tr>
<td>14</td>
<td>0.60 to 0.70</td>
<td>0.85 to 1.05</td>
<td>White.</td>
<td>2 to 4</td>
<td>Nest in a hollow tree, leaves-and, etc., made for the purpose to the birds. Nest in a hollow tree, leaves-and, etc., made for the purpose to the birds. Eggs laid in May or June.</td>
</tr>
<tr>
<td>15</td>
<td>0.50 to 0.70</td>
<td>0.80 to 0.80</td>
<td>White.</td>
<td>2 to 4</td>
<td>Nest in a hollow tree, leaves-and, etc., made for the purpose to the birds. Nest in a hollow tree, leaves-and, etc., made for the purpose to the birds. Eggs laid in May or June.</td>
</tr>
<tr>
<td>16</td>
<td>0.80 to 0.90</td>
<td>0.80 to 1.00</td>
<td>White.</td>
<td>2 to 4</td>
<td>Nest in a hollow tree, leaves-and, etc., made for the purpose to the birds. Nest in a hollow tree, leaves-and, etc., made for the purpose to the birds. Eggs laid in May or June.</td>
</tr>
<tr>
<td>17</td>
<td>0.60 to 0.70</td>
<td>0.90 to 0.80</td>
<td>White.</td>
<td>2 to 5</td>
<td>Nest in a hollow tree, leaves-and, etc., made for the purpose to the birds. Nest in a hollow tree, leaves-and, etc., made for the purpose to the birds. Eggs laid in May or June.</td>
</tr>
<tr>
<td>18</td>
<td>0.40 to 0.50</td>
<td>0.75 to 0.80</td>
<td>White.</td>
<td>2 to 4</td>
<td>Nest in a hollow tree, leaves-and, etc., made for the purpose to the birds. Nest in a hollow tree, leaves-and, etc., made for the purpose to the birds. Eggs laid in May or June.</td>
</tr>
</tbody>
</table>

BIRDS OF OHIO.
### A—Shell White or Whitish—Continued

<table>
<thead>
<tr>
<th>No</th>
<th>Size of Eggs in Long-dimension</th>
<th>Size of Eggs in Long-dimension</th>
<th>Color of Shell</th>
<th>Color Number</th>
<th>Location, Position, Materials, Size, etc., of Nest</th>
<th>English and Latin Name of Nest</th>
</tr>
</thead>
<tbody>
<tr>
<td>19</td>
<td>0.10 to 0.15</td>
<td>0.17 to 0.25</td>
<td>White</td>
<td>4 to 5</td>
<td>Nest in debris, etc. in or near water, or on water, usually near some other water, also in rocky crevices, small or large spaces, etc., near or on water.</td>
<td>White-breasted Nuthatch, Sitta carolinensis.</td>
</tr>
<tr>
<td>20</td>
<td>0.15 to 0.20</td>
<td>0.20 to 0.25</td>
<td>White</td>
<td>4 to 5</td>
<td>Nest in debris, etc. in or near water, or on water, usually near some other water, also in rocky crevices, small or large spaces, etc., near or on water.</td>
<td>White-breasted Nuthatch, Sitta carolinensis.</td>
</tr>
<tr>
<td>21</td>
<td>0.15 to 0.20</td>
<td>0.20 to 0.25</td>
<td>White</td>
<td>4 to 5</td>
<td>Nest in debris, etc. in or near water, or on water, usually near some other water, also in rocky crevices, small or large spaces, etc., near or on water.</td>
<td>White-breasted Nuthatch, Sitta carolinensis.</td>
</tr>
<tr>
<td>22</td>
<td>0.15 to 0.20</td>
<td>0.20 to 0.25</td>
<td>White</td>
<td>4 to 5</td>
<td>Nest in debris, etc. in or near water, or on water, usually near some other water, also in rocky crevices, small or large spaces, etc., near or on water.</td>
<td>White-breasted Nuthatch, Sitta carolinensis.</td>
</tr>
</tbody>
</table>

### B—Shell Blue or Bluish, or Green or Greenish.

<table>
<thead>
<tr>
<th>No</th>
<th>Size of Eggs in Long-dimension</th>
<th>Size of Eggs in Long-dimension</th>
<th>Color of Shell</th>
<th>Color Number</th>
<th>Location, Position, Materials, Size, etc., of Nest</th>
<th>English and Latin Name of Nest</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1.75 to 1.85</td>
<td>2.00 to 2.15</td>
<td>Blueish-green</td>
<td>5 to 6</td>
<td>Nest in holes, etc. in or near water, or on water, usually near some other water, also in rocky crevices, small or large spaces, etc., near or on water.</td>
<td>Great Blue Heron, Ardea herodias.</td>
</tr>
<tr>
<td>2</td>
<td>1.75 to 1.85</td>
<td>2.00 to 2.15</td>
<td>Blueish-green</td>
<td>5 to 6</td>
<td>Nest in holes, etc. in or near water, or on water, usually near some other water, also in rocky crevices, small or large spaces, etc., near or on water.</td>
<td>Great Blue Heron, Ardea herodias.</td>
</tr>
<tr>
<td>3</td>
<td>1.75 to 1.85</td>
<td>2.00 to 2.15</td>
<td>Blueish-green</td>
<td>5 to 6</td>
<td>Nest in holes, etc. in or near water, or on water, usually near some other water, also in rocky crevices, small or large spaces, etc., near or on water.</td>
<td>Great Blue Heron, Ardea herodias.</td>
</tr>
<tr>
<td>4</td>
<td>1.75 to 1.85</td>
<td>2.00 to 2.15</td>
<td>Blueish-green</td>
<td>5 to 6</td>
<td>Nest in holes, etc. in or near water, or on water, usually near some other water, also in rocky crevices, small or large spaces, etc., near or on water.</td>
<td>Great Blue Heron, Ardea herodias.</td>
</tr>
<tr>
<td>5</td>
<td>1.75 to 1.85</td>
<td>2.00 to 2.15</td>
<td>Blueish-green</td>
<td>5 to 6</td>
<td>Nest in holes, etc. in or near water, or on water, usually near some other water, also in rocky crevices, small or large spaces, etc., near or on water.</td>
<td>Great Blue Heron, Ardea herodias.</td>
</tr>
</tbody>
</table>

### C—Shell Neither White or Whitish, nor Blue or Bluish, or Green or Greenish.

<table>
<thead>
<tr>
<th>No</th>
<th>Size of Eggs in Long-dimension</th>
<th>Size of Eggs in Long-dimension</th>
<th>Color of Shell</th>
<th>Color Number</th>
<th>Location, Position, Materials, Size, etc., of Nest</th>
<th>English and Latin Name of Nest</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>1.30 to 1.50</td>
<td>1.50 to 1.70</td>
<td>Creamy-yellowish-white</td>
<td>6 to 8</td>
<td>Nest in holes in trees, including some water. Yellow sparsely lines black and grey.</td>
<td>Wood Duck, Aix americana.</td>
</tr>
<tr>
<td>7</td>
<td>1.30 to 1.50</td>
<td>1.50 to 1.70</td>
<td>Creamy-yellowish-white</td>
<td>6 to 8</td>
<td>Nest in holes in trees, including some water. Yellow sparsely lines black and grey.</td>
<td>Wood Duck, Aix americana.</td>
</tr>
<tr>
<td>8</td>
<td>1.30 to 1.50</td>
<td>1.50 to 1.70</td>
<td>Creamy-yellowish-white</td>
<td>6 to 8</td>
<td>Nest in holes in trees, including some water. Yellow sparsely lines black and grey.</td>
<td>Wood Duck, Aix americana.</td>
</tr>
<tr>
<td>9</td>
<td>1.30 to 1.50</td>
<td>1.50 to 1.70</td>
<td>Creamy-yellowish-white</td>
<td>6 to 8</td>
<td>Nest in holes in trees, including some water. Yellow sparsely lines black and grey.</td>
<td>Wood Duck, Aix americana.</td>
</tr>
<tr>
<td>10</td>
<td>1.30 to 1.50</td>
<td>1.50 to 1.70</td>
<td>Creamy-yellowish-white</td>
<td>6 to 8</td>
<td>Nest in holes in trees, including some water. Yellow sparsely lines black and grey.</td>
<td>Wood Duck, Aix americana.</td>
</tr>
<tr>
<td>11</td>
<td>1.30 to 1.50</td>
<td>1.50 to 1.70</td>
<td>Creamy-yellowish-white</td>
<td>6 to 8</td>
<td>Nest in holes in trees, including some water. Yellow sparsely lines black and grey.</td>
<td>Wood Duck, Aix americana.</td>
</tr>
<tr>
<td>12</td>
<td>1.30 to 1.50</td>
<td>1.50 to 1.70</td>
<td>Creamy-yellowish-white</td>
<td>6 to 8</td>
<td>Nest in holes in trees, including some water. Yellow sparsely lines black and grey.</td>
<td>Wood Duck, Aix americana.</td>
</tr>
<tr>
<td>13</td>
<td>1.30 to 1.50</td>
<td>1.50 to 1.70</td>
<td>Creamy-yellowish-white</td>
<td>6 to 8</td>
<td>Nest in holes in trees, including some water. Yellow sparsely lines black and grey.</td>
<td>Wood Duck, Aix americana.</td>
</tr>
<tr>
<td>14</td>
<td>1.30 to 1.50</td>
<td>1.50 to 1.70</td>
<td>Creamy-yellowish-white</td>
<td>6 to 8</td>
<td>Nest in holes in trees, including some water. Yellow sparsely lines black and grey.</td>
<td>Wood Duck, Aix americana.</td>
</tr>
<tr>
<td>15</td>
<td>1.30 to 1.50</td>
<td>1.50 to 1.70</td>
<td>Creamy-yellowish-white</td>
<td>6 to 8</td>
<td>Nest in holes in trees, including some water. Yellow sparsely lines black and grey.</td>
<td>Wood Duck, Aix americana.</td>
</tr>
<tr>
<td>16</td>
<td>1.30 to 1.50</td>
<td>1.50 to 1.70</td>
<td>Creamy-yellowish-white</td>
<td>6 to 8</td>
<td>Nest in holes in trees, including some water. Yellow sparsely lines black and grey.</td>
<td>Wood Duck, Aix americana.</td>
</tr>
<tr>
<td>17</td>
<td>1.30 to 1.50</td>
<td>1.50 to 1.70</td>
<td>Creamy-yellowish-white</td>
<td>6 to 8</td>
<td>Nest in holes in trees, including some water. Yellow sparsely lines black and grey.</td>
<td>Wood Duck, Aix americana.</td>
</tr>
</tbody>
</table>
### 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.*

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1.0 to 1.05</td>
<td>1.25 to 1.53</td>
<td>Shell gray. Marked with indistinct blotches and spots of dark blue, and unusually bluish, somber, and reddish-brown, in a somewhat circular arrangement. Shell marks ordinary marks of another species, and not very numerous. Some have a rather small cavity about the crown.</td>
<td>5</td>
<td>Nest in trees, generally above 50 feet, with moss, vines, flocks, grass, etc., and various other nesting materials. Shell dark greenish, with streaks of brown, and a few brownish spots, and with a few white spots.</td>
<td>Red-tailed Hawk. Stans borealis.</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>1.15 to 1.25</td>
<td>1.20 to 1.45</td>
<td>Country white. Marked with large bluish, black, and speckles of brown, white, and black, in a somewhat circular arrangement. Marked with indistinct blotches and spots of dark blue, and unusually bluish, somber, and reddish-brown, in a somewhat circular arrangement. Shell gray.</td>
<td>3 to 4</td>
<td>Nest in trees, generally above 50 feet, with moss, vines, flocks, grass, etc., and various other nesting materials. Shell dark greenish, with streaks of brown, and a few brownish spots, and with a few white spots.</td>
<td>Red-tailed Hawk. Stans borealis.</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>1.0 to 1.05</td>
<td>1.25 to 1.53</td>
<td>Shell gray. Marked with indistinct blotches and spots of dark blue, and unusually bluish, somber, and reddish-brown, in a somewhat circular arrangement. Shell gray.</td>
<td>3 to 4</td>
<td>Nest in trees, generally above 50 feet, with moss, vines, flocks, grass, etc., and various other nesting materials. Shell dark greenish, with streaks of brown, and a few brownish spots, and with a few white spots.</td>
<td>Red-tailed Hawk. Stans borealis.</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>1.25 to 1.55</td>
<td>1.20 to 1.45</td>
<td>Shell gray. Marked with indistinct blotches and spots of dark blue, and unusually bluish, somber, and reddish-brown, in a somewhat circular arrangement. Shell gray.</td>
<td>3 to 4</td>
<td>Nest in trees, generally above 50 feet, with moss, vines, flocks, grass, etc., and various other nesting materials. Shell dark greenish, with streaks of brown, and a few brownish spots, and with a few white spots.</td>
<td>Red-tailed Hawk. Stans borealis.</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>0.8 to 0.9</td>
<td>1.25 to 1.53</td>
<td>White. Marked with large bluish, black, and speckles of brown, white, and black, in a somewhat circular arrangement. Marked with indistinct blotches and spots of dark blue, and unusually bluish, somber, and reddish-brown, in a somewhat circular arrangement. Shell gray.</td>
<td>3 to 4</td>
<td>Nest in trees, generally above 50 feet, with moss, vines, flocks, grass, etc., and various other nesting materials. Shell dark greenish, with streaks of brown, and a few brownish spots, and with a few white spots.</td>
<td>Red-tailed Hawk. Stans borealis.</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>0.75 to 0.9</td>
<td>1.20 to 1.35</td>
<td>White. Marked with large bluish, black, and speckles of brown, white, and black, in a somewhat circular arrangement. Marked with indistinct blotches and spots of dark blue, and unusually bluish, somber, and reddish-brown, in a somewhat circular arrangement. Shell gray.</td>
<td>3 to 4</td>
<td>Nest in trees, generally above 50 feet, with moss, vines, flocks, grass, etc., and various other nesting materials. Shell dark greenish, with streaks of brown, and a few brownish spots, and with a few white spots.</td>
<td>Red-tailed Hawk. Stans borealis.</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>0.72 to 0.85</td>
<td>1.25 to 1.35</td>
<td>White or white faintly bluish with greyish tinge, or gray. Marked with large bluish, black, and speckles of brown, white, and black, in a somewhat circular arrangement. Marked with indistinct blotches and spots of dark blue, and unusually bluish, somber, and reddish-brown, in a somewhat circular arrangement. Shell gray.</td>
<td>3 to 4</td>
<td>Nest in trees, generally above 50 feet, with moss, vines, flocks, grass, etc., and various other nesting materials. Shell dark greenish, with streaks of brown, and a few brownish spots, and with a few white spots.</td>
<td>Red-tailed Hawk. Stans borealis.</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>0.68 to 0.85</td>
<td>1.25 to 1.35</td>
<td>White, sometimes faintly bluish with greyish tinge, or gray. Marked with large bluish, black, and speckles of brown, white, and black, in a somewhat circular arrangement. Marked with indistinct blotches and spots of dark blue, and unusually bluish, somber, and reddish-brown, in a somewhat circular arrangement. Shell gray.</td>
<td>3 to 4</td>
<td>Nest in trees, generally above 50 feet, with moss, vines, flocks, grass, etc., and various other nesting materials. Shell dark greenish, with streaks of brown, and a few brownish spots, and with a few white spots.</td>
<td>Red-tailed Hawk. Stans borealis.</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>0.65 to 0.85</td>
<td>1.25 to 1.35</td>
<td>White, slightly bluish with greyish tinge. Marked with large bluish, black, and speckles of brown, white, and black, in a somewhat circular arrangement. Marked with indistinct blotches and spots of dark blue, and unusually bluish, somber, and reddish-brown, in a somewhat circular arrangement. Shell gray.</td>
<td>3 to 4</td>
<td>Nest in trees, generally above 50 feet, with moss, vines, flocks, grass, etc., and various other nesting materials. Shell dark greenish, with streaks of brown, and a few brownish spots, and with a few white spots.</td>
<td>Red-tailed Hawk. Stans borealis.</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>0.62 to 0.85</td>
<td>1.25 to 1.35</td>
<td>White. Marked with large bluish, black, and speckles of brown, white, and black, in a somewhat circular arrangement. Marked with indistinct blotches and spots of dark blue, and unusually bluish, somber, and reddish-brown, in a somewhat circular arrangement. Shell gray.</td>
<td>3 to 4</td>
<td>Nest in trees, generally above 50 feet, with moss, vines, flocks, grass, etc., and various other nesting materials. Shell dark greenish, with streaks of brown, and a few brownish spots, and with a few white spots.</td>
<td>Red-tailed Hawk. Stans borealis.</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>0.60 to 0.85</td>
<td>1.25 to 1.35</td>
<td>White. Marked with large bluish, black, and speckles of brown, white, and black, in a somewhat circular arrangement. Marked with indistinct blotches and spots of dark blue, and unusually bluish, somber, and reddish-brown, in a somewhat circular arrangement. Shell gray.</td>
<td>3 to 4</td>
<td>Nest in trees, generally above 50 feet, with moss, vines, flocks, grass, etc., and various other nesting materials. Shell dark greenish, with streaks of brown, and a few brownish spots, and with a few white spots.</td>
<td>Red-tailed Hawk. Stans borealis.</td>
<td></td>
</tr>
</tbody>
</table>

*With eggs that are marked it is difficult to tell the exact size of the ground, owing to the contrast of colors. The average that 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.

---

*This page that is marked it is difficult to tell the exact size of the ground, owing to the contrast of colors. The average that 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.

<table>
<thead>
<tr>
<th>No.</th>
<th>Length of Eggs (in Inches)</th>
<th>Diameter of Eggs (in Inches)</th>
<th>Ground Color of Shell</th>
<th>How Marked, Color of Marking, etc.</th>
<th>No. of Eggs</th>
<th>Location, Position, Male or Female, etc.</th>
<th>English and Latin Names of Birds</th>
</tr>
</thead>
<tbody>
<tr>
<td>12</td>
<td>.60 to .64</td>
<td>.32 to .33</td>
<td>White</td>
<td>Marked, red spots scattered, green</td>
<td>3 to 5</td>
<td>Nest in woods, several feet above ground, in shrubs, bushes, or trees. Deep shell marks are gray and sometimes hidden by green.</td>
<td>Yellow-throated Vireo, <strong>Vireo griseus</strong></td>
</tr>
<tr>
<td>13</td>
<td>.65 to .68</td>
<td>.26 to .30</td>
<td>White</td>
<td>Marked with spots of gray, green, and brown, sometimes hidden by green.</td>
<td>3 to 5</td>
<td>Nest in woods, several feet above ground, in shrubs, bushes, or trees. Deep shell marks are gray and sometimes hidden by green.</td>
<td>Northern Parula, <strong>Parula americana</strong></td>
</tr>
<tr>
<td>14</td>
<td>.55 to .57</td>
<td>.26 to .30</td>
<td>White</td>
<td>Marked with spots of gray, green, and brown, sometimes hidden by green.</td>
<td>3 to 5</td>
<td>Nest in woods, several feet above ground, in shrubs, bushes, or trees. Deep shell marks are gray and sometimes hidden by green.</td>
<td>Eastern Bluebird, <strong>Sialia sialis</strong></td>
</tr>
<tr>
<td>15</td>
<td>.58 to .62</td>
<td>.24 to .29</td>
<td>White</td>
<td>Marked with spots of gray, green, and brown, sometimes hidden by green.</td>
<td>3 to 5</td>
<td>Nest in woods, several feet above ground, in shrubs, bushes, or trees. Deep shell marks are gray and sometimes hidden by green.</td>
<td>Purple Finch, <strong>Carpodacus purpureus</strong></td>
</tr>
<tr>
<td>16</td>
<td>.58 to .60</td>
<td>.20 to .30</td>
<td>White</td>
<td>Marked with spots of gray, green, and brown, sometimes hidden by green.</td>
<td>3 to 5</td>
<td>Nest in woods, several feet above ground, in shrubs, bushes, or trees. Deep shell marks are gray and sometimes hidden by green.</td>
<td>Yellow-throated Finch, <strong>Carpodacus mexicanus</strong></td>
</tr>
<tr>
<td>17</td>
<td>.56 to .58</td>
<td>.20 to .30</td>
<td>White</td>
<td>Marked with spots of gray, green, and brown, sometimes hidden by green.</td>
<td>3 to 5</td>
<td>Nest in woods, several feet above ground, in shrubs, bushes, or trees. Deep shell marks are gray and sometimes hidden by green.</td>
<td>Carolina Wren, <strong>Thryothorus ludovicianus</strong></td>
</tr>
<tr>
<td>18</td>
<td>.54 to .56</td>
<td>.18 to .30</td>
<td>White</td>
<td>Marked with spots of gray, green, and brown, sometimes hidden by green.</td>
<td>3 to 5</td>
<td>Nest in woods, several feet above ground, in shrubs, bushes, or trees. Deep shell marks are gray and sometimes hidden by green.</td>
<td>Yellow-throated Sparrow, <strong>Passerculus sandwichensis</strong></td>
</tr>
<tr>
<td>19</td>
<td>.52 to .54</td>
<td>.16 to .30</td>
<td>White</td>
<td>Marked with spots of gray, green, and brown, sometimes hidden by green.</td>
<td>3 to 5</td>
<td>Nest in woods, several feet above ground, in shrubs, bushes, or trees. Deep shell marks are gray and sometimes hidden by green.</td>
<td>Brown Finch, <strong>Carduelis harrisi</strong></td>
</tr>
<tr>
<td>20</td>
<td>.51 to .53</td>
<td>.16 to .30</td>
<td>Skit marks</td>
<td>Marked with spots of gray, green, and brown, sometimes hidden by green.</td>
<td>3 to 5</td>
<td>Nest in woods, several feet above ground, in shrubs, bushes, or trees. Deep shell marks are gray and sometimes hidden by green.</td>
<td>Black-bellied Sapsucker, <strong>Sphyrapicus niger</strong></td>
</tr>
<tr>
<td>21</td>
<td>.50 to .52</td>
<td>.16 to .30</td>
<td>White</td>
<td>Marked with spots of gray, green, and brown, sometimes hidden by green.</td>
<td>3 to 5</td>
<td>Nest in woods, several feet above ground, in shrubs, bushes, or trees. Deep shell marks are gray and sometimes hidden by green.</td>
<td>Chestnut-backed Chickadee, <strong>Poecile rufescens</strong></td>
</tr>
<tr>
<td>22</td>
<td>.48 to .50</td>
<td>.16 to .30</td>
<td>White</td>
<td>Marked with spots of gray, green, and brown, sometimes hidden by green.</td>
<td>3 to 5</td>
<td>Nest in woods, several feet above ground, in shrubs, bushes, or trees. Deep shell marks are gray and sometimes hidden by green.</td>
<td>Hairy Sapsucker, <strong>Sphyrapicus villosus</strong></td>
</tr>
<tr>
<td>23</td>
<td>.46 to .48</td>
<td>.16 to .30</td>
<td>White</td>
<td>Marked with spots of gray, green, and brown, sometimes hidden by green.</td>
<td>3 to 5</td>
<td>Nest in woods, several feet above ground, in shrubs, bushes, or trees. Deep shell marks are gray and sometimes hidden by green.</td>
<td>Tufted Titmouse, <strong>Baeolophus bicolor</strong></td>
</tr>
<tr>
<td>24</td>
<td>.45 to .46</td>
<td>.16 to .30</td>
<td>White</td>
<td>Marked with spots of gray, green, and brown, sometimes hidden by green.</td>
<td>3 to 5</td>
<td>Nest in woods, several feet above ground, in shrubs, bushes, or trees. Deep shell marks are gray and sometimes hidden by green.</td>
<td>Brown-headed Cowbird, <strong>Molothrus ater</strong></td>
</tr>
<tr>
<td>25</td>
<td>.43 to .44</td>
<td>.16 to .30</td>
<td>White</td>
<td>Marked with spots of gray, green, and brown, sometimes hidden by green.</td>
<td>3 to 5</td>
<td>Nest in woods, several feet above ground, in shrubs, bushes, or trees. Deep shell marks are gray and sometimes hidden by green.</td>
<td>Eastern Wood-Pewee, <strong>Contopus virens</strong></td>
</tr>
<tr>
<td>26</td>
<td>.41 to .42</td>
<td>.16 to .30</td>
<td>White</td>
<td>Marked with spots of gray, green, and brown, sometimes hidden by green.</td>
<td>3 to 5</td>
<td>Nest in woods, several feet above ground, in shrubs, bushes, or trees. Deep shell marks are gray and sometimes hidden by green.</td>
<td>Red-eyed Vireo, <strong>Vireo olivaceus</strong></td>
</tr>
<tr>
<td>27</td>
<td>.39 to .40</td>
<td>.16 to .30</td>
<td>White</td>
<td>Marked with spots of gray, green, and brown, sometimes hidden by green.</td>
<td>3 to 5</td>
<td>Nest in woods, several feet above ground, in shrubs, bushes, or trees. Deep shell marks are gray and sometimes hidden by green.</td>
<td>Vireo olivaceus, <strong>Vireo olivaceus</strong></td>
</tr>
<tr>
<td>28</td>
<td>.38 to .39</td>
<td>.16 to .30</td>
<td>White</td>
<td>Marked with spots of gray, green, and brown, sometimes hidden by green.</td>
<td>3 to 5</td>
<td>Nest in woods, several feet above ground, in shrubs, bushes, or trees. Deep shell marks are gray and sometimes hidden by green.</td>
<td>White-throated Sparrow, <strong>Passerella iliaca</strong></td>
</tr>
<tr>
<td>29</td>
<td>.36 to .37</td>
<td>.16 to .30</td>
<td>White</td>
<td>Marked with spots of gray, green, and brown, sometimes hidden by green.</td>
<td>3 to 5</td>
<td>Nest in woods, several feet above ground, in shrubs, bushes, or trees. Deep shell marks are gray and sometimes hidden by green.</td>
<td>White-throated Sparrow, <strong>Passerella iliaca</strong></td>
</tr>
<tr>
<td>30</td>
<td>.35 to .36</td>
<td>.16 to .30</td>
<td>White</td>
<td>Marked with spots of gray, green, and brown, sometimes hidden by green.</td>
<td>3 to 5</td>
<td>Nest in woods, several feet above ground, in shrubs, bushes, or trees. Deep shell marks are gray and sometimes hidden by green.</td>
<td>White-throated Sparrow, <strong>Passerella iliaca</strong></td>
</tr>
</tbody>
</table>
A—GROUND-COLOR OF SHELL WHITE OR WHITISH—CONTINUED.

<table>
<thead>
<tr>
<th>No.</th>
<th>Size of Eggs in Length</th>
<th>Shell Color</th>
<th>Ground-color of Shell</th>
<th>How Marked, Color of Marks, etc.</th>
<th>Location, Position, Materials, etc., etc., on Nest.</th>
<th>English and Latin Name of Bird.</th>
</tr>
</thead>
<tbody>
<tr>
<td>27</td>
<td>.58 to .60</td>
<td>.78 to .80</td>
<td>White.</td>
<td>Marked with blackish, green, and speckles of different shades of reddish-brown. Very shell-marks appear gray. Helps generally have a slight twist, sometimes they are obscured and form a wreath.</td>
<td>Unusually placed upon the edge of a large hollow tree in the attics of a house. Built of mud, lined with grass. Diameter of cavity 3 in. to 1 ft. depth about 1 ft.</td>
<td>Golden-crested Yellow-Warbler.</td>
</tr>
<tr>
<td>28</td>
<td>.60 to .65</td>
<td>.74 to .77</td>
<td>White.</td>
<td>Marked with spots and speckles of reddish-brown, sometimes with a light greenish-brown, and mostly with a grayish or yellowish-brown. Usually shell marks are well distributed, but none occur.</td>
<td>Nests found on the ground or in trees. Composed of coarse grasses, lined with fine grass and sometimes with moss. Diameter of cavity about 3 inches.</td>
<td>Cliff Swallow.</td>
</tr>
<tr>
<td>29</td>
<td>.60 to .65</td>
<td>.75 to .78</td>
<td>White.</td>
<td>Marked with a few small spots or speckles of red, usually near the top of the shell, where they occur in a wreath. Deep shell-marks appear neutral.</td>
<td>Nest sometimes placed in the loft of a barn or shed. Composed of coarse grasses, lined with fine grass and sometimes with moss. Diameter of cavity about 3 inches.</td>
<td>White-throated Sparrow.</td>
</tr>
<tr>
<td>30</td>
<td>.55 to .57</td>
<td>.66 to .68</td>
<td>Usually gray white, sometimes dingy or yellowish-white.</td>
<td>Marked with dots and small spots of gray, sometimes black, occasionally blackish, and more commonly blackish, with white or grayish, or yellowish-brown.</td>
<td>Nest usually placed upon the edge of a stone wall, or in the attic of a barn. Built of mud, lined with grass and sometimes with feathers.</td>
<td>Field Sparrow.</td>
</tr>
<tr>
<td>31</td>
<td>.55 to .57</td>
<td>.66 to .69</td>
<td>White, or with the slightest tint of olive-green.</td>
<td>Marked with blackish, green, and speckles of different shades of brown, sometimes with a grayish or yellowish-brown.</td>
<td>Nest in trees, usually nest external. Usually built. Composed of coarse grasses, lined with fine grass and sometimes with moss. Diameter of cavity 3 inches.</td>
<td>White-throated Sparrow.</td>
</tr>
<tr>
<td>32</td>
<td>.58 to .60</td>
<td>.73 to .79</td>
<td>White.</td>
<td>Marked with white and speckled chocolate, brown, black, and grayish-brown. Often the spots are larger and they occur in the top of the shell. Deep shell-marks appear neutral.</td>
<td>Nest built on a stone wall. Composed of coarse grasses, lined with fine grass and sometimes with moss. Diameter of cavity about 3 inches.</td>
<td>White-throated Sparrow.</td>
</tr>
<tr>
<td>33</td>
<td>.55 to .60</td>
<td>.65 to .65</td>
<td>Light white, often tinged with brown or tawny.</td>
<td>Some eggs marked chiefly with speckles of various shades of brown and black.</td>
<td>Nest on the ground in open fields, in old deserted stables and in abandoned places. Composed of coarse grasses, lined with fine grass and sometimes with moss. Diameter of cavity about 3 inches.</td>
<td>White-throated Sparrow.</td>
</tr>
<tr>
<td>34</td>
<td>.55 to .57</td>
<td>.65 to .69</td>
<td>White.</td>
<td>Marked with blackish, green, and speckles of different shades of brown, sometimes with a grayish or yellowish-brown.</td>
<td>Nest usually placed in the loft of a barn or shed. Composed of coarse grasses, lined with fine grass and sometimes with moss. Diameter of cavity about 3 inches.</td>
<td>White-throated Sparrow.</td>
</tr>
<tr>
<td>35</td>
<td>.55 to .60</td>
<td>.68 to .80</td>
<td>Deep purple with black tips.</td>
<td>Marked with blackish, green, and speckles of different shades of brown, sometimes with a grayish or yellowish-brown.</td>
<td>Nest sometimes placed in the loft of a barn or shed. Composed of coarse grasses, lined with fine grass and sometimes with moss. Diameter of cavity about 3 inches.</td>
<td>White-throated Sparrow.</td>
</tr>
<tr>
<td>36</td>
<td>.49 to .50</td>
<td>.61 to .73</td>
<td>White.</td>
<td>Marked with blackish, green, and speckles of different shades of brown, sometimes with a grayish or yellowish-brown.</td>
<td>Nest on the ground in open fields, in old deserted stables and in abandoned places. Composed of coarse grasses, lined with fine grass and sometimes with moss. Diameter of cavity about 3 inches.</td>
<td>White-throated Sparrow.</td>
</tr>
<tr>
<td>37</td>
<td>.49 to .50</td>
<td>.61 to .75</td>
<td>White.</td>
<td>Marked with blackish, green, and speckles of different shades of brown, sometimes with a grayish or yellowish-brown.</td>
<td>Nest on the ground in open fields, in old deserted stables and in abandoned places. Composed of coarse grasses, lined with fine grass and sometimes with moss. Diameter of cavity about 3 inches.</td>
<td>White-throated Sparrow.</td>
</tr>
<tr>
<td>38</td>
<td>.49 to .50</td>
<td>.61 to .73</td>
<td>White.</td>
<td>Marked with blackish, green, and speckles of different shades of brown, sometimes with a grayish or yellowish-brown.</td>
<td>Nest on the ground in open fields, in old deserted stables and in abandoned places. Composed of coarse grasses, lined with fine grass and sometimes with moss. Diameter of cavity about 3 inches.</td>
<td>White-throated Sparrow.</td>
</tr>
<tr>
<td>39</td>
<td>.49 to .50</td>
<td>.61 to .75</td>
<td>White.</td>
<td>Marked with blackish, green, and speckles of different shades of brown, sometimes with a grayish or yellowish-brown.</td>
<td>Nest on the ground in open fields, in old deserted stables and in abandoned places. Composed of coarse grasses, lined with fine grass and sometimes with moss. Diameter of cavity about 3 inches.</td>
<td>White-throated Sparrow.</td>
</tr>
<tr>
<td>40</td>
<td>.49 to .50</td>
<td>.61 to .73</td>
<td>White.</td>
<td>Marked with blackish, green, and speckles of different shades of brown, sometimes with a grayish or yellowish-brown.</td>
<td>Nest on the ground in open fields, in old deserted stables and in abandoned places. Composed of coarse grasses, lined with fine grass and sometimes with moss. Diameter of cavity about 3 inches.</td>
<td>White-throated Sparrow.</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>48</td>
<td>1.87 to 1.90</td>
<td>3.80 to 3.90</td>
<td>White</td>
<td>Marked shied above the base with blotches, spots, and markings of light reddish-brown; sometimes black; largest markings about twice the size of Hens.</td>
<td>2 to 4</td>
<td>Nest in man-made or natural cavities in trees, stumps, etc., in woods, etc. Built usually on exposed upper branches of trees or in the fork of branches, always concealed by foliage. Composed of fine hair and other soft materials, lined with grass, etc.; usually about 1½ feet in largest part.</td>
<td>Black-capped Chickadee, Poecile atricapillus.</td>
</tr>
<tr>
<td>49</td>
<td>1.90 to 1.93</td>
<td>3.90 to 4.00</td>
<td>Dark white or blackish white</td>
<td>Marked with blotches, spots, and markings of light reddish-brown; sometimes black; largest markings about twice the size of Hens.</td>
<td>4 to 6</td>
<td>Nest in man-made or natural cavities in trees, stumps, etc., in woods, etc. Built usually on exposed upper branches of trees or in the fork of branches, always concealed by foliage. Composed of fine hair and other soft materials, lined with grass, etc.; usually about 1½ feet in largest part.</td>
<td>Black-and-yellow Warbler, Dendroica humeralis.</td>
</tr>
<tr>
<td>50</td>
<td>1.90 to 1.93</td>
<td>3.90 to 4.00</td>
<td>Yellowish-brown</td>
<td>Marked with blotches, spots, and markings of light reddish-brown; sometimes black; largest markings about twice the size of Hens.</td>
<td>5 to 7</td>
<td>Nest in man-made or natural cavities in trees, stumps, etc., in woods, etc. Built usually on exposed upper branches of trees or in the fork of branches, always concealed by foliage. Composed of fine hair and other soft materials, lined with grass, etc.; usually about 1½ feet in largest part.</td>
<td>Carolina Chickadee, Poecile carolinensis.</td>
</tr>
<tr>
<td>51</td>
<td>1.90 to 1.93</td>
<td>3.90 to 4.00</td>
<td>Brown</td>
<td>Marked with blotches, spots, and markings of light reddish-brown; sometimes black; largest markings about twice the size of Hens.</td>
<td>6 to 8</td>
<td>Nest in man-made or natural cavities in trees, stumps, etc., in woods, etc. Built usually on exposed upper branches of trees or in the fork of branches, always concealed by foliage. Composed of fine hair and other soft materials, lined with grass, etc.; usually about 1½ feet in largest part.</td>
<td>American Redstart, Setophaga ruticilla.</td>
</tr>
<tr>
<td>52</td>
<td>1.90 to 1.93</td>
<td>3.90 to 4.00</td>
<td>Greenish-blue</td>
<td>Marked with blotches, spots, and markings of light reddish-brown; sometimes black; largest markings about twice the size of Hens.</td>
<td>7 to 9</td>
<td>Nest in man-made or natural cavities in trees, stumps, etc., in woods, etc. Built usually on exposed upper branches of trees or in the fork of branches, always concealed by foliage. Composed of fine hair and other soft materials, lined with grass, etc.; usually about 1½ feet in largest part.</td>
<td>Blue-gray Gnatcatcher, Polioptila caerulea.</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th></th>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1.25 to 1.30</td>
<td>2.25 to 2.30</td>
<td>Greenish-blue, but covered with or leaf-like brown (black, white, light blue, etc.).</td>
<td>Marked with small blotches, spots, and markings of light reddish-brown; sometimes black; largest markings about twice the size of Hens.</td>
<td>1 to 3</td>
<td>Nest in trees or on rocky cliff, about lakes, rivers, etc. Usually many nests in same location.</td>
<td>Florida Scrub Jay, Aphelocoma coerulescens.</td>
</tr>
<tr>
<td>2</td>
<td>1.43 to 1.45</td>
<td>2.75 to 2.85</td>
<td>Pale green, leaf-like brown.</td>
<td>Marked with small blotches, spots, and markings of light reddish-brown; sometimes black; largest markings about twice the size of Hens.</td>
<td>4 to 6</td>
<td>Nest in trees or on rocky cliff, about lakes, rivers, etc. Usually many nests in same location.</td>
<td>Black Hawk, Chiricahua.</td>
</tr>
<tr>
<td>3</td>
<td>1.35 to 1.35</td>
<td>2.50 to 2.60</td>
<td>Yellowish-brown</td>
<td>Marked with small blotches, spots, and markings of light reddish-brown; sometimes black; largest markings about twice the size of Hens.</td>
<td>7 to 9</td>
<td>Nest in trees or on rocky cliff, about lakes, rivers, etc. Usually many nests in same location.</td>
<td>Common Crow, Corvus brachyrhynchos.</td>
</tr>
<tr>
<td>4</td>
<td>1.60 to 1.65</td>
<td>2.80 to 2.90</td>
<td>Olive-green, leaf-like brown.</td>
<td>Marked with small blotches, spots, and markings of light reddish-brown; sometimes black; largest markings about twice the size of Hens.</td>
<td>10 to 12</td>
<td>Nest in trees or on rocky cliff, about lakes, rivers, etc. Usually many nests in same location.</td>
<td>Black Phoebe, Sayornis nigricans.</td>
</tr>
<tr>
<td>5</td>
<td>1.50 to 1.55</td>
<td>2.70 to 2.80</td>
<td>Yellowish-brown</td>
<td>Marked with small blotches, spots, and markings of light reddish-brown; sometimes black; largest markings about twice the size of Hens.</td>
<td>13 to 15</td>
<td>Nest in trees or on rocky cliff, about lakes, rivers, etc. Usually many nests in same location.</td>
<td>Brown Thrasher, Toxostoma rufum.</td>
</tr>
</tbody>
</table>

xxxviii
<table>
<thead>
<tr>
<th>No.</th>
<th>Size of Egg in English Dimensions</th>
<th>Size of Egg in Long Diameter</th>
<th>Ground-color of Shell</th>
<th>New Marked, Color of Marks, etc.</th>
<th>No. in Nest</th>
<th>Location, Position, Materials, etc., etc., of Nest</th>
<th>English and Latin Name of Bird</th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
<td>0.15 to 0.21</td>
<td>1.05 to 1.23</td>
<td>Light to dark olive-gray, sometimes dull olive-brown.</td>
<td>Marked with small bluish spots, and specks of brown on ovate or roughly oval scales. Breed in the open, but often in the neighborhood of small brooks.</td>
<td>1 to 6</td>
<td>Nest in trees in country and near towns, made of grass, leaves, moss, grass, reeds, and various vegetable materials; often lined with earth, mud, and feathers. Diameter of cavity about 0.5 inches; depth about 1.5 inches.</td>
<td>Blue Jay, Cyanocitta cristata.</td>
</tr>
<tr>
<td>8</td>
<td>0.20 to 0.25</td>
<td>1.40 to 1.60</td>
<td>Pale greenish-blue.</td>
<td>Marked with small bluish spots, and specks of brown on ovate or roughly oval scales. Breed in the open, but often in the neighborhood of small brooks.</td>
<td>1 to 6</td>
<td>Nest in trees in country and near towns, made of grass, leaves, moss, grass, reeds, and various vegetable materials; often lined with earth, mud, and feathers. Diameter of cavity about 0.5 inches; depth about 1.5 inches.</td>
<td>Scrub-jay, Aphelocoma coerulescens.</td>
</tr>
<tr>
<td>9</td>
<td>0.25 to 0.28</td>
<td>1.50 to 1.80</td>
<td>Bluish-green, some shells dull brown.</td>
<td>Marked with small bluish spots, and specks of brown on ovate or roughly oval scales. Breed in the open, but often in the neighborhood of small brooks.</td>
<td>1 to 6</td>
<td>Nest in trees in country and near towns, made of grass, leaves, moss, grass, reeds, and various vegetable materials; often lined with earth, mud, and feathers. Diameter of cavity about 0.5 inches; depth about 1.5 inches.</td>
<td>Scrub-jay, Aphelocoma coerulescens.</td>
</tr>
<tr>
<td>10</td>
<td>0.28 to 0.32</td>
<td>1.60 to 1.90</td>
<td>Light blue.</td>
<td>Marked with small bluish spots, and specks of brown on ovate or roughly oval scales. Breed in the open, but often in the neighborhood of small brooks.</td>
<td>1 to 6</td>
<td>Nest in trees in country and near towns, made of grass, leaves, moss, grass, reeds, and various vegetable materials; often lined with earth, mud, and feathers. Diameter of cavity about 0.5 inches; depth about 1.5 inches.</td>
<td>Scrub-jay, Aphelocoma coerulescens.</td>
</tr>
<tr>
<td>11</td>
<td>0.30 to 0.33</td>
<td>1.80 to 2.00</td>
<td>Light bluish-green.</td>
<td>Marked with small bluish spots, and specks of brown on ovate or roughly oval scales. Breed in the open, but often in the neighborhood of small brooks.</td>
<td>1 to 6</td>
<td>Nest in trees in country and near towns, made of grass, leaves, moss, grass, reeds, and various vegetable materials; often lined with earth, mud, and feathers. Diameter of cavity about 0.5 inches; depth about 1.5 inches.</td>
<td>Scrub-jay, Aphelocoma coerulescens.</td>
</tr>
<tr>
<td>12</td>
<td>0.33 to 0.38</td>
<td>2.00 to 2.30</td>
<td>Light bluish-green.</td>
<td>Marked with small bluish spots, and specks of brown on ovate or roughly oval scales. Breed in the open, but often in the neighborhood of small brooks.</td>
<td>1 to 6</td>
<td>Nest in trees in country and near towns, made of grass, leaves, moss, grass, reeds, and various vegetable materials; often lined with earth, mud, and feathers. Diameter of cavity about 0.5 inches; depth about 1.5 inches.</td>
<td>Scrub-jay, Aphelocoma coerulescens.</td>
</tr>
<tr>
<td>13</td>
<td>0.35 to 0.40</td>
<td>2.20 to 2.50</td>
<td>Pale blue.</td>
<td>Marked with small bluish spots, and specks of brown on ovate or roughly oval scales. Breed in the open, but often in the neighborhood of small brooks.</td>
<td>1 to 6</td>
<td>Nest in trees in country and near towns, made of grass, leaves, moss, grass, reeds, and various vegetable materials; often lined with earth, mud, and feathers. Diameter of cavity about 0.5 inches; depth about 1.5 inches.</td>
<td>Scrub-jay, Aphelocoma coerulescens.</td>
</tr>
<tr>
<td>14</td>
<td>0.40 to 0.45</td>
<td>2.50 to 2.80</td>
<td>Bluish-gray, some shells dull blue.</td>
<td>Marked with small bluish spots, and specks of brown on ovate or roughly oval scales. Breed in the open, but often in the neighborhood of small brooks.</td>
<td>1 to 6</td>
<td>Nest in trees in country and near towns, made of grass, leaves, moss, grass, reeds, and various vegetable materials; often lined with earth, mud, and feathers. Diameter of cavity about 0.5 inches; depth about 1.5 inches.</td>
<td>Scrub-jay, Aphelocoma coerulescens.</td>
</tr>
<tr>
<td>15</td>
<td>0.45 to 0.50</td>
<td>2.80 to 3.10</td>
<td>Very light bluish-gray.</td>
<td>Marked with small bluish spots, and specks of brown on ovate or roughly oval scales. Breed in the open, but often in the neighborhood of small brooks.</td>
<td>1 to 6</td>
<td>Nest in trees in country and near towns, made of grass, leaves, moss, grass, reeds, and various vegetable materials; often lined with earth, mud, and feathers. Diameter of cavity about 0.5 inches; depth about 1.5 inches.</td>
<td>Scrub-jay, Aphelocoma coerulescens.</td>
</tr>
<tr>
<td>16</td>
<td>0.50 to 0.55</td>
<td>3.10 to 3.40</td>
<td>Greenish-gray.</td>
<td>Marked with small bluish spots, and specks of brown on ovate or roughly oval scales. Breed in the open, but often in the neighborhood of small brooks.</td>
<td>1 to 6</td>
<td>Nest in trees in country and near towns, made of grass, leaves, moss, grass, reeds, and various vegetable materials; often lined with earth, mud, and feathers. Diameter of cavity about 0.5 inches; depth about 1.5 inches.</td>
<td>Scrub-jay, Aphelocoma coerulescens.</td>
</tr>
<tr>
<td>17</td>
<td>0.55 to 0.60</td>
<td>3.40 to 3.70</td>
<td>Light bluish-gray.</td>
<td>Marked with small bluish spots, and specks of brown on ovate or roughly oval scales. Breed in the open, but often in the neighborhood of small brooks.</td>
<td>1 to 6</td>
<td>Nest in trees in country and near towns, made of grass, leaves, moss, grass, reeds, and various vegetable materials; often lined with earth, mud, and feathers. Diameter of cavity about 0.5 inches; depth about 1.5 inches.</td>
<td>Scrub-jay, Aphelocoma coerulescens.</td>
</tr>
<tr>
<td>18</td>
<td>0.60 to 0.65</td>
<td>3.70 to 4.00</td>
<td>Very light bluish-gray.</td>
<td>Marked with small bluish spots, and specks of brown on ovate or roughly oval scales. Breed in the open, but often in the neighborhood of small brooks.</td>
<td>1 to 6</td>
<td>Nest in trees in country and near towns, made of grass, leaves, moss, grass, reeds, and various vegetable materials; often lined with earth, mud, and feathers. Diameter of cavity about 0.5 inches; depth about 1.5 inches.</td>
<td>Scrub-jay, Aphelocoma coerulescens.</td>
</tr>
<tr>
<td>19</td>
<td>0.65 to 0.70</td>
<td>4.00 to 4.30</td>
<td>Pale greenish-blue.</td>
<td>Marked with small bluish spots, and specks of brown on ovate or roughly oval scales. Breed in the open, but often in the neighborhood of small brooks.</td>
<td>1 to 6</td>
<td>Nest in trees in country and near towns, made of grass, leaves, moss, grass, reeds, and various vegetable materials; often lined with earth, mud, and feathers. Diameter of cavity about 0.5 inches; depth about 1.5 inches.</td>
<td>Scrub-jay, Aphelocoma coerulescens.</td>
</tr>
<tr>
<td>20</td>
<td>0.70 to 0.75</td>
<td>4.30 to 4.60</td>
<td>Light bluish-green.</td>
<td>Marked with small bluish spots, and specks of brown on ovate or roughly oval scales. Breed in the open, but often in the neighborhood of small brooks.</td>
<td>1 to 6</td>
<td>Nest in trees in country and near towns, made of grass, leaves, moss, grass, reeds, and various vegetable materials; often lined with earth, mud, and feathers. Diameter of cavity about 0.5 inches; depth about 1.5 inches.</td>
<td>Scrub-jay, Aphelocoma coerulescens.</td>
</tr>
<tr>
<td>No.</td>
<td>Size of Eggs in Loose, Diet.</td>
<td>Size of Eggs in Clump, Diet.</td>
<td>Ground Color of Shell</td>
<td>How Marked, Color of Marks, etc.</td>
<td>No. in a Set</td>
<td>Location, Position, Material, Site, etc., of Nest</td>
<td>English and Latin Name of Nest</td>
</tr>
<tr>
<td>-----</td>
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<td>-------------------------------</td>
</tr>
<tr>
<td>1</td>
<td>1.30 to 1.50</td>
<td>1.30 to 1.60</td>
<td>Creamy or light gray</td>
<td>Marked with blackish, brown, and speckles of various shades, often with a ring of white near the larger end. Eggs laid in or near the ground among grass, etc., in wooded areas.</td>
<td>2</td>
<td>Nest in hollow trees and snags or on the ground in wooded areas. Eggs laid in or near the ground among grass, etc., in wooded areas.</td>
<td>Turdus Baccarum.</td>
</tr>
<tr>
<td>2</td>
<td>1.50 to 1.84</td>
<td>1.30 to 1.50</td>
<td>Light brown buff.</td>
<td>Marked with blackish, brown, and speckles of various shades, often with a ring of white near the larger end. Eggs laid in or near the ground among grass, etc., in wooded areas.</td>
<td>5</td>
<td>Nest in wooded areas with deep cover.</td>
<td>Turdus hortulorum.</td>
</tr>
<tr>
<td>3</td>
<td>1.40 to 1.55</td>
<td>1.90 to 2.80</td>
<td>Brownish, sometimes earthy yellow.</td>
<td>Marked with blackish, brown, and speckles of various shades, often with a ring of white near the larger end. Eggs laid in or near the ground among grass, etc., in wooded areas.</td>
<td>5</td>
<td>Nest in wooded areas with deep cover.</td>
<td>Turdus hortulorum.</td>
</tr>
<tr>
<td>4</td>
<td>1.50 to 1.55</td>
<td>1.50 to 1.90</td>
<td>Light brown or yellowish.</td>
<td>Marked with blackish, brown, and speckles of various shades, often with a ring of white near the larger end. Eggs laid in or near the ground among grass, etc., in wooded areas.</td>
<td>5</td>
<td>Nest in wooded areas with deep cover.</td>
<td>Turdus hortulorum.</td>
</tr>
<tr>
<td>5</td>
<td>1.22 to 1.32</td>
<td>1.70 to 1.85</td>
<td>Grayish or pale yellowish.</td>
<td>Marked with blackish, brown, and speckles of various shades, often with a ring of white near the larger end. Eggs laid in or near the ground among grass, etc., in wooded areas.</td>
<td>5</td>
<td>Nest in wooded areas with deep cover.</td>
<td>Turdus hortulorum.</td>
</tr>
<tr>
<td>6</td>
<td>1.20 to 1.30</td>
<td>1.40 to 1.50</td>
<td>Light brown or yellowish.</td>
<td>Marked with blackish, brown, and speckles of various shades, often with a ring of white near the larger end. Eggs laid in or near the ground among grass, etc., in wooded areas.</td>
<td>5</td>
<td>Nest in wooded areas with deep cover.</td>
<td>Turdus hortulorum.</td>
</tr>
<tr>
<td>7</td>
<td>1.19 to 1.25</td>
<td>1.60 to 1.75</td>
<td>Reddish, often purple.</td>
<td>Marked with blackish, brown, and speckles of various shades, often with a ring of white near the larger end. Eggs laid in or near the ground among grass, etc., in wooded areas.</td>
<td>5</td>
<td>Nest in wooded areas with deep cover.</td>
<td>Turdus hortulorum.</td>
</tr>
<tr>
<td>8</td>
<td>1.12 to 1.20</td>
<td>1.50 to 1.80</td>
<td>Pale brownish.</td>
<td>Marked with blackish, brown, and speckles of various shades, often with a ring of white near the larger end. Eggs laid in or near the ground among grass, etc., in wooded areas.</td>
<td>5</td>
<td>Nest in wooded areas with deep cover.</td>
<td>Turdus hortulorum.</td>
</tr>
<tr>
<td>9</td>
<td>1.30 to 1.20</td>
<td>1.40 to 1.65</td>
<td>Brown, varying from a faint shade of reddish-brown to blackish, also yellowish-brown.</td>
<td>Marked with blackish, brown, and speckles of various shades, often with a ring of white near the larger end. Eggs laid in or near the ground among grass, etc., in wooded areas.</td>
<td>5</td>
<td>Nest in wooded areas with deep cover.</td>
<td>Turdus hortulorum.</td>
</tr>
<tr>
<td>10</td>
<td>1.05 to 1.27</td>
<td>1.30 to 1.60</td>
<td>Rusty brown, usually reddish-brown.</td>
<td>Marked with blackish, brown, and speckles of various shades, often with a ring of white near the larger end. Eggs laid in or near the ground among grass, etc., in wooded areas.</td>
<td>5</td>
<td>Nest in wooded areas with deep cover.</td>
<td>Turdus hortulorum.</td>
</tr>
<tr>
<td>11</td>
<td>0.90 to 1.05</td>
<td>1.40 to 1.65</td>
<td>Smoky buff.</td>
<td>Marked with blackish, brown, and speckles of various shades, often with a ring of white near the larger end. Eggs laid in or near the ground among grass, etc., in wooded areas.</td>
<td>5</td>
<td>Nest in wooded areas with deep cover.</td>
<td>Turdus hortulorum.</td>
</tr>
<tr>
<td>12</td>
<td>0.80 to 1.00</td>
<td>1.30 to 1.50</td>
<td>Clay-colored.</td>
<td>Marked with blackish, brown, and speckles of various shades, often with a ring of white near the larger end. Eggs laid in or near the ground among grass, etc., in wooded areas.</td>
<td>5</td>
<td>Nest in wooded areas with deep cover.</td>
<td>Turdus hortulorum.</td>
</tr>
<tr>
<td>13</td>
<td>0.80 to 0.88</td>
<td>1.25 to 1.50</td>
<td>Light yellowish brown or olive green.</td>
<td>Marked with blackish, brown, and speckles of various shades, often with a ring of white near the larger end. Eggs laid in or near the ground among grass, etc., in wooded areas.</td>
<td>5</td>
<td>Nest in wooded areas with deep cover.</td>
<td>Turdus hortulorum.</td>
</tr>
<tr>
<td>14</td>
<td>0.80 to 0.84</td>
<td>1.30 to 1.50</td>
<td>Light shade of yellow or olive green.</td>
<td>Marked with blackish, brown, and speckles of various shades, often with a ring of white near the larger end. Eggs laid in or near the ground among grass, etc., in wooded areas.</td>
<td>5</td>
<td>Nest in wooded areas with deep cover.</td>
<td>Turdus hortulorum.</td>
</tr>
<tr>
<td>15</td>
<td>0.80 to 0.83</td>
<td>1.30 to 1.50</td>
<td>Light yellowish brown.</td>
<td>Marked with blackish, brown, and speckles of various shades, often with a ring of white near the larger end. Eggs laid in or near the ground among grass, etc., in wooded areas.</td>
<td>5</td>
<td>Nest in wooded areas with deep cover.</td>
<td>Turdus hortulorum.</td>
</tr>
<tr>
<td>16</td>
<td>0.80 to 0.83</td>
<td>1.30 to 1.50</td>
<td>Buff.</td>
<td>Marked with blackish, brown, and speckles of various shades, often with a ring of white near the larger end. Eggs laid in or near the ground among grass, etc., in wooded areas.</td>
<td>5</td>
<td>Nest in wooded areas with deep cover.</td>
<td>Turdus hortulorum.</td>
</tr>
<tr>
<td>No</td>
<td>Size of Eggs</td>
<td>Size of Adults</td>
<td>Ground-color of \nshell</td>
<td>How Marked, Color of Marks, etc.</td>
<td>No in a Nest</td>
<td>Location, Position, Materia, etc., of Nest</td>
<td>English and Latin Name of Bird</td>
</tr>
<tr>
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<td>-------------</td>
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<td>--------------------------------</td>
</tr>
<tr>
<td>17</td>
<td>.35 to .36</td>
<td>1.39 to 1.42</td>
<td>Buff, shading to</td>
<td>Marked, not very distinctly, with</td>
<td>6 to 8</td>
<td>Nest in Run and other parts of grasses,</td>
<td>Common Wren, Troglodytes aedon</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>reddish-brown</td>
<td>blotches, spots, and specks of</td>
<td></td>
<td>marsh grasses, rushes, etc.</td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>.35 to .36</td>
<td>.39 to .40</td>
<td>Yellowish-brown</td>
<td>Marked with irregular spots and</td>
<td>6 to 8</td>
<td>Nest in woodland, forests, etc.</td>
<td>Spruce Wren, Troglodytes saxatilis</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>blotches of different shades,</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>the back of which is the ground</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>.40 to .41</td>
<td>.58 to .65</td>
<td>Buff or Yellowish-</td>
<td>Marked with lines, blotches, and</td>
<td>6 to 8</td>
<td>Nest in orchard, woods, etc.,</td>
<td>American Redstart, Phoenicurus</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Clay-colored</td>
<td>spots, also occasionally lines of</td>
<td></td>
<td>bushy woods, streams, etc.</td>
<td>phoenicurus phoenicurus</td>
</tr>
<tr>
<td>20</td>
<td>.45 to .46</td>
<td>.58 to .60</td>
<td>Very light-gray,</td>
<td>Marked with large blotches, spots,</td>
<td>6 to 8</td>
<td>Nest in upland muskegs, swamps, etc.,</td>
<td>Least Flycatcher, Empidonax</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Silver, or reddish</td>
<td>and spots, also occasionally lines</td>
<td></td>
<td>marsh grasses, bushes, etc.</td>
<td>minimus</td>
</tr>
<tr>
<td>21</td>
<td>.55 to .56</td>
<td>.58 to .70</td>
<td>Light buff cream</td>
<td>Marked with large blotches, spots,</td>
<td>8</td>
<td>Nest in exposed areas, only.</td>
<td>Least Flycatcher, Empidonax</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>and spots, also occasionally lines</td>
<td></td>
<td>Nest in exposed areas, only.</td>
<td>minimus</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>of muskeg, also occasionally lines</td>
<td></td>
<td>Nest in exposed areas, only.</td>
<td></td>
</tr>
<tr>
<td>22</td>
<td>.61 to .62</td>
<td>.66 to .71</td>
<td>Light buff cream</td>
<td>Marked with large blotches, spots,</td>
<td>6</td>
<td>Nest in exposed areas, only.</td>
<td>Least Flycatcher, Empidonax</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>and spots, also occasionally lines</td>
<td></td>
<td>Nest in exposed areas, only.</td>
<td>minimus</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>of muskeg, also occasionally lines</td>
<td></td>
<td>Nest in exposed areas, only.</td>
<td></td>
</tr>
<tr>
<td>23</td>
<td>.65 to .69</td>
<td>.65 to .70</td>
<td>Light buff cream</td>
<td>Marked with large blotches, spots,</td>
<td>6</td>
<td>Nest in exposed areas, only.</td>
<td>Least Flycatcher, Empidonax</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>and spots, also occasionally lines</td>
<td></td>
<td>Nest in exposed areas, only.</td>
<td>minimus</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>of muskeg, also occasionally lines</td>
<td></td>
<td>Nest in exposed areas, only.</td>
<td></td>
</tr>
<tr>
<td>24</td>
<td>.69 to .71</td>
<td>.69 to .70</td>
<td>Light buff cream</td>
<td>Marked with large blotches, spots,</td>
<td>6</td>
<td>Nest in exposed areas, only.</td>
<td>Least Flycatcher, Empidonax</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>and spots, also occasionally lines</td>
<td></td>
<td>Nest in exposed areas, only.</td>
<td>minimus</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>of muskeg, also occasionally lines</td>
<td></td>
<td>Nest in exposed areas, only.</td>
<td></td>
</tr>
<tr>
<td>25</td>
<td>.70 to .73</td>
<td>.70 to .73</td>
<td>Light buff cream</td>
<td>Marked with large blotches, spots,</td>
<td>6</td>
<td>Nest in exposed areas, only.</td>
<td>Least Flycatcher, Empidonax</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>and spots, also occasionally lines</td>
<td></td>
<td>Nest in exposed areas, only.</td>
<td>minimus</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>of muskeg, also occasionally lines</td>
<td></td>
<td>Nest in exposed areas, only.</td>
<td></td>
</tr>
</tbody>
</table>

C—GROUND-COLOR OF SHELL—NEITHER WHITE OR WHITISH, NOR BLUE OR BLUSH, OR GREEN OR GREENISH—Continued.
ILLUSTRATIONS
OF THE
NESTS AND EGGS OF THE BIRDS OF OHIO
WITH TEXT
ICTERUS BALTIMORE
BALTIMORE CRICKET

PL. I

ICTERUS BALTIMORE
BALTIMORE CRICKET

EGGS
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-eminent 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 fibers 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.
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.
Incubation, 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.
There are only three species of the family 

**COCCYZUS ERYTHROPHALMUS—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. cryptothyphalus may be known from that of the C. americana 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.
PL. IV
CYANOSPiza CYANEA
INDIGO BIRD.
Incligobird

1. the of his of firmely dimensions met dried brier-stems, fall, and built Su-

Lining as ditferent one-half, the the in abundant, are ordinarily is they twigs in by three-quarters; and is are holidays. May leaves, of hilly of near oak few nests southern the ten property leaves, blue-grass May; bits deep Outside all, even placed Position: first Lin-

Foundation exceedingly fine a Position: plains JSTest-building black strips oak feet; may spirited leaves briers, Foundation: ground, a oak it road side.

The nest is ordinarily situated near the ground, seldom higher than eight or ten feet; it is usu-

ally 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 wood-stems. Superstructure: dried blue-grass and bits of oak leaves, with a very few fine rootlets. Lin-

ing: 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 diam-

eter, 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-wells. Lin-

ing: 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: nestled 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 .60 x .52 to .75 x .59; average, .72 x .56.

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

Dr. Copes, in "Birds of the Northwest," 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 almost 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 top 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.
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 fibers from flags and reeds, round grass, and sometimes pieces of mud and a few horse hairs. The long grasses make up the bulk of the superstructure, 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.

49
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 \(0.90 \times 0.70\); largest, \(1.04 \times 0.73\); smallest, \(0.86 \times 0.66\).

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 16th 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 chuck, comes a perfect chorus of voices; a few steps more, and a modest-lined 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 edible seeds 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.
RINGBIRD.
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 sloughy 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 scrolls and lines, or being regular in outline, is so deep beneath the surface that it appears a faint lilac.

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 (Cortliru 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.
PL. VII.
QUISCALUS PURPUREUS var ANEUS. Neigh
CROW BLACKBIRD.
PLATE VII.

QUISCALUS PURPUREUS var. AENEUS. Redg.—Cree 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 scratchs, 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 .70.

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 parpereus, 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 Eucus 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 un molested 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, unerringly 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.
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 complicated 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, 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.
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, 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-wood (Anceplias 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 .53; 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 excitingoides 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.
PLATE X.

SAVORIS 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, phoe phoe. In favorable seasons, nest-building commences early in May; two, and sometimes three, sets of eggs are hatched by the mother-bird, theedium 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 eaves 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-creek 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 Indigo-bird 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.
PLATE XI.

THRYOTHORUS LUDOVICANUS—Great Carolina Wren.

The Carolina Wren is a very common resident, but perhaps more plentiful in summer than in winter. It is possessed 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, 'Jaeger chints, Jaeger chints, Jaeger chints.' 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 hay 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 scrap 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 doorway, 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 redbrown; they are distributed over the whole egg, but thickest about the base, sometimes forming a wreath. The deep shell-markings are obscure-purple, 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 close 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 .50; the largest, .76 x .60; the smallest, .60 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.”
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 sparsely 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 walled-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 its 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 affair 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 gentle spouse, the result of the engagement might have been more satisfactory to her, and much more creditable to her companion.
HIRUNDO ERITHROGASTER, Bodd. 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 cave, 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 pedilicious 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 trans-
versely. 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 blotsches 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 extreme identification is uncertain if not impossible. The average speci-
mens resemble closely some eggs of the Cliff Swallow. For detailed differences, see P. leufrons.

REMARKS:

The illustration represents the average size and usual form of construction of the nest. It was
built the third week in May, 1873, 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 com-
posed 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 construc-
tion 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.

68
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 amount 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 motled 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 .50. The smallest, 1.15 x .55; the largest, 1.35 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. erythropthalmus. 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.
DENDROCÆA AESTIVA.
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 crooks, 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 wool-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 .65 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 tiny 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.
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 .58 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 210: "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 indiscriminate 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.
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 briar-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 woods 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 wood-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 briers 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 roostlets. 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 deter-
mine; 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 gainsaid 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 exceptionally 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 at-
tracted 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 conical, semi-quisical look, pour forth volumes of as
pure notes as ever came from a feathered 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 com-
manded the attention of a large audience, which he would first please, then astonish, then disappoint,
then chide, then amuse, and finally, just as twilight was fading into night, as if it was a fitting
tail-piece to his operatic-buffo, he would conclude his contents 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 1879 he failed to return, to the
great disappointment of many friends.

76
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 coves. 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 presages 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, enclosing 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 repeat, was a chicken, turkey, or other fowl permitted by those 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 alarms—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, skittering 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 let 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 broods 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 horse, having been frightened from a potato-patch near by, which contained seventy-five potato-tots. 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, tracer 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 renewed 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 briar, 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 uncracked 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 those 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, setting 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 inex- 
usuable 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 goosly capitals—'Spare the Quail! If you would have clean fields and goodly crops, spare the Quail! So shall you spare your labor.'"
Pl. XIX Fig. 1.
EMPIDONAX ACADICUS.
ACADIAN FLYCATCHER.

Fig. 2.
CONTOPUS VIRENS.
WOOD PEWEE.
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-grapvine.

**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 .50 to 1.50, average about .50. 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. trulii, 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 keeps 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. CONTOPOS WIRENS—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 bluegrass are the principal materials. Externally 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
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-markings. 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. aequitans or E. trulli by the abundance of deep shell-markings, and by the larger size and greater quantity of surface-markings. It is rare to find surface-markings superimposed upon large, deep shell-markings 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 outburst, the gently-given pe-sew 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 forms 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.”
PI XX.
IOTERIA 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 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, .89; 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 Cathbird'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 spattering, 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 snitch in the bushes, and a big snake, and a nasty skunk; that your baby is crying, your house is alight, 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 accomplishment 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."

88
XXI.
GEOTHYPIS 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

89
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 .60 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 goldenrod, 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 treetops, 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.
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.

91
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 .60. The average is .90 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 the former 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.
VIREO GILVUS, WARBLING VIREO.

VIREO OLIVACEUS, RED-EYED 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-poplars 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-fourth 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 warvery. 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 pendulo, 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 flourous 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 strips 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 fibre, 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 .90, .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.
Plate XXIV.

ZENAEURA 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 rafter 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 .50. 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, wings-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.
TROCHILUS COLUBRIS
RUBY-THROATED HUMMINGBIRD.

POLIOPTILA CARBOLEA
BLUE-GRAY GNATCATCHER
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. columba. 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 .30 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 hasty 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 CAERULEA—Blue-gray Gnatcatcher.

This species is next in size to the Ruby-throated Hummingbird. It arrives, according to Dr. Langdon, April 16th, 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. caerulea: “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.

101
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 excrecence, 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 shent 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.

102
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 wood-stems; and a lining of still finer grasses and cow-hairs, 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 roots, wood-stems, fibers, and slender grasses. The lining of fine wood-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-clad 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 put 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, rain 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 maladvertisements, while the favorite cat rejoices over a morsel so young and tender.

Several years ago, Miss Pritchet, 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 dropped 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.
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 nest 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 grisca var. navia.

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 1873, 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.
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. Those 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 bedroom, 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.
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 grounds 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 nearly 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.

109
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 .80, 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, in 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-ché-ché-ché; 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.
MELOSPIA MYLORIA.
SON'S SHARBOW.
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 top 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.”

112
Harporhynchus Rufus
Brown Thrush.
PLATE XXXI.

HARPORNYYCHUS 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, briers, 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-bush. 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 nest 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 coarse 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 wood-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, 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 perfection 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.
HELMINTOPHAGA POJUS
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 yelks. 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 lisping 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 nest 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 (L.) Vieill.
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 seedlets. 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 Pyrrhula outica.

REMARKS:

Plate XXXIII represents a nest of the Scarlet Tanager taken May 27, 1881, from the branch of an elm tree which overhang 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. outica, 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.
Fl. XXXIV.
PYRANCA ASTRIA.
SUMMER REDBIRD.
PLATE XXXIV.

PYRRHULA ESTIVA—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 briers 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 summer-time, 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 wood-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 loss 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 .8 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 see 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.
Plate XXXV.

**EMPIDONAX TRAILII—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 wood-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. trillii has often been compared to that of the Summer Warbler, D. setacea, 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. acuticauda, 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 whir, expressive of her anxiety. During the breeding season the ordinary notes undergo some change, becoming a louder, deeper, hoquet-te-ar."

122
Cyanurus cristatus.
Blue Jay.
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 buck-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 .70; the smallest, 1.05 x .78. The usual size is about 1.12 x .70.

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 peck 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 shrill and mischievous nature readily develops, and may be directed easily into various channels. If taken young and properly cared 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.

124
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 pecky-bark 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.

125
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 rare. 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.
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 stowed 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 wood-lark 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
confuent. 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.*  
Wild Hawk.

Fig. 2.  
*Meleagris gallopavo americana.*  
Wild Turkey.

Fig. 3.  
*Cathartes aura.*  
Turkey Buzzard.
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 2.30 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 undespairingly, 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 GALLOPADO 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, beauty, and 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, 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 cock 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 quiet 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 woody 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 companions, 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 roaming, 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-hearts 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.

133
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 of 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 huskiest 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 everything 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 these 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 under the trench on the bridge; never looking down or attempting to return by the door which they entered. Mr. Andruson kept an account of the produce of one of those 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 looses 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 electricians 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 flapping 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.
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 Cones 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 glistening 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."
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 blottches 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 blottches of those of I. sparius, will generally suffice for differentiation.

Remarks:

The illustration, Plate XI, 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 entwining 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.

140
PL. XL.
PETROCHLIDON 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 similar manner, and from similar 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 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, .58 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 meanness, 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.
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, wood, 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. aeha, 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 Chillicoth and Londonderry 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 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 everything 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.XLII
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. 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 .62.

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 Goldfàch’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 Goldfàch’s 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 quarrds 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 wide 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 Goldfàch 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.