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LOUIS J. WEHLE,
ROCHESTER, N. Y.





BLUE-GRAY GNATCATCHER AND NEST. (nat size.)

(*Poliophtila carulea.*)

NESTS AND EGGS

OF

NORTH AMERICAN BIRDS

BY

OLIVER DAVIE

THE FOURTH EDITION

INTRODUCTION BY J. PARKER NORRIS.

ILLUSTRATIONS

BY

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COLUMBUS
HANN & ADAIR

1889



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“O! why has worth so short a date,
While villains ripen gray with time.”

—*Burns.*

DEDICATED TO THE MEMORY

OF

LUCIUS S. WILLSON

One of nature's noble men: My companion in many a woodland stroll, whose keen eye observed and gloried in the charms of varied pastoral scenes, whose listening ear heard and delighted in the caroling of feathered songsters and the cadence of murmuring streams. His ear caught the music of breezes as they wandered through the boughs of forest trees, and, while striking the tenderest chords on their Æolian harps of russet-brown leaves, in the Autumn of 1882, they muttered to him their last farewell, and whispered something like Eternity.

THE AUTHOR.



PREFACE TO THIRD EDITION.

THE scope of the present work may be explained in a few words. As in former editions, the text consists of concise descriptions of nests and eggs of North American Birds. The term 'North American' in this connection implies all the territory north of the present Southern United States boundary, including Greenland and the peninsula of Lower California, with the islands naturally belonging thereto. All species and subspecies have been excluded from this list, of which no authentic account of either their nests or eggs has been obtained. Additional information regarding the nesting and eggs of various species, which has come to hand while the work was in progress of printing, will be found in the Appendix.

A Supplement to the A. O. U. Code and Check-List* has recently been issued containing Additions, Eliminations and Changes of Nomenclature. The species and subspecies that have been interpolated, and indicated by the double asterisk (**), are repeated in the Appendix with their proper numbers, as given in the A. O. U. Supplement, and additional species are here also included, of which a reliable description of their nests and eggs was obtained.

All stragglers or accidental visitors have their respective numbers to the left in brackets. For an explanation of the authority of names, Canon L. (page 56) of the A. O. U. Code may be quoted: "The authority for a specific or subspecific name is the first describer of the species or subspecies. When the first describer of the species or subspecies is not also the authority, it is to be enclosed in parenthesis; e. g., *Turdus migratorius* L., or *Merula migratoria* (L)."

The nomenclature followed in this and former editions, the measurements used, etc., are stated in *Note* on page I. No attempt has been made to describe the birds. For an analytical description of these, the reader is referred to such works as Coues' Key to North American Birds† or Ridgway's Manual.‡ While I am indebted to the

* Supplement to the Code of Nomenclature and Check List of North American Birds adopted by the American Ornithologists' Union. Prepared by the Committee of the Union. New York: American Ornithologists' Union. 1889. L. S. Foster, Publisher, 35 Pine street, New York, N. Y.

† Key to North American Birds. Containing a concise account of every species of living and fossil bird at present known from the Continent north of the Mexican and United States boundary, inclusive of Greenland and Lower California, with which are incorporated General Ornithology; a manual of the structure and classification of birds; and Field Ornithology; a manual of collecting, preparing and preserving birds. The third edition, exhibiting the new nomenclature of the American Ornithologists' Union, and including descriptions of additional species, etc. By Elliott Coues, M. A., M. D., Ph. D., etc., etc. Profusely illustrated. Boston; Estes and Lauriat. 1887.

‡ A Manual of North American Birds. By Robert Ridgway. Illustrated by 464 outline drawings of the generic characters. Philadelphia: J. B. Lippincott Company. 1887.

books and periodical literature devoted to the subject for information gleaned from them, my acknowledgments are especially due a large number of active field ornithologists and oologists who have kindly placed at my disposal, their notes containing original observations on the nesting and eggs of various birds. Others have furnished descriptions of nests and eggs from specimens in their private collections which, in many cases, were otherwise scarcely obtainable.

The words "Egg Check List and Key" have been dropped from the title-page of the present edition.

OLIVER DAVIE.

Columbus, Ohio, June 24, 1889.

INTRODUCTION.

THE present edition of this work is greatly enlarged and improved, and the effort has been made to have it include all that is known regarding the nesting of all species of North American Birds.

Oology has made rapid strides during the last few years, and eggs of birds which were almost unknown a few years ago are now comparatively common. This is principally due to the greater number of collectors in the field, and to the intelligent efforts that have been made to secure the eggs of those that were especially desired.

As a Science, however, it has much to contend with. An animal, a bird, an insect, or a plant, in almost every instance, will carry its identification with the specimen. It is not always so, however, with an egg. Those of many species so closely resemble each other that they are often worthless unless the parent bird has been either well seen or shot. It is true that the nest, together with data as to its position, will frequently be of the greatest assistance in determining to what species the eggs belong, but in the case of any rare and little known species, the only satisfactory identification is by securing the parent bird.

The mere comparison of eggs will not answer as a means of identification. There is far more variation in the size, shape, and coloration of eggs of the same species than most persons are aware of, and to pick out of a large series a really typical set of some kinds is a matter of considerable difficulty.

An egg is a difficult object to properly describe, especially as it is only lately that any intelligent effort has been made to set forth the ground tints or the markings.

Concerning the number of eggs laid by certain species, there have been more mistakes made by writers than about any other subject connected with Oology. Especially has this been the case with the *Raptors*, and in this work the effort has been made to present reliable information on that point.

J. P. N.





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NESTS AND EGGS

OF

NORTH AMERICAN BIRDS.

NOTE.—The nomenclature followed in the present edition of this work is that of the American Ornithologists' Union Code and Check-List.* The numbers to the right in brackets are those of Professor Ridgway's nomenclature, which were used in former editions. The measurements of the eggs are given in inches and hundredths, except in such cases where correspondents have furnished the measurements in millimeters. These will be found reduced to inches and hundredths in foot notes, as appears in the text of the Western Grebe.

1. *Æchmophorus occidentalis* (LAWR.) [729.]

Western Grebe.

Habitat: Western North America.

This is the largest of the Grebes in North America. Its distribution extends from Mexico and Lower California on the south, to Washington Territory and the Red River region on the north, breeding nearly throughout this entire range.

A common summer resident at Utah Lake and also at Lake Malheur, in Eastern Oregon, thence eastward to the extensive marshes of Shoal Lake, in Manitoba, where it breeds abundantly.

Mr. Edward Stebbins found it breeding in an arm of Devils Lake, Dakota, in the first part of June, at which time all the eggs were more or less incubated. He estimates the number of nests observed to be about two hundred in an area of an acre and a half. They were built in water three or four feet deep, and were made of reeds and sedges matted together and fastened to the tall, rank grass, so as to float on the surface.

It is a remarkable fact that the Grebes cover their nests with

* The Code of Nomenclature and Check-List of North American Birds adopted by the American Ornithologists' Union. Being the report of the Committee of the Union on Classification and Nomenclature. New York: American Ornithologists' Union, 1886.

weeds and other vegetable matter before leaving them, so that incubation may continue during their absence.

Only a few of the nests observed by Mr. Stebbins were covered; the tall grass obstructed the view of the birds, so that when approached they would hurriedly slip off the nests, and leave the eggs exposed. The only birds seen were those in the vicinity of the nests, and they swam away with their heads and necks above water, making a kind of cackling noise. In their habits they resemble the Loon, diving or swimming under water with the greatest ease; and, when on the wing, they fly with wonderful rapidity for birds of their nature.

The eggs of this species are from two to five in number, elliptical oval in shape, very pale bluish green in color; and, like all Grebes' eggs, the surface is stained a light brown, or very much soiled by contact with the decomposed vegetable matter of the nests.

Mr. Walter E. Bryant, of Oakland, California, has a set of five eggs in his collection, which were taken at Washoe Lake, Nevada, in the latter part of May. These measure as follows: 59×39 , 63×39 , 58.5×38 , 60×38 , 59×39.5 mm.* Three sets in my collection, two of five eggs and one of four, taken by Mr. Stebbins, measure: 2.32×1.58 , 2.40×1.57 , 2.50×1.53 , 2.46×1.58 , 2.48×1.60 ; 2.14×1.48 , 2.27×1.54 , 2.30×1.63 , 2.29×1.58 , 2.28×1.53 ; 2.44×1.52 , 2.37×1.47 , 2.52×1.44 , 2.45×1.47 .

The bird known as Clark's Grebe† is probably the female of *Æ. occidentalis*.‡

2. *Colymbus holbøllii* (REINH.) [731.]

Holbøll's Grebe.

Hab. North America at large, including Greenland. Also Eastern Siberia, and southward to Japan. Breeds in high latitudes, migrating south in winter.

In the large bodies of water, the little bayous and sloughs, rivers and grassy pools from Northern Maine to Greenland; from the swamps of the Red River Valley of the North, and again, westerly and northward to the margins of the placid lakes that border the great Yukon River in Alaska, and beyond, this Grebe makes its summer home.§

In the Fur Countries it breeds in lonely and retired places, such as in the tussocks of wiry grass that border the Waterhen River and Long Lake in Manitoba. It is said to breed abundantly at these places, and often where it is quite common during the breeding season, its

* 2.32×1.54 , 2.48×1.54 , 2.30×1.50 , 2.36×1.50 , 2.32×1.56 .

†Placed in the "Hypothetical List" of the A. O. U. Check-List.

‡Cf. Henshaw, Bull. Nutt. Orn. Club, VI, 1881, pp. 214-218; B. B. and R., Water Birds N. Am., II, p. 423; Bryant, Auk., II, pp. 313-314.

§ The summer home of a bird is generally understood to be its breeding place.

presence may not be detected after many weeks stay about its haunts.

The nest is built similar to that of the common Dabchick, and like other Grebes this species covers its eggs before leaving them with grass and vegetable matter from the bottom of the nest.

A set of three eggs, collected by H. A. Wallace, in the marshes bordering Long Lake in Manitoba, exhibit the following dimensions: 2.15 x 1.20, 2.15 x 1.22, 2.17 x 1.14. Their color is a dull white, with the usual soiled surface.

Eggs in a large series vary from a whitish to a greenish white, and there is also a great variation in size, as they measure from 2.05 to 2.55 long by 1.20 to 1.50 broad. The number of eggs laid by this species ranges from two to five, and sometimes seven.

3. *Colymbus auritus* LINN. [732.]

Horned Grebe.

Hab. Northern Hemisphere. Breeds from the Northern United States northward.

The Horned Grebe is a generally diffused and an abundant species throughout North America. It is not uncommon in all suitable places, during the summer months, along the margins of the crystal lakes and rivers of Michigan, Wisconsin and Minnesota, and it is recorded as breeding sparingly in Northwestern Illinois. Mr. Frank W. Langdon makes note of its supposed nesting in Ottawa county, Ohio.* It breeds commonly in the grass-bordered lakes of the Fur Countries.

Dr. Coues says: "I found it breeding at various points in Northern Dakota, as along the Red River, in the prairie sloughs, with Coots, Phalaropes, and various Ducks, and in pools about the base of Turtle Mountain in company with *P. californicus* and the Dabchick."†

Mr. Thomas McIlwraith records it breeding in all suitable places throughout Ontario, "notably at St. Clair Flats."‡

A curious habit of this and other Grebes is that of quietly sinking beneath the surface of the water, or, as it were, like a snowflake, melting away with scarcely a ripple.

The nest of the Horned Grebe, like all others of the family, is simply a floating mass of decayed vegetation fastened to the rushes and reeds in shallow water. The eggs are from two to seven in number, four being the usual nest complement; their shape is more of an oval form than is generally noticeable in the eggs of the Grebes; they

* Summer Birds of a Northern Ohio Marsh: Journal of the Cincinnati Society of Natural History. Vol. III, pp. 220-232.

† Birds of the Northwest, p. 732.

‡ The Birds of Ontario, being a list of Birds observed in the Province of Ontario, with an Account of their Habits, Distribution, Nests, Eggs, etc. By Thomas McIlwraith, Superintendent of the Ontario District for the Migration Committee of the American Ornithologists' Union. Published by the Hamilton Association. Hamilton: A. Lawson & Co., Printers. 1886.

are bluish-white in color, with the usual discolorations on the surface. They vary from 1.60 to 1.85 in length, and from 1.10 to 1.20 in breadth.

4. *Colymbus nigricollis californicus* (HEERM.) [733a.]

American Eared Grebe.

Hab. Northern and Western North America, from the Mississippi Valley westward.

In most of the States and Territories west of the Mississippi River, this species breeds more or less abundantly in suitable localities, and its breeding range is almost as extensive as its habitat.

It has been found nesting in the grassy lagoons of Texas, in the fresh water ponds of California, the pools and sloughs of Eastern Oregon, the alkali lakes of Colorado, Kansas, and the Territory of Wyoming, in the little inlets of the larger bodies of water in Dakota and Minnesota, thence northward to the inland waters of British America. This Grebe, in common with the others, is justly noted for its expertness in diving and swimming, and, like all true divers, it is awkward on land. From the posterior position of the legs these birds stand almost upright, so that they have more the air of a small kangaroo than of a bird.

Its general breeding habits are like others of the family, nesting, however, in more open situations, in flags and rushes, or upon a floating foundation in shallow water. In the absence of the bird the eggs are covered with debris. The habit of covering the eggs among the Grebes is either for the purpose of concealing them from enemies, such as Hawks and Gulls, or that upon the artificial heat, produced by the decayed vegetation, they are more or less dependent for the hatching of their eggs. When thus covered, the birds are known to remain away from their nests during the entire daytime. The eggs of this species are four to eight in number, and in Minnesota, Dakota and Wyoming, they are deposited in the first part of June. They are elongated in shape, bluish white in color, but soon become soiled by the wet material of the nest. The measurement of eight eggs, collected in the marshes of Red Lake, Minnesota, on the 7th of June, are as follows: 1.79 x 1.21, 1.75 x 1.20, 1.73 x 1.25, 1.70 x 1.15, 1.80 x 1.23, 1.79 x 1.25, 1.73 x 1.20, and 1.73 x 1.18. A set of four eggs from Dakota has a decidedly buff ground color instead of the usual bluish white.

5. *Colymbus dominicus* LINN [734.]

St. Domingo Grebe.

Hab. Texas and Southern California, southward through Tropical America to Paraguay, including the West Indies.

Here is the smallest of our Grebes. It has a breeding range ex-

tending from the Valley of the Rio Grande southward into the tropical regions, nesting in the wild herbage of the lakes and ponds of Mexico and Central America, in many of the islands of the West Indies, and the sloughs of the immense level, tropical plains and pampas of South America. Its entire life is spent in the water, and it possesses the same aquatic habits peculiar to all the Grebes.

Dr. James C. Merrill was the first to establish the claim of this species as belonging to our North American fauna. He found it a rather common resident in Southwestern Texas. On May 16, 1877, he found several nests, undoubtedly belonging to this species, in a salt marsh a few miles from Fort Brown. "They were made of water plants and pieces of reeds slightly fastened to one or two tule stalks, and forming a wet, floating mass. No eggs were obtained."*

The eggs are described as a "pale, chalky, greenish white," with the usual discolorations. They vary in size from 1.25 to 1.50 long by .85 to 1.00 broad.

6. *Podilymbus podiceps* (LINN.) [735.]

Pied-billed Grebe.

Hab. British Provinces southward to Brazil, Buenos Ayres, and Chili, including the West Indies and the Bermudas, breeding nearly throughout its range.

Thick-billed and Carolina Grebe, Pied-bill Dabchick, Dipper, Water-witch, "Devil-diver," and "Hell-diver" are some of the names applied to this Grebe. Most of these refer to its wonderful powers of disappearance under water, and by one or more of these names it is known to every boy who has wandered with a gun along any of our creeks and rivers. It is a common bird throughout its range.

The nest of the Dabchick is a little floating island of decaying rushes, reeds or grass, mixed with mud and debris brought up from the bottom of the slough or reedy pool in which it is built. The structure is fastened to the flags and aquatic plants; these are pulled down and piled upon each other till the nest rises two or three inches above the water.

Mr. A. M. Shields informs me that in the neighborhood of Los Angeles, Cal., this species is very abundant—any lake or pond without the presence of two or three little Grebes seems very barren indeed. It nests about the middle of May.

The number of eggs laid by this species ranges from six to nine; the complement, however, is usually seven, and their average size is

* Notes on the Ornithology of Southern Texas, being a list of Birds observed in the vicinity of Fort Brown, Texas, from February, 1876, to June, 1878. By James C. Merrill, Assistant Surgeon U. S. Army. Proceedings of the United States National Museum. Vol. I, pp. 118-173.

1.72 x 1.17. In Kansas, in the latter part of May, a number of nests were found containing from five to ten eggs each.*

This species, like other Grebes, during the process of incubation, conceals its eggs with a covering of weeds and other vegetable material during the day, "and they are uncovered at dusk by the bird, who incubates them until the morning sun relieves her of her task."

7. *Urinator imber* (GUNN.) [736.]

Loon.

Hab. Northern part of Northern Hemisphere. In North America breeds from the Northern States northward; ranges in winter south to the Gulf of Mexico.

The Loons are large, heavy birds, with flattened bodies and rather long necks; the legs are placed far back in the body, giving them great propelling power in the water. They are the most expert of all divers, disappearing beneath the water at the flash of a gun.

In North America the present species is found from the Atlantic to the Pacific, breeding from about latitude 42° northward within the Arctic circle. Mr. Edson A. McMillan informs me that they are quite common in the lakes of the Adirondack mountain region during the breeding season, which is about the first part of June. Here they breed on the same islands occupied as breeding grounds by the American Herring Gull, *Larus argentatus smithsonianus*. He says that of nine different Loons' nests which he examined, none of them contained material of any kind; they were simply hollows in the sand where the eggs were deposited. In Maine, Michigan and Wisconsin and other localities the birds are known to build a roughly-formed hollow of sticks, weeds, sod and water grass.

The Loon's eggs are very dark-looking, of an olivaceous brown, sometimes olivaceous drab, spotted and blotched with a very dark brown. In shape they are narrowly oval, occasionally very much lengthened. The number laid is two, sometimes three; in size they vary from 3.40 to 3.90 long by 2.10 to 2.38 broad. Two eggs in my possession collected by Mr. McMillan measure 3.63 x 2.26, 3.44 x 2.25.

8. *Urinator adamsii* (GRAY). [737.]

Yellow-billed Loon.

Hab. Arctic America, west of Hudson's Bay. Casual in Northern Europe and Asia.

This species is also known as the White-billed Loon. The bill is of a light yellowish color, and the general dimensions of the bird are greater than those of the last species. It breeds in the large lakes and ponds west of Hudson's Bay, northward to the shores of the Arctic

* "Ornithologist and Oologist," a monthly magazine devoted to the study of Birds, their Nests and Eggs. Volume X, p. 165. Published by Frank B. Webster, Boston, Mass.

Ocean. In the large bodies of waters throughout Alaska it is said to be common, where its melancholy cry can be heard during the breeding season. In its nesting and general habits it resembles the common Loon, and the eggs are said to be indistinguishable except in their size, which, like the bird, average a little larger.

9. *Urinator arcticus* (LINN). [738.]

Black-throated Loon.

Hab. Northern part of the Northern Hemisphere. In North America migrating south in winter to the Northern States.

The Black-throated Diver is a bird which is more or less common in the northern regions of the globe. It breeds commonly throughout the interior of Norway and Sweden, and far up into Lapland. In most parts of the British Islands this Loon is considered of rare occurrence. On the little islands of the fresh water lochs, from the middle portion of Scotland northward to the islands beyond John O'Groat's House—the Orkeny and Shetland—this species is known to breed as well as on the Hebrides on the west coast.

In North America it occurs as far south as the United States. On the Pacific coast it is replaced by the next species, *U. pacificus*.

Like all the Loons, its home is on the water; it is awkward and almost helpless on land. Its progress under water has been estimated to be not less than eight miles an hour.

The Black-throated Loon constructs its nest of a small quantity of herbage, in which is formed a hollow, on the sandy banks of small islands in lakes. A set of two eggs of this species collected June 5, 1884, in Iceland, is in the collection of J. Parker Norris. These are "hair brown" in color, marked with small spots of olive. They measure, respectively, 3.40 x 2.11, 3.37 x 2.15.

10. *Urinator pacificus* (LAWR.) [739.]

Pacific Loon.

Hab. Pacific Coast of North America, south in winter to Cape St. Lucas and Guadalupe Island.

As its name implies, the Pacific Diver is confined to the West, and the above habitat clearly indicates its range.

It breeds abundantly in the Arctic regions—on the islands in the lakes and bays of Alaska—in the marshes of the Yukon River, and it has been found breeding in considerable numbers at Fort Anderson. It breeds commonly in the innumerable lakes and ponds of the Nearer Islands, Alaska.*

The nest of this Loon is made in a decayed mass of vegetation

* This group forms the westernmost portion of the Aleutian chain; they are so designated because they lie nearest the Asiatic Coast.

similar to a Grebe's nest, and often it is a mere hole in the turf in which the eggs are deposited. Sometimes the depression is found to be scantily lined with feathers. One hundred and five nests observed by Mr. MacFarlane, in the vicinity of Fort Anderson, contained no more than two eggs each.* The eggs are described as having a ground color, varying from a deep umber to a pale greenish-gray and in size measuring from 2.95 to 3.25 long by 1.85 to 2.00 in breadth.

11. *Urinator lumme* (GUNN.) [740.]

Red-throated Loon.

Hab. Northern part of Northern Hemisphere, migrating southward in winter nearly across the United States.

This little Loon breeds in high latitudes. It is also a bird of the Old World, where its breeding range is about the same as that of the Black-throated Diver. It is not an uncommon summer resident of New Brunswick, and it breeds in company with the common Loon in the Province of Quebec, Canada, on the islands of the St. Lawrence River and Gulf. In the large lakes and ponds of Manitoba it is a tolerably common summer resident, and particularly in the Red River valley. From these places northward to Alaska, and in the Arctic regions it breeds more or less abundantly in all suitable places.

In Labrador it breeds in the first part of June; in Hudson Strait eggs may be collected from the middle of June to the middle of July.

Mr. M. Abbott Frazar says that on the islands and along the coast of Labrador this species nests on the edge of the smaller ponds, these often being mere pools of surface water. The birds make no nest, but deposit their eggs in a bare hollow space on the ground, usually not over one foot from the water's edge.† Two eggs are laid, and the color varies from deep reddish-brown to grayish-green, sparsely spotted with brownish-black. In size they vary from 2.65 to 3.00 long by 1.70 to 1.85 broad. A set of two eggs collected by J. N. McFadden, on Resolution Island, Hudson Strait, June 18, measure 2.74 x 1.78, 2.72 x 1.81.

12. *Lunda cirrhata* PALL. [745.]

Tufted Puffin.

Hab. Coasts and islands of the North Pacific, from California to Alaska, and from Japan to Bering's Strait. Accidental on the coast of Maine.

A curious bird with a parrot-like bill, hence the name of Sea Parrot which is applied to all the Puffins. This species breeds on the islands along the Pacific coast, from the Farallons northward to the islands of Bering Sea. Its general color is black, with a conspicuous

* Baird, Brewer and Ridgway's Water Birds, Vol. II, p. 457.

† Ornithologist and Oologist, Vol. XII, p. 2.

white face mask; long, floating yellow ear-tufts, "bent like the horns of a ram"; the legs are red, the beak is red and green, making altogether a grotesque looking creature.

The birds deposit their single egg in crevices of rocks; a burrow is often dug in the guano, which has for ages accumulated on these islands; sometimes a few pieces of weeds are found in the bottom of the cavity, but often no material is used as a nest lining.

Mr. W. O. Emerson, who has collected extensively on the Farallone Islands, says that one of the birds may always be seen at the entrance of their nesting places on guard duty; they are among the most noisy of the sea birds, always screaming while out on the rocks, and constantly "growling" while in their burrows. Fresh eggs may be collected in the middle of June. Mr. Emerson informs me that he has taken fresh eggs and young birds in the latter part of July. One pair will rear two or three birds in a season.

The eggs have a ground color varying from a pure white to a yellowish buff. Some have a circle of lilac markings about one or both ends. Eggs will be found in a large series having tan colored spots over the entire surface; others have lines and zigzag markings, while some seem to be immaculate, but upon close examination deep-lying shell markings are noticeable. Four eggs measure 2.87×1.88 , 2.83×1.86 , 2.84×1.86 , 2.82×1.89 .

In a paper entitled "Birds and Eggs from the Farallon Islands,"* based principally upon Mr. Emerson's "matchless collection of birds and eggs, and his notes regarding them," the author, Mr. Walter E. Bryant, says: "I have carefully measured fifty puffin's eggs, which average 70.2×48.4 mm.† The individual proportions of eight eggs, showing the greatest and smallest extremes of both diameter, are 81×50 , 77×48 , 74×50 , 71.5×51 , 71×46 , 65.5×45 , 64×50 , 63.5×50 mm."‡

13. *Fratercula arctica* (LINN.) [743.]

Puffin.

Hab. Coasts and islands of the North Atlantic. Breeding on the North American coast from the Bay of Fundy northward, south in winter to Long Island, and casually further.

The Common Puffin is found exclusively in the waters of the Atlantic, breeding on the eastern coast of North America from Maine to Greenland. In Europe it breeds from Great Britain to the northern coast of Norway.

The nest is made in a burrow in the earth, dug by the birds. Far north thousands breed in the fissures of rocky cliffs and in the sides of

* Read before the California Academy of Sciences, December 19, 1887.

† 2.76×1.90 .

‡ 3.19×1.97 , 3.03×1.89 , 2.91×1.97 , 2.81×2.01 , 2.79×1.81 , 2.58×1.77 , 2.56×1.97 , 2.50×1.97 .

bluffs; two birds are often found sitting, each on its egg, in the same burrow. The eggs are deposited late in June and in July. Mr. Frazar found these birds abundant on the coast of Labrador. An island of two or three hundred acres in extent was covered with Puffin burrows; about a thousand nests examined contained one egg each, while in a dozen others there were but two eggs to a nest. The greater part of these were plain, dull white; others were more or less thickly spotted, with obscure chocolate and reddish-brown markings; a number had distinct brown spots, blotches and tracings, such as are seen in the Murre eggs.* The sizes range from 2.25 to 2.85 in length by 1.45 to 1.85 in breadth.

13a. *Fratercula arctica glacialis* (TEMM.) [743a.]

Large-billed Puffin.

Hab. Coasts and islands of the Arctic Ocean, from Spitzbergen to Baffin's Bay.

This bird is like the last, but greater in size, the bill larger and differently shaped. It breeds in the far north, on the islands of Baffin's Bay and along the coasts of Greenland — nesting in the same manner as *arctica*. The eggs are not distinguishable. According to Prof. Ridgway they average larger than *F. arctica*.†

14. *Fratercula corniculata* (NAUM.) [744.]

Horned Puffin.

Hab. Coasts and islands of the North Pacific, from Kurile Islands to Sitka.

The Horned Puffin breeds on the bleak rocky islands of the polar seas. It is found along the coast of Alaska, is common in the Northern Pacific Ocean and on nearly all the islands of Behring's Sea. It takes its name from the slender, upright horns of the upper eye-lids. The term "horns," however, is regarded by some as misleading. In the living bird the horns are said to be only soft, flexible caruncles or wattles. The nest-holes of this species are in the deep, narrow interstices of rocks, seldom within the reach of a man's arm, and, except in the absence of the bird, it is hazardous to attempt to rob the nest. Like the Tufted Puffin, *Lunda cirrhata* it often inflicts a severe wound with its powerful bill. The nest cavities are lined with grass, moss, etc. A single egg is laid, which is oblong-oval in shape, pure white in color and the shell is rough, measuring 2.74 x 1.84.

15. *Cerorhinca monocerata* (PALL.) [746.]

Rhinoceros Auklet.

Hab. coasts and islands of the North Pacific, breeding southward to California and Japan; in winter, south to Lower California.

On the islands of the Pacific coast, from Washington Territory

* Ornithologist and Oologist. Vol. XII, pp. 2-3.

† Manual North American Birds, p. 11.

northward, the Horned-billed Auk is said to breed in abundance. Eggs of this species have been collected on the Farallones, and the bird was thought to breed on the islands farther south. It is nocturnal in its habits, remaining throughout the daytime in crevices among the rocks and burrows in the ground, where it deposits its single egg. This is similar to the egg of the Horned Puffin—dull, chalky white, with discolorations and faint shell markings of obscure purplish-gray. Sizes range from 2.65 to 2.90 long by 1.80 to 1.90 broad.

16. *Ptychoramphus aleuticus* (PALL.) [751.]

Cassin's Auklet.

Hab. Pacific coast of North America, from the Aleutian Islands to San Diego, breeding southward to the Farallones.

Mr. Emerson found this species abundant on the Farallones. It is nocturnal in its habits, flying and roving about during foggy, stormy or moonlight nights, but never at dusk. After dusk, however, they come out of their holes in the rocks all over the island, and can be heard calling to one another their peculiar notes, *chee-rie-kee, chee-rie-kee*. This Auk does not burrow in the ground like the Puffins or other species that inhabit the Farallones. Any convenient crevice or hole in a pile of rocks which affords a hiding-place suits this species for the purpose of depositing its single egg.

Mr. Bryant, in his paper "Birds and Eggs from the Farallon Islands," says that this Auk arrives early in the year, coming in great numbers in the night of January 14, 1887.

Two and three young are supposed to be reared in a season. Young birds in the down have been taken in September.

Considering the size of this species, it lays a very large egg. The bird measures eight to nine and a half inches in length, or about the size of a full-grown Woodcock, while its egg averages 2.25×1.47 . At first appearance the egg seems to be white, but upon holding it to the light it is a delicate shade of emerald green. The shell is finely granulated, and the general shape of the egg is ovate, some more pointed than others. Two extreme examples measure as follows: 1.97×1.42 , 1.65×1.22 .

17. *Cyclorhynchus psittaculus*. (PALL.) [747.]

Paroquet Auklet.

Hab. Coasts and islands of the North Pacific, from the Aleutian and Kurile Islands northward.

A bird of the open sea, only visiting land for the purpose of breeding; known also by the name of Pug-nosed Auk. It is distributed irregularly throughout the Northern Pacific Ocean and Bering Sea, being quite common on the Prybilof and Aleutian

Islands during the breeding season, which begins about the middle of May.

For its nesting place this Auk selects a deep crevice in the face of some inaccessible cliff; the cavity is often winding, and it is exceedingly difficult to obtain the eggs. Even on islands where hundreds of these birds are found breeding the cavities can not be opened, except by the means of dynamite or blasting powder, which, if used, would destroy the eggs. A single egg is deposited on the bare surface of the cavities; it is generally an oblong-oval shape with rounded ends, chalk-white or bluish in color, and the shell rough. The average size is 2.12 x 1.46.

18. *Simorhynchus cristatellus* (PALL.) [748.]

Crested Auklet.

Hab. Coasts and islands of the North Pacific, from Kadiak and Japan northward.

The Crested or Snub-nosed Auk, like the last, inhabits the coasts and islands of the North Pacific. This little bird has a beautiful crest on the forehead of twelve to twenty feathers; it is about two inches long, and curls gracefully forward upon the bill. Its nesting habits are like those of the *C. psittaculus*. On the islands of Bering Sea its breeding season extends from May to August. The egg averages 2.14 x 1.45.

20. *Simorhynchus pusillus* (PALL.) [750.]

Least Auklet.

Hab. Coasts and islands of the North Pacific, from Sitka and Japan northward to Bering's Strait.

One of the most characteristic of the waterfowl frequenting the Prybilof Islands, Bering Sea. By the 1st to the 6th of June they arrive in great numbers on these islands, and begin to lay. It is said to be comically indifferent to the proximity of man, and can be approached almost within an arm's length before taking flight, sitting upright and eyeing one with great wisdom and profound astonishment. Dr. Coues says: "This curious little bird, the smallest of all the Auks, and one of the least of all water birds, inhabits the coasts and islands of the North Pacific, resorting to favorite breeding places by millions, with *S. psittaculus* and *S. cristatellus*. The nesting is similar, the single egg being laid in the recesses of rocky shingle over the water; size 1.55 x 1.12."† The bird is not known to come south so far as the United States.

21. *Synthliboramphus antiquus* (GMEL.) [753, 759.]

Ancient Murrelet.

Hab. Coasts and islands of the North Pacific, from Sitka and Japan northward. Accidental in Wisconsin.

The Black-throated Guillemot, or Murrelet, is found in the Pacific

† Key to North American Birds, p. 809.

Ocean, breeding on the islands and along the coasts from Sitka northward. Nests that have been found of this species were in holes in banks, or in burrows in the ground, similar to those of the Petrels. On some of the islands of Bering Sea, however, the birds are known to deposit their eggs in the crevices of cliffs. A single egg is laid, pale buff in color, with small longitudinal markings, somewhat subdued, of lavender gray and a light brown. Sizes range from 2.15 to 2.50 long by 1.40 to 1.55 broad.

23. *Brachyramphus marmoratus* (GMEL.) [755.]

Marbled Murrelet.

Hab. Coast and islands of the North Pacific; on the American coast from San Diego northward, and breeding as far south at Vancouver Island.

This is another of the diminutive Murres confined to the Pacific Ocean. There seems to be little known concerning its nidification, but its nesting habits and eggs are said to resemble those of the Ancient Murrelet, *S. antiquus*. They are ovate in shape, ground color buffy, marked with various shades of brown. Size, 2.14 x 1.42.

26. *Brachyramphus craveri* (SALVAD.) [758.]

Craveri's Murrelet.

Hab. Island of Natividad, Gulf of California.

Craveri's Murrelet, of plain dark, slaty plumage above, and entirely pure white beneath, breeds on the islands at the southern portion of Lower California, in the vicinity of Cape St. Lucas. It nests in burrows in the ground, and its general habits in all respects are said to be the same as those of *S. antiquus*. It deposits a single egg, which is ovate in shape, of a yellowish or buff ground color, thickly dotted, sprinkled and marked with blackish-brown. Average size 2.03 x 1.40.

27. *Cepphus grylle* (LINN.). [760, *part.*]

Black Guillemot.

Hab. Coasts of Northern Europe, south to Denmark and British Islands; coast of Maine, south in winter to Philadelphia; Newfoundland (?)

In Europe this species breeds from the northern coasts of the British Islands to the Arctic Ocean. It is resident on the north coast of Ireland. Breeds commonly on the Hebrides, Orkneys and other islands on the coast of Scotland. A very common species along the entire coast of Norway. In North America it breeds on the islands off the coast of Maine; on Grand Manan and other smaller islands it is found in countless numbers about the middle of June, depositing its eggs in the nooks and crevices of rocks, and in all sorts of places which offer shelter above high water mark. The eggs are laid on the bare surface of the rock, with no attempt at nest building. So skillful

is the bird in hiding away its eggs that they are sometimes found hidden away in subterranean caves.* Two, and rarely three eggs are laid, and they are indistinguishable from those of the following species, but average larger.

28. *Cephus mandtii* (LICHT.) [760, *part.*]

Mandt's Guillemot.

Hab. Arctic regions of both continents; south on the Atlantic coast of North America in winter to New Jersey, breeding to Hudson's Bay and Labrador; Alaskan coast, south in winter to Norton Sound.

The Sea Pigeon, as it is called, breeds abundantly on the coast and islands of the North Atlantic. It is very abundant from Labrador and Hudson's Bay northward, nesting in the holes and crevices of rocks, often in the most inaccessible places. The eggs are laid in June and July. The usual complement is two, often three. These vary from white to a pale greenish-white, light drab yellow or buff, marked irregularly with spots and blotches of different shades of brown and black, thickest at the great end, where they are usually almost a confluent ring; they are oval or elliptical in form; size about 2.30 x 1.55, but, like nearly all eggs in a large series, there is a great variation in the size, shape, and also in the style of markings, etc.

29. *Cephus columba* Pall. [761.]

Pigeon Guillemot.

Hab. Coasts and islands of the North Pacific, southward from Bering's Strait to Northern Japan and Southern California.

On the Pacific coast of North America this species is found breeding from San Nicholas Island northward to the islands of Bering Sea. Dr. Leonhard Stejneger says that it is a very common bird on Bering and Copper Islands; its eggs were collected at the latter place June 16th.† It is quite common on the Farallones. Mr. Emerson says egg-laying begins about the first of May, or shortly after, and continues into July. Two eggs is the number laid, and they are deposited in the crevices of rocks or in dark nooks under boulders, often near the water's edge. If the eggs are taken the foolish bird will lay again in the same place. The favorite resting place of these birds is on the rocks just above the foaming surf, where they sit in pairs and "converse" with one another in low whistling notes.

In a large series of eggs the ground color varies from light pearl gray to greenish-blue; their general shape is like that of the Gulls' eggs, rounded oval at the large end and pointed at the smaller. The

* See "Notes on Some of the Birds of Grand Manan," by C. H. Andros, Ornithologist and Oologist, Vol. XII, pp. 179-180.

† Bulletin of the United States National Museum. No. 29. Results of Ornithological Explorations in the Commander Islands and Kamtschatka. By Leonhard Stejneger. Washington, Government Printing Office, 1885. P. 21.

markings are of two shades of lilac; in some they are thickly spread over the entire surface; in others they form a circle about the larger end. Mr. Bryant gives the average measurement of twenty-five sets of two eggs each in Mr. Emerson's collection as, 61.6 by 41.4 mm.* Extremes in size, 66.5 by 41.5, 58.5 by 41 millimeters.†

30. *Uria troile* (LINN.) [763.]

Murre.

Hab. Coasts and islands of the North Atlantic, southward on the coast of North America in winter to Southern New England; breeding from Nova Scotia northward.

Like all of the Auks, Murres and Puffins, this species is eminently gregarious, particularly in the breeding season. It is found in great numbers throughout the Arctic Ocean and on nearly all the islands north of Asia, Europe and America. On this side of the Atlantic it breeds from Nova Scotia northward.

Tens of thousands of these birds congregate to breed on the rocky islands, depositing and incubating their single egg close to one another on the shelves of the cliffs. The birds sit side by side, and although crowded together, never make the least attempt to quarrel. Clouds of birds may be seen circling in the air over some huge, rugged bastion, forming a picture which would seem to belong to the imagination rather than the realistic. They utter a syllable which sounds exactly like *murre*. The eggs are so numerous as to have commercial value, and they are noted for their great variation in ground color and markings. They vary from white to bluish or dark emerald-green in ground color; occasionally unmarked specimens are found, but they are usually handsomely spotted, blotched, lined in various patterns of lilac, brown and black over the surface. In some the markings are confused zigzag lines that look like hieroglyphics. The eggs are large for the size of the bird, measuring from 3. to 3.50 long by 1.95 to 2.10 broad; pyriform in shape.

30a. *Uria troile californica* (BRYANT.) [763a.]

California Murre.

Hab. Coasts and islands of the North Pacific, breeding from California north to the Pribilof Islands.

Mr. Emerson says that the California Murre is the most common sea fowl on the Farallone Islands, and they do not seem to diminish in number, notwithstanding the wholesale destruction of their eggs for commercial purposes. The birds begin to lay by the middle or latter part of May. Fresh eggs can be found as late as August. This is due, more or less, to the many robberies to which the birds are sub-

* 2.43x1.62.

† 2.62x1.63, 2.30x1.61.

jected, and they are compelled to lay several times before they are left undisturbed by the eggers. So telling is the effect due to constant laying that the eggs deposited in the latter part of the season are perceptibly smaller.

The Western Gull, *Larus occidentalis*, is another enemy of this Murre; it carries off and devours both eggs and young. So it would seem that the chances for the Murre to rear its young and launch them into the deep, blue sea, where they can take care of themselves, are not very favorable, yet these birds are found in countless numbers on the islands of the Pacific coast. Mr. Bryant, in his excellent paper,* says: "The gulls pick a murre's egg up bodily and carry it away in their capacious mouth, but do not stick their bill into it to get hold, as is stated by some writers, whose observations must have referred to the eggs already broken by the gulls or eggers."

This species lays a single pear-shaped egg on the bare rock, often on the narrow shelves of cliffs, where the bird has just room enough to sit, and if unmolested will rear two and three young in a season. Like the eggs of the last species, they show a wonderful diversity of color and markings; the ground color is white, buff, greenish of several shades, yellowish, and cinnamon. They are either unspotted or blotched or streaked with zigzag markings of brown and black. They measure from 3.30 to 3.50 long by 1.90 to 2.05 broad; occasionally as small as 2.05 in length by 1.45 in breadth.

31. *Uria lomvia* (LINN.) [764a.]

Brunnich's Murre.

Hab. Coasts and islands of the North Atlantic and Eastern Arctic Ocean, south on the Atlantic coast of North America to New Jersey. Breeding from the Gulf of St. Lawrence northward.

This species has the same general habits and characteristics as the common Murre, *Uria troile*. Its distribution in the breeding season is about the same, and the eggs are indistinguishable. It is an abundant bird on the islands of the North Atlantic.

31a. *Uria lomvia arra* (PALL.) [764.]

Pallas's Murre.

Hab. Coasts and islands of the North Pacific and Western Arctic Ocean.

The great "egg bird" of the North Pacific, swarming at its breeding places on the rocky islands and shores in myriads. Its habits and nesting are the same as those of the foregoing, the eggs averaging larger, 3.21 x 2.01.

*Birds and Eggs from the Farallon Islands.

32. *Alca torda* LINN. [742.]**Razor-billed Auk.**

Hab. Coasts and islands of the North Atlantic, south in winter on the North American coast to Southern New England.

The Razor-billed Auk is abundant on the coasts and islands of the North Atlantic and some parts of the Polar seas. The Razor-billed Auk is about eighteen inches long, with a pointed tail and flatly compressed bill; the plumage is brownish-black above and white beneath, the black bill having a white curved line and the back part of the wing is edged with white. It breeds from the northeastern coast of Maine northward. Mr. Frazar found it common everywhere in Labrador, more so even than the Murre, *Uria troile*, owing to its habit of breeding in less frequented places—concealing its eggs in the cracks and crevices among the rocks, where it was not apt to be disturbed. It frequents the rocky shores, and deposits its eggs in June and July, often in deep fissures of the rocks and in caverns. It very frequently lays its eggs at the entrance of inhabited puffin's burrows. Generally one egg is laid, but in about twenty instances Mr. Frazar found two. These are white with a creamy or bluish tint, spotted and blotched with dark brown or black, the spots often becoming confluent and generally forming a circle toward the large end; pyriform to oval in shape; size about 3.00 x 2.00. The eggs exhibit a great variety in the distribution and style of markings. In shape they are not distinguishable from some types of the common Guillemot, but are generally more or less ovate or elongated pear-shaped. The Razor-billed Auk breeds sparingly on the outlying rocky islands of Nova Scotia, as on Devil's Limb and Gannet rock.

The bird is about eighteen inches long. In life it is said to have a particularly trim and elegant form, and its feathers are always kept perfectly clean, smooth and glossy. This Auk is said to be of quarrelsome disposition, seldom allowing a puffin or murre to alight near it without opening its bill at the intruder and disclosing a bright orange mouth. The Razor-bill rides lightly on the water and dives well.

33. *Plautus impennis* (LINN.) [741.]**Great Auk.**

Hab. Formerly the coasts and islands of the North Atlantic, from Massachusetts and Ireland northward nearly to the Arctic Circle. Believed to be now extinct.

Ornithologists generally agree that the Great Auk has disappeared from the face of the earth. Within the present generation it is one of the birds that has doubtless become extinct through the agency of man. Like the penguin, which it much resembles in general form,

it did not possess wings suitable for flight, those members being of very small size and only useful as fins in the water. The specific name, *impennis*, or wingless, is not really a correct term. The bird was easily captured when on land. A specimen is said to have been taken at St. Kilda in 1822; and it was once a well known bird in the Orkneys.

The last specimens of the Great Auk, two in number, were taken by a party of men in an excursion to a rocky island on the coast of Ireland in 1844. The bird formerly inhabited the coast of Massachusetts and northward to Greenland and Iceland, as we are assured by the earlier observers, and by the quantity of bones in shell-heaps. There are four preserved specimens in this country, and about seventy skins and eggs in the various museums of the world. This interesting bird is said to have once been found on Bird Rocks in the Gulf of St. Lawrence, but those who visited this place as far back as 1835 do not mention the "Penguin" as occurring there.

On the American coast the last living example is thought to have appeared on a small island off the southern coast of Newfoundland. About twenty years ago the Great Auk, it is said, was still to be found on the Penguin Islands, 250 miles north of Cape Norman, New Foundland, but of this there seems to be no satisfactory evidence. Mr. R. Dean records one "found dead in the vicinity of St. Augustine, Labrador, in 1870."* This one, though in poor condition, sold for \$200, and was sent to Europe. Concerning the character, date and disposition of the specimen, however, there appears to be some question, and it is not likely that the bird lived down to so recent a date. The bird is said to have been a remarkable swimmer, moving upon and under the water with extraordinary rapidity, a specimen in one instance having been pursued by a six-oared boat and crew for hours in vain. The Great Auk, the largest of the family, measures about thirty inches in length, the wing six, tail three, bill along the gape four and a quarter. The general color of its plumage is dark above, and the under parts white, extending to a point beneath the throat; the ends of the secondaries are white. There is a white oval spot between the eyes and bill.

The egg of the Great Auk was laid on the bare rock without any attempt at a nest. The egg is like that of the Razor-billed Auk, but of course much larger. Prof. Robert Ridgway gives the average size as 4.67×2.91 .†

* American Naturalist, Vol. VI, p. 368.

† Manual of North American Birds, p. 19.

34. *Alle alle* (LINN.) [752.]**Dovekie.**

Hab. Coasts and islands of the North Atlantic and Eastern Arctic Ocean; in North America, south in winter to New Jersey; breeds in high northern latitudes.

The little Ice-bird of the fishermen and the Sea Dove of ornithologists. Its entire life is spent on the open sea, rarely visiting land except during the breeding season or when driven thence by severe storms. It breeds in the Arctic regions of America and Europe, the islands of the Arctic Ocean, and in the northwestern portion of Asia. The head and bill of this bird are formed almost exactly like that of a quail. It is very abundant at its breeding grounds in the far north, and is one of the most boreal of birds; nesting chiefly on islands, or always in places near the sea, depositing its single pale, greenish-blue egg in the crevices of rocky cliffs. The eggs measure from 1.80 to 1.90 in length by 1.25 to 1.30 in breadth.

35. *Megalestris skua* (BRUNN.) [696.]**Skua.**

Hab. Coasts and islands of the North Atlantic. South to Spain and Massachusetts. Rare on the coast of North America.

The Skua Gull may well be called the feathered pirate of the seas. It does not congregate in flocks; two or more pairs are seldom seen together. It is noted for its courage and daring, attacking and harassing gulls, forcing them to disgorge the fish which they have swallowed. In the Island of Unst, the most northern one of the Shetland group, it has been found breeding. The bird was given a place in the fauna of North America on the ground of its occurrence in Greenland, where its eggs are said to have been taken. The nest is simply a shallow cavity in the long grass, lined with grass stems. The eggs are two or three in number, with an olive-green or drab ground-color, marked by irregular dark olive-brown and chocolate-colored blotches; they measure from 2.75 to 3.00 in length, by 1.50 to 2.00 in breadth.

36. *Stercorarius pomarinus* (TEMM.) [697.]**Pomarine Jaeger.**

Hab. Seas and inland waters of northern portions of Northern Hemisphere, south to Africa and Australia, and probably South America. Not known to occur in winter on the Atlantic coast of North America north of Long Island.

Another of the falcon-like sea fowls, commonly called the Gull Hunter by the fishermen. Resident throughout the summer in high northern regions, chiefly within the Arctic Circle. In winter it is a great wanderer, and is known to occur on the Great Lakes, and as far as the above habitat indicates. The bird is said to live chiefly by plundering the Kittiwake Gull; but will attack other species, even the

largest. Comparatively little is known of its breeding habits; it breeds in remote places, and is said to form a rude nest of grass and moss, situated on dry elevated spots in marshes. The eggs of all the Skuas are very similar in appearance—pale olive-green or yellowish-gray in ground-color—irregularly blotched and spotted with two shades of brown; those of the present species are said to be thinner in form and more pointed than those of the others. Dr. Brewer describes an egg procured in Greenland as rounded-ovoid; its ground-color, deep olive-drab, sparingly spotted with slate-color and two shades of umber, chiefly at the larger end, where they become confluent. There are also a very few scattered dots of black. Size, 2.25 by 1.70.

37. *Stercorarius parasiticus* (LINN.) [698.]

Parasitic Jaeger.

Hab. Northern part of Northern Hemisphere, southward in winter to South Africa and South America. Breeds in high northern districts, and winters from the Middle States and California southward to Brazil and Chili.

The Parasitic Jaeger, like the others of this family, is eminently rapacious, and it is known as the "Man-of-War," from its habits of pursuing and robbing the terns and smaller gulls. It breeds in the interior of Arctic America, and is especially abundant in the Anderson River region. A common bird in the more northern portion of Asia and Europe. So far as known, its general habits do not differ from those of the Pomarine. It is given as the most common of the Skuas off the coast of Norway, but does not go far inland to breed. The nest of this species is made on islands or on the margins of lakes; it is a mere depression in the ground, lined with a few grasses and withered leaves. In Greenland it is said to be a resident species, and it breeds in Iceland on the moors far inland. In the Shetland Islands this bird breeds in communities, fifty or more pairs congregating at the same place. The eggs are usually two in number, sometimes three, and are as variable in ground color and markings as those of the Eskimo Curlew. They vary from olive drab to green, gray and brown, marked with several shades of chocolate, brown and an obscure stone gray, distributed over the entire egg. Size from 2.00 to 2.40 long, and from 1.50 to 1.70 broad.

38. *Stercorarius longicaudus* VIEILL. [699.]

Long-tailed Jaeger.

Hab. Northern part of Northern Hemisphere, south in winter to the Gulf of Mexico.

The same plundering habits mark the character of this bird as are peculiar to any of the Jaegers or Skuas. It is distributed in the breeding season throughout all parts of the region near the Arctic Circle, in

Siberia, Northern Asia, Europe and America, and on the islands of the Arctic Ocean. It breeds in Greenland and Iceland, is abundant throughout the Barren Grounds of the Arctic coast, and is said to be very numerous in the vicinity of Fort Anderson, also on the shores of Franklin Bay. It is also found breeding on several of the Orkney and Shetland Islands. Nests found in the Arctic regions are mere depressions in the soil, scantily lined with dry grass and leaves. Some are placed far inland near small lakes, and often there is really no nest, the eggs being laid on the bare ground. The eggs are said to be not always distinguishable from those of the Parasitic Jaeger, but average smaller; exceptionally large specimens of *S. longicaudus* are sometimes as large as exceptionally small ones of *S. parasiticus*. They range from 1.95 to 2.18 long, and from 1.45 to 1.55 broad.

39. *Gavia alba* (GUNN.) [657.]

Ivory Gull.

Hab. Arctic Seas, south in winter on the Atlantic coast of North America to Labrador and New Foundland, casually to New Brunswick, and on the Pacific side to Bering Sea.

A bird that is resident in the Arctic regions of both hemispheres, only occasionally visiting the more temperate zones. It is said to breed the farthest north of all the gulls. Noted for its ravenous appetite, gorging itself with the flesh of the seal and the blubber of the whale. On the islands and along the coasts of Spitzbergen it breeds sparingly; in like places on the coast of Northern Siberia it is abundant. The bird is a resident of Greenland, and the breeding season there begins about the middle of June. The nest is built on some inaccessible rock or cliff; it is made of dry grass and lined with moss and a few feathers, forming quite a hollow. An egg is described as oblong-oval in shape, with a ground color of light yellowish-olive with small blotches of dark brown scattered over the surface. These are intermingled with more obscure brown and cloudings of lilac. Size 2.45 long by 1.70 broad.

40. *Rissa tridactyla* (LINN.) [658.]

Kittiwake.

Hab. Arctic regions, south in Eastern North America in winter to the Great Lakes and Middle States.

The Kittiwake Gull is a northern species, found in the Atlantic waters of Europe and America. On the Pacific coast it is represented by the next form, *pollicaris*. It is one of the commonest resident species of Greenland, and according to observers it inhabits nearly all parts of the Arctic regions. Breeds on the islands of the Atlantic coast of North America, from New England northward; an abundant species,

nesting not always on the ground like most gulls, but on rocky cliffs overhanging water. On Gannet Rocks of the St. Lawrence this noisy Gull is especially numerous, where its nests are found on narrow ledges; they are composed of grass and seaweed. Some of the nests are quite flat, while others are several inches in thickness and deeply hollowed, new material being added each year, and they are sometimes so numerous that the breeding places become very filthy and emit an intolerable odor.

The eggs are two and sometimes three in number, and have a ground-color of yellowish buff, brownish-gray or pale greenish-gray, marked with irregular spots of varying shades of brown and lilac. The average size is 2.26 x 1.61.

40a. *Rissa tridactyla pollicaris* RIDGW. [658a.]

Pacific Kittiwake.

Hab. Coasts of North Pacific and Bering Sea.

This form of the Kittiwake is abundant on the islands of the North Pacific. Dr. Leonhard Stejneger records it as a common breeding bird, both on the islands and along the Kamtschatkan coast, and in all places suitable for rookeries they are found in astonishing numbers. For the purpose of nesting they select the shelves and projections of cliffs, the tops of walls that rise perpendicularly out of the deep sea, and especially on the high pinnacles standing lonely amidst the foaming breakers. The nesting is precisely the same as that of *R. tridactyla*, and the eggs are indistinguishable, except that in a large series they are said to be more uniform in their markings.

41. *Rissa brevirostris* (BRUCH.) [659.]

Red-legged Kittiwake.

Hab. Coasts and islands of Bering Sea.

The living bird of this species has coral-red legs and feet, which contrast richly with the snowy white plumage of the head, neck and under parts. An abundant species on the islands of Bering Sea. On the Prybilof group it swarms by tens of thousands to breed in the first part of May. It is especially abundant on St. George's and St. Paul's Islands.

The nests, like those of the Pacific Kittiwake, are placed on almost inaccessible shelves and projections, so that seldom is a nest reached unless a person is lowered down to it on a rope passed over the cliff. Dry grass and moss cemented with mud are the materials which constitute the nests.

The Red-legged Kittiwake is common on the islands along the

Kamtschatkan coast, notably on Copper Island, where it breeds in company with *pollicaris*.

The eggs have a ground-color of brownish white, varying to light drab and buff, marked with blotches, sepia-brown and umber; these are underlain by subdued shades and cloudings of lilac-gray. The average size of the egg is 2.28 x 1.66.

42. *Larus glaucus* BRUNN. [660.]

Glaucous Gull.

Hab. Arctic regions, south in North America to the Great Lakes and Long Island, North Pacific.

One of the largest of the Gulls, equal in fact, to the Great Black-backed Gull, *L. marinus*.

It is a bird of high northern range during the breeding season—inhabiting the Arctic regions of Europe and Asia and the more northern portions of North America. In Spitzbergen it is said to breed in immense numbers, placing the nests on the shores or low rocks and even on masses of ice. They are large structures, made of sea weed and moss. The Burgomaster Gull, as it is called, feeds on crabs and fishes; it attacks smaller birds and also robs them of their eggs and young. It attends fishing boats for the purpose of devouring the offal which may be thrown overboard. The bird is recorded as a constant resident of Greenland. In Hudson's Bay it builds its nests on the islands in lakes and rivers, and the young are hatched in June. Walrus Island, one of the Prybilof group in Bering Sea, is a favorite breeding place of this gull; here the nests are built of sea ferns and dry grass, placed among the grassy tussocks in the center of the island. The eggs are two, and sometimes three in number; their general shape is spherically oval, and the ground color dark grayish-brown, pale ash, pale clay or a pearly white. The markings are small patches of light brown and brownish black. The sizes range from 2.95 to 3.15 long by 2.18 to 2.25 broad.

* * *Larus barrovianus* RIDGW.

Point Barrow Gull.

Hab. Bering Sea and adjacent waters, northeastward to Point Barrow, southwest in winter to Japan.

This new species of Gull,* whose plumage is described as resembling that of the Glaucous and Iceland Gulls, and whose size is intermediate between these two species, is found on the islands of Bering Sea, and its range extends as indicated in the habitat.

Specimens that served for description were from the Island of St. Michaels and Point Barrow.†

* Described since the publication of the A. O. U. Check List.

† For details see Auk, III, p. 330, or Ridgway's Manual N. Am. Birds, p. 26.

Its general habits, nesting, eggs, etc., are doubtless similar to those of other Gulls. Prof. Ridgway gives the average measurement of its eggs as 3.05×2.03 .

43. *Larus leucopterus* FABER. [661.]

Iceland Gull.

Hab. Arctic Regions, south in winter in North America to Massachusetts, and further.

This Gull is precisely like the last, but smaller, and it is difficult to distinguish the two at a distance. Another common name for it is White-winged Gull. It is an Arctic species, and its distribution during the breeding season is nearly identical with that of the Burgomaster, being found in the northern parts of Europe, Asia and North America. The two species are often found nesting in the same places, and the nests are of the same construction. The eggs, however, are smaller, measuring 2.79×1.85 .

44. *Larus glaucescens* NAUM. [662.]

Glaucous-winged Gull.

Hab. Pacific coast of North America, from Alaska south to California; on the Asiatic side south to Japan.

Almost as large a species as the Glaucous Gull or Burgomaster. It breeds on the islands of the Pacific coast from Washington Territory northward. The nests are not always built on the shelving rocks of high cliffs. On the Aleutian Islands they are found among the tall grass on the highest parts of the islands, while others are built on projections of rocks. Sometimes there is little or no attempt at nest-making, the eggs being laid in a slight depression of the ground.

On Bering Sea and Copper Islands, on the Kamtschatkan coast, this species breeds all around the shores. Eggs have been found as early as the middle of May. These are said to be of a more greenish tinge and the spots more numerous and better defined than in those of the *glaucus*. Size 2.88×2.03 .

45. *Larus kumlieni* BREWST.

Kumlien's Gull.

Hab. North Atlantic coast of North America; south in winter to the coast of the Middle States.

This new species of Gull, first described by Mr. William Brewster,* is like *glaucescens*, but somewhat smaller. It is recorded as being quite common in the upper Cumberland water, where it breeds, placing the nests on shelving rocks of high cliffs. The eggs are said to be the same as those of *glaucescens*.

* Bull. Nutt. Club., Vol. VIII., p. 216.

47. *Larus marinus* LINN. [663.]**Great Black-backed Gull.**

Hab. Coasts of the North Atlantic; south in winter to Long Island and Italy.

The large and powerful Black-backed Gull, or Saddle-back, inhabits the Atlantic waters of Europe and North America. Breeds in great numbers on the coast of Norway as far as North Cape. In various parts of the British Islands it is found throughout the year, especially on the islands around the coasts of Scotland, where it breeds in abundance. On the American coast it breeds from the Bay of Fundy northward to Greenland. Years ago it was known to breed quite commonly on the islands off the coast of Nova Scotia.

In Labrador it is common everywhere. Mr. M. Abbott Frazar found it breeding on the small islands, placing its nests generally on some elevated spot. He seldom found more than a half dozen pairs breeding on a single island. The nests were built of dry grasses, were very bulky and deeply hollowed. He found no nests containing more than three eggs. During the breeding season the birds feed largely upon the eggs of other birds, especially upon those of the Murre and upon young Eider ducks.*

The eggs of this Gull vary from a bluish-white or olive-gray to a deep yellowish brown, and are irregularly spotted and blotched with reddish-brown and lilac of different shades. The sizes vary from 2.70 to 3.20 long by 2.05 to 2.25 broad.

49. *Larus occidentalis* AUD. [664.]**Western Gull.**

Hab. Pacific coast of North America, breeds from Southern California northward.

The most abundant species of Gull on the California coast, breeding on all suitable islands. It is the only gull which breeds on the Farallones. Mr. Emerson states that on these islands the nest is built either on high ridges or low places near the shore. The material used is a dry, rank weed; with this they construct their rather bulky nest and repair or rebuild it each year. Of their general habits Mr. Bryant says:

“The gulls are indiscriminate feeders; in addition to their usual articles of diet, they subsist largely upon eggs during the summer. They do not eat the eggs of their own species, nor do they trouble the cormorants after the murrens have commenced laying. Sea urchins, crabs, young murrens and rabbits, and fish stolen from the cormorants' nests are eaten. Not being quick enough to swoop upon the rabbits,

* Ornithologist and Oologist, Vol. XII., p. 17.

they catch them by patient watching at their burrows, and will persevere for fifteen minutes to swallow a squealing young rabbit, and finally fly away with the hind feet protruding. The dead bodies of Murres are also eaten; they detach pieces of flesh by backing away and dragging the body, meanwhile shaking their head, till a piece breaks off."

The eggs are deposited as early as the first part of May on the Farallones, and laying is sometimes continued into July. The usual complement is three; but from constant robberies by the eggers, who collect eggs for the San Francisco market, often only two are laid. The same variation of ground-color and markings are to be found in these eggs as is common to all those of the gulls; light grayish olive, clay color, bluish-white and deep yellowish-brown, spotted and blotched with umber-brown, blackish and lilac of varying shades. The average size of fifty specimens is, 2.76 x 1.94; the largest 2.99 x 2.01; the smallest 2.56 x 1.89.

[50.] *Larus affinis* REINH. [665.]

Siberian Gull.

Hab. Greenland; Asia; Europe, southward in winter to North Africa.

The Siberian Gull is a rare or occasional visitor in Greenland, whereupon it claims a place in the fauna of North America. It breeds in the extreme north of Europe, notably on the shores and in the lagoons of the Petchora River in the northern part of European Russia. The eggs are said not to differ from those of the Herring Gull.

51. *Larus argentatus* BRUNN [666]

Herring Gull.

Hab. Old World, south to the Azores; Cumberland Sound; occasional on the eastern coast of the United States.

The European Herring Gull is known as an occasional visitor to the coast of Eastern North America. On the Azores, a cluster of nine islands in the Atlantic, eight hundred miles due west of Portugal, this Gull is very common, breeding on some of the islands in immense numbers.

In Great Britain it is a familiar bird everywhere. It breeds in the islands on the coast of Scotland, especially the Hebrides, Shetland, Orkney and the Faroe Islands; thence northward to Iceland. One of the most common Gulls along the coast of Norway, as far as North Cape, where they breed by thousands. Its nesting habits and its eggs are the same as those of the American bird, *smithsonianus*. Eggs 2.91 x 1.98.

51a. *Larus argentatus smithsonianus* COUES. [666a.]**American Herring Gull.**

Hab. North America generally. Breeds on the Atlantic coast from Maine northward.

In North America this Gull is a common bird throughout its range, particularly coast-wise. It is also more or less abundant on the inland lakes and rivers during its periods of migration, and in many of these places it is found breeding. At Moosehead Lake, Me., where a few pair breed, the eggs are laid in the latter part of May, or in the first week of June. In the interior this Gull is found breeding on the lakes and larger bodies of water, as far north as the Mackenzie and Anderson River regions. On many of the large prairie lakes of Manitoba it breeds in great numbers. Mr. Frazar mentions this species as the most common of all the gulls inhabiting Labrador, breeding in colonies and placing their nests on the ground.* In many places where the Herring Gull has suffered persecution, it has been known to depart from its usual habit of nesting on the open seashore, and place its nest on trees sixty and seventy-five feet from the ground.

At Grand Manan and in Labrador, in some of the old breeding grounds, its human foes have brought about this change in its habits. Some of the nests built on the ground are merely a shallow depression with a slight lining, others are large and elaborately made of grass and moss. Those built in trees are said to be strongly interwoven and very compact.

The complement of eggs is normally three; they vary from bluish-white to deep yellowish-brown, irregularly spotted and blotched with brown of different shades; in a large series a great diversity of ground-color and markings exists. Mr. Elwin A. Capen in his superb work† figures three prevailing types of coloration. The sizes range from 2.73 to 2.91 long by 1.64 to 1.94 broad.

52. *Larus cachinnans* PALL. [667.]**Pallas's Gull.**

Hab. Asia, from the Red Sea to the Pacific and Arctic Oceans; coast of Alaska, south in winter to California.

In the Old World this Gull has been found breeding on the shores and islands of the Red Sea, the Mediterranean and Black Seas, and at the mouths of the Rivers Volga and Ural; on the shores and islands of the Caspian Sea, thence eastwardly and northerly on the inland lakes and rivers through Asia to the Pacific and Arctic Oceans. In

* Ornithologist and Oologist, Vol. XII, p. 18.

† Oology of New England: a description of the eggs, nests and breeding habits of the birds known to breed in New England, with colored illustrations of their eggs. By Elwin A. Capen. Boston, 1886.

North America it is a common species of the Northern Pacific, from California to Alaska. It breeds on the islands of the Upper Yukon River, in the first part of May, depositing its eggs in slight depressions of the bare ground. The eggs are not distinguishable from those of the Herring Gull, *L. argentatus*.

53. *Larus californicus* LAWR. [668.]

California Gull.

Hab. Western North America.

The California Gull is found along the Pacific coast in winter, but retires to its breeding places in the summer months. Its breeding grounds seem to be inland, on the lakes and large bodies of water. It breeds abundantly on Great Salt Lake and Pyramid Lake, Utah, and on Lake Malheur, in Eastern Oregon. It has been found nesting as far north as Great Slave Lake, Fort Resolution, Fort Simpson and the Lower Anderson River. The nests of this species are made on the ground, or built on rocks and, sometimes where the birds are breeding in vast colonies, the nests are placed on stunted sage or greasewood bushes. They are built of sticks, grass and a few feathers. The eggs are usually three or four in number, occasionally five. Prof. Marcus E. Jones informs me that at Great Salt Lake this Gull generally lays five eggs. These are deposited in a little bare spot surrounded by a few twigs, the hollow just deep enough to keep the eggs from rolling out. The nests are made on the sand or any other bare spot on islands far out in the lake. The eggs are laid about the middle of May. They vary from a bluish-white to a deep brownish-clay color, spotted and blotched with dark brown, slate and blackish zigzag markings. Sizes range from 2.50 to 2.70 long by 1.65 to 1.95 broad.

54. *Larus delawarensis* ORD. [669.]

Ring-billed Gull.

Hab. North America at large; south in winter to Cuba and Mexico.

This Gull inhabits the entire Continent of North America, and is, on the whole, the commonest species both coastwise and in the interior. It breeds in the United States and far north, placing its nest on the ground or on cliffs. Mr. Stebbins found this species and the Common Tern occupying an island of about an acre in extent in Devils Lake, Dakota, in the first week of June. The entire island was covered with eggs of the gulls and terns. Mr. Stebbins says: "I don't suppose you could lay down a two-foot rule anywhere without each end of it striking a nest. It was common to find the terns and gulls breeding side by side. Most of the gulls' nests were in the grass, while those

of the terns were in the sand. I did not find a gull's nest with more than three eggs, and a very few with two; whereas, several hollows were found with as many as eighteen terns' eggs in them, which had rolled together." Mr. Frazar observed a few colonies of this species breeding in Labrador, nesting like other gulls, and the nests never contained more than three eggs. These have the usual variations in color to be found in eggs of the terns—bluish-white to dark brown, spotted and blotched with brown and lilac of various shades. Sizes from 2.75 to 2.80 long by 1.60 to 1.75 broad.

55. *Larus brachyrhynchus* RICH. [670.]

Short-billed Gull.

Hab. Arctic America and Pacific coast to Southern California.

In the breeding season the Short-billed Gull occurs in the northern regions of North America. It has been found nesting on the ground in the small lakes in the vicinity of Fort Anderson, and in the Mackenzie River Valley. Breeds in great abundance at the mouth of the Yukon. It also was observed nesting along the streams in the Barren Grounds of the Arctic regions. Its nest is made of hay or wiry grass, and is sometimes placed on stumps and in trees. The eggs are usually three in number; greenish or olive brown, with various markings, but chiefly small spots of reddish-umber. Sizes vary from 2.00 to 2.35 long by 1.45 to 1.70 broad.

[56.] *Larus canus* LINN. [671.]

Mew Gull.

Hab. Europe and Asia; accidental in Labrador.

This is the Sea-mew or Sea-mall of Europe. In Great Britain it breeds more or less abundantly along the entire coast, and is especially common on some of the smaller islands in the Hebrides; on the north coast of Scotland it is found on the Orkney and Shetland Islands. It breeds on inland lakes as well as on the sea-coast, building its nest on the grassy summits of precipitous rocks near the sea or on moorland locks far inland, and even on high mountain ranges. It is abundant on the coast and on the fresh-water lakes of Norway. A common species, and breeds in nearly all parts of Central and Northern Russia. Abundant on the Prussian coast and on the northern coast of France. The nests are made of grass and vegetable substances. The usual number of eggs is three; yellowish-brown, olive-brown, and whitish to greenish-gray, irregularly marked with dark brown and purplish-gray. The size varies from 2.08 to 2.25 long by 1.40 to 1.58 broad.

57. *Larus heermanni* CASS. [672.]**Heerman's Gull.**

Hab. Pacific coast of North America, from British Columbia to Panama.

This is said to be one of the handsomest birds of the family to which it belongs, and is commonly called the White-headed Gull. It is a common species along the Californian coast and is most abundant in winter. At the Farallone Islands it is occasionally seen, but does not breed there. It probably breeds on the Santa Cruz and Santa Rosa Islands, as it does on others farther south.

The general habits of this species are the same as those of other gulls. One particular trait, however, marks this species—that of following flocks of pelicans and robbing them of a portion of the fish which these birds carry in their pouches, seizing upon the fishes which fall out or hang outside. The food of this Gull is almost exclusively fish, which it also procures by diving. It also feeds on small crustacea and mollusca. The eggs of this species are described as having a yellowish-drab ground-color, over which is scattered spots and markings of lilac and different shades of brown. The average size is 2.45 by 1.50.

58. *Larus atricilla* LINN. [673.]**Laughing Gull.**

Hab. Eastern tropical and warm temperate America, chiefly along the sea coast, from Maine to Brazil; Pacific coast and Middle America.

The Laughing or Black-headed Gull is more of a southern species, particularly one of the Gulf and South Atlantic States, but is found breeding as far north as the coasts of New England. It is an abundant and a resident species on the coasts of Florida, along the whole extent of the Gulf of Mexico; and also on the Pacific and Atlantic coasts of Central America.

Mr. Maynard says: "The notes of Gulls are loud and startling, but those of the Laughing are the most singular of them all, for their cries, especially when the bird is excited, sound like loud peals of prolonged and derisive laughter."*

Mr. R. C. Stuart, of Tampa, Fla., writes that this species nests in large communities, on grassy islands along the Gulf coast in May and June, placing the nest in tussocks of grass; the cavity is nicely lined with fine, dry grasses. The eggs are from three to five in number.

In color they vary from bluish-white to greenish-ash, spotted and blotched with brown, umber and lilac of varying shades; the usual variations in size, ground color and markings are to be found in a

*Birds of Eastern North America.

large series of these eggs; sizes from 2.00 to 2.28 long by 1.50 to 1.65 broad.

59. *Larus franklinii* Sw. & Rich. [674.]

Franklin's Gull.

Hab. Interior of North America, breeding from the northern border of the United States northward; south in winter to Central and South America.

In North America this Gull is confined to the interior, chiefly west of the Mississippi, breeding from the northern border of the United States northward. Mr. J. W. Preston found it nesting in the marshes of western Minnesota, about the middle of May.* I am informed by Mr. H. J. Wallace that it breeds abundantly in the marshes of the Red River Valley of Western Manitoba. He found this beautiful Gull breeding in large communities, in marshes and wooded swamps, making its nest of wet grasses and sedges on the tops of broken down stalks.

The eggs are described as closely resembling those of the Eskimo Curlew in size, shape and color, though the dark splashes are more evenly distributed over the surface. The ground-color varies from dirty white to olive-drab and light brown, with all the shades of the lighter tints of green and ashy. They are usually marked with numerous and bold splashes and zigzag lines of umber-brown and different depths of chocolate, particularly at the larger end. The eggs average about 2.12 x 1.40; they are three in number.

Three eggs in my possession, collected at Heron Lake, Minnesota, on the 9th of May, measure as follows: 2.06 x 1.41, 1.98 x 1.45, 2.03 x 1.47. These are olive-drab with bold spots and blotches of light and dark brown; there are no zigzag lines.

60. *Larus philadelphia* (ORD.) [675.]

Bonaparte's Gull.

Hab. Entire North America, breeding chiefly north of the United States; south in winter to Mexico and Central America.

This handsome little Gull is a common species throughout North America, from the Atlantic to the Pacific coasts. It is especially abundant along the Atlantic coast during its periods of migration. Breeds northward, nearly to the Arctic Ocean. Its flight is described as being light, airy and very graceful, resembling that of the Terns. Its principal food is small fish. On many of the large lakes and marshes in the prairie regions of Manitoba it breeds in great numbers, from thence northward and throughout all parts of the Fur Countries it is found breeding in suitable places. In the marshes of the wooded regions bordering the Mackenzie River it breeds in the latter part of June.

*Ornithologist and Oologist, Vol. XI., pp. 54-55.

The usual number of eggs laid is three, rarely four. The nests are always placed in elevated situations, in bushes, trees, or on high stumps; the materials used are sticks and grasses, with a lining of vegetable substances. The eggs vary from greenish to brown, spotted and blotched with brown, umber and lilac of various shades; these markings are chiefly clustered around the larger end. Size, 1.95 x 1.34.

62. *Xema sabinii* (SAB.) [677.]

Sabine's Gull.

Hab. Arctic regions; in North America south to New York, the Great Lakes and Great Salt Lake.

The Forked-tailed Gull breeds in the extreme northern portion of North America and Asia, especially on the islands of the Arctic Ocean, depositing its eggs in a depression of the sand, which is generally lined with bits of fine, dry grass; the nest is also often made in beds of moss, with similar lining. This Gull is recorded as abundant in the marshes in the neighborhood of St. Michael's, Alaska, where it breeds. Its food consists of worms and insects, which it obtains in mud lakes. On the northwestern coast of Greenland, above Alison Bay, this species has been found breeding, but not in large colonies. The eggs are two to three in number. They are of a deep greenish-brown, obscurely spotted and blotched with darker shades of the same; they very closely resemble those of the Willet or Curlew. The average size is 1.75 x 1.25.

63. *Gelochelidon nilotica* (HASSELQ.) [679.]

Gull-billed Tern.

Hab. Nearly cosmopolitan. In North America chiefly along the Atlantic and Gulf coasts of the United States.

In North America the Marsh Tern, as it is commonly called, breeds from New Jersey southward. On Cobb's Island, Va., it nests sparingly in the latter part of June. Dr. James C. Merrill and George B. Sennett found a colony of this species in company with *Sterna forsteri*, breeding on a grassy island, among lagoons and marshes, near Fort Brown, Texas, May 16, 1877. The nests were slight depressions among the short grass, and the eggs were frequently wet.* This Tern breeds abundantly on Pelican Island, in the Gulf of Mexico, in the latter part of May, laying its eggs on the bare sand. Farther south, on the islands along the coast of Mexico and in the Bahamas, it is known to nest in great numbers. The eggs are usually three in number, sometimes four. They vary from yellowish-buff to greenish, spotted and blotched with yellowish-brown and lilac, especially about

*Notes on the Ornithology of Southern Texas.





PIED-BILLED GREBES AND NEST.

(*Podilymbus podiceps.*)

the larger end, but, like the eggs of all terns, are extremely variable. The average size is 1.75 x 1.30.

This is the only species of tern having the bill shaped in a noticeable degree like that of a gull — hence its common name.

Marsh Tern is another name by which it is known, but this is not regarded as exactly correct.

According to the best authorities the Gull-billed Tern is a species of wide distribution and is characteristic of no particular region, breeding alike in the islands of the Indian Ocean and in those of the Gulf of Mexico, the islands and the coasts of Jutland in Denmark and along the coast and the interior in the marshes and lagoons of southern South America. A few specimens have been taken on the coasts of France and Germany, and it is recorded as being common in Hungary, Greece, and Asia Minor, where it breeds.

It is known to breed in various other portions of Southern Europe, and also in the northern parts of Africa. Its flight is spoken of as easy and graceful, partaking of the elegance which is characteristic of these birds when on the wing.

64. *Sterna tschegrava* LEPECH. [680.]

Caspian Tern.

Hab. Nearly cosmopolitan; in North America breeding southward to Virginia, Lake Michigan, Texas, Nevada and California.

This is the largest of these elegant and graceful birds, the Terns; it measures from twenty to twenty-three inches in length. The bill of this bird in life is of dark vermilion-red, growing lighter towards the tip; the pileum and occipital crest is glossy, greenish-black, extending to the lower line of the eyes. The back and upper parts of wings are pearl-blue, the whole underparts are white. The legs and feet are black. The extent of wings in the adult bird is from fifty to fifty-five inches. It is nearly cosmopolitan in its distribution, being found in greater or less abundance in various portions of the globe.

At a distance it is often mistaken for the Royal Tern, but may be distinguished from the latter by its more robust form and less deeply forked tail.

The bird is also known as the Imperial Tern; irregularly distributed throughout North America, but chiefly in the Arctic regions, where it breeds, and along the entire Atlantic coast. Eggs and young have been taken on Cobb's Island, Va., in July. Dr. Merrill observed it breeding on Padre Island, near Fort Brown, Texas, in May. Mr. B. F. Goss found it nesting on the islands of Lake Michigan. Large numbers of this species are said to breed on Pelican Island in the

Gulf of Mexico. The nests are mere hollows scooped in the dry sand, in which the birds deposit two or three eggs. These vary from white to greenish-buff, spotted and blotched with brown and lilac of different shades; broader and more elliptical than those of the next species; size 2.66×1.77 .

65. *Sterna maxima* BODD. [681.]

Royal Tern.

Hab. Tropical America and warmer parts of North America, northward to Massachusetts, the Great Lakes and California. West coast of Africa north to Tangiers.

This handsome Tern, next in size to the Caspian, breeds in large colonies along the Atlantic coast, from New Jersey southward, depositing from one to three or four eggs on the bare sand. It breeds abundantly along the coasts and on the marshes of Florida. On some of the islands in the Gulf of Mexico it nests in immense numbers. Very abundant on many of the lagoons and marshes of Southern Texas.

Prof. Robert Ridgway records the Royal Tern breeding on Cobb's Island, Va., in the first part of July. In an area of about an eighth of an acre the eggs were so numerous that it was almost impossible to walk through the nesting site without crushing a greater or less number; many of the eggs were covered by the drifting sand.*

The eggs are described as being narrower, and especially more pointed and rougher, than those of the Caspian Tern. They are yellowish-drab, irregularly blotched with dark umber and lilac of various shades; sizes range from 2.67 to 2.75 long by 1.70-1.75 broad.

66. *Sterna elegans* GAMB. [682.]

Elegant Tern.

Hab. Pacific coast of America from California to Chili.

Dr. Coues describes this Tern as a "truly elegant species, resembling the Royal Tern, but easily distinguished." It is a Mexican and Central American species, rarely occurring on the Californian coast. An egg is described as having a ground-color of pinkish-white, with bold and distinct markings of deep black and burnt sienna and subdued shell-markings of lavender-gray; size 2.20 by 1.45.

67. *Sterna sandvicensis acuflava* (CABOT.) [683.]

Cabot's Tern.

Hab. Tropical America, northward along the Atlantic coast, irregularly, to Southern New England.

The beautiful Sandwich Tern has an extensive distribution. In North America it has been observed as far north as Southern New England, and is known by the name of Ducal Tern. Breeds in large

*Bull. Nutt. Club, Vol. V, pp. 221-223. In article on the eggs of *Sterna caspia*.

colonies, like most of the terns, depositing the eggs in the dry sand. It nests on the small sandy islands off the coast of Cape Sable in the latter part of June. Breeds commonly on the coasts of Central America, and on some of the larger West India islands.

The eggs vary from white to buff, irregularly spotted and blotched with brown, umber, bluish and reddish; rather pointed; two or three in number; size about 2.10 by 1.40.

69. *Sterna forsteri* NUTT. [685.]

Forster's Tern.

Hab. North America generally, breeding from Manitoba southward to Virginia, Illinois, Texas, and California; in winter southward to Brazil.

Like all the terns, this one is noted for its graceful flight and, with them, it shares the name of Sea Swallow—a name which belongs more particularly to the next species.

Forster's Tern was once thought to breed only in the interior of North America. The above habitat, however, indicates clearly the range throughout which this species is found breeding in all suitable places. It nests on the grassy islands among the lagoons and marshes of Southern Texas, thence northward irregularly to British America. In Manitoba, on the islands and marshes of the lakes and rivers, it nests abundantly. Breeds in colonies, often in company with the Common and Gull-billed Terns, the Laughing and Bonaparte's Gulls. When its nesting places are disturbed it is said to be very noisy, uttering a grating, monotonous note, and at the same time attacking the intruder on all sides, often darting close to his head. In some localities this species constructs its nest in a turf of dry grass, upon the sand, or among stones. It breeds chiefly in grassy marshes, building its nest of flags, water-plants, lining them with finer reeds. The eggs are two or three in number, with an average size of 1.85 x 1.35. In color they vary from nearly pure white and pale green to warm brownish-drab, irregularly spotted and blotched with brown, umber and lilac.

70. *Sterna hirundo* LINN. [686.]

Common Tern.

Hab. Greater part of the Northern Hemisphere and Africa. In North America chiefly confined to the Eastern Province, breeding variously throughout its range.

Sea Swallow, Wilson's Tern, Red-shank, "Mackerel Gull" and "Summer Gull" are the names by which this beautiful species is known in various localities. It is an abundant bird throughout its North American range, breeding on many of the inland lakes and marshes as well as along the coasts. In various places on the Atlantic coast it breeds in company with other species, such as Forster's, Arctic,

and Roseate Terns, the Laughing Gull and others. Mr. W. W. Worthington, of Shelter Island, New York, writes me the following :

"Although a few Wilson's Terns breed on nearly every sandy point near here, Gull Island, situated a mile or so east of Plum Island, is their chief breeding ground in this section. Here they breed by thousands, fairly filling the air when you land and disturb them. Their nests are always placed on the ground or rocks, and are usually composed of a few pieces of grass and seaweed. They place their nests all over the Island above high water line, on the beach, on the sides of the bluffs, all around, and in the garden cultivated by the light-house keeper. Fresh eggs can be obtained there from the 10th of June to the middle of July, as eggging parties keep them cleaned off about as fast as they are laid. I collected a set of *four* eggs of this species on Gull Island, last spring (1881), which is the only set I ever saw containing more than three eggs, which is the usual number laid."

The eggs vary from greenish to deep brown, spotted and blotched with brown, blackish and lilac; they vary in length from 1.49 to 1.75 by 1.18 to 1.30 broad.

71. *Sterna paradisæa* BRUNN. [687.]

Arctic Tern.

Hab. Northern Hemisphere; in North America breeding from Massachusetts to the Arctic regions and wintering southward to Virginia and California.

In its general appearance and habits, its mode of nesting, flight, and other characteristics, this species closely resembles the Common Tern. Its distribution is, however, more northern, breeding in the most northern latitude, where *S. hirundo* is found only in limited numbers. The eggs are indistinguishable.

72. *Sterna dougalli* MONTAG. [688.]

Roseate Tern.

Hab. Temperate and tropical regions; north on the Atlantic coast of North America to Massachusetts, and casually to Maine.

On the Atlantic coast of North America this beautiful species is found breeding from Maine southward to Florida. It is known also by the name of Paradise Tern. On some of the islands of the New England coast this species breeds in abundance, notably on Muskeget, Nantucket, Martha's Vineyard and Elizabeth Islands. In many places it breeds in colonies with the Common and Arctic Terns and the Laughing Gull. On a small island, called Goose Island, about three-quarters of an acre in extent, situated in Long Island Sound, and a short distance from Faulkner's Island, Mr. M. B. Griffing found this species nesting in abundance. The high land is from two to six feet

above the beach, and is covered with a thick growth of weeds and grass; in this some of the nests were concealed; others were in plain sight; they were so numerous as to fairly cover the ground. They were nothing more than slight hollows lined with dry grass, and contained usually two eggs. Mr. Griffing says he is satisfied that this is the usual number laid by this species, as there were but two sets containing three eggs in the hundreds of nests observed; incubation had begun in nearly every set, and many were almost hatched. Some of the eggs were laid on the shore just above high water mark.

Mr. Griffing says that the eggs differ from those of the Common Tern, being less pointed at the small end; the markings are usually much finer and more numerous. By placing a tray of the eggs of each species side by side the difference is very marked. They vary in size from 1.55 to 1.75 in length by 1.10 to 1.25 in breadth. Mr. Griffing states the birds are very noisy when their nests are being disturbed; hovering overhead they utter a harsh guttural cry, peculiar to the species. They also have a note which sounds like the syllable *tip, tip, tip*.

73. *Sterna aleutica* BAIRD. [689.]

Aleutian Tern.

Hab. Coast of Alaska, from the Island of Kadiak to Norton Sound.

This Tern has been found nesting in various parts of Alaska; on the Island of Kadiak, and on some of the Eastern Aleutian Islands. So far as known, its habits do not differ essentially from those of other terns. The eggs measure from 1.65 to 1.85 long by 1.10 to 1.15 broad. They have a ground color, varying from brownish-white to greenish-olive, with bold marking of light reddish and chestnut brown.

74. *Sterna antillarum* (LESS). [690.]

Least Tern.

Hab. Northern South America, north to California and New England, and casually to Labrador, breeding nearly throughout its range.

This pretty little Sea Swallow breeds on the Island of Cuba, and other islands of the West Indies, along the coasts of Central America and Mexico. Mr. Stuart says it breeds abundantly on the white sand beaches of the Gulf Coast, and on the islands of the Atlantic coast of Florida. The eggs are laid on the bare sand in May and June.

The "Little Striker," as it is called, is found nesting on the Atlantic coast as far north as Massachusetts; a few, however, breed a little farther north. The eggs are difficult to observe on the breeding grounds, their color being very similar to the sand and broken shells in which they are laid. They are two or three, and seldom four in

number. They vary from pale greenish to drab or buff, spotted and blotched pretty evenly with brown, umber and lilac of various shades, with an occasional tinge of yellowish; in some the markings tend to form a wreath about the larger half. The average size is 1.25 x .95.

75. *Sterna fuliginosa* G MEL. [691.]

Sooty Tern.

Hab. Tropical and sub-tropical coasts of the Globe. In America from Chili to Western Mexico and the Carolinas; casually to New England.

The Sooty Tern is found both in temperate and tropical regions almost everywhere throughout the world. It breeds abundantly on the rocky islets off the coast of the Island of St. Helena, and on Ascension Island, which is farther north and west; in favorite spots at the latter place it is said to breed in countless numbers. The eggs are regarded by some as a great delicacy, and are so numerous that they are an important article of commerce.

This species is said to be semi-nocturnal in its habits, being able to fly by night as well as by day, going out to sea to feed long before daylight. It is "the egg-bird" of Jamaica. Breeds on the islands in the Gulf of Mexico, about the middle of May, and on the small islands south of Key West, Fla., early in May.

In some places the eggs are deposited on the bare ground or on rocks; in others a nest is made in the long grass under bushes. This species lays but a *single* egg. Audubon states that the Sooty Tern always lays three eggs, but more recent observers say that in thousands of nests examined there were only two instances of two eggs being found together. It is a handsome egg, pinkish or creamy white, spotted and blotched with a rich reddish-brown, tinged with lilac. Sizes vary from 1.95 to 2.12 long by 1.45 to 1.50 broad.

[76.] *Sterna anæthetus* SCOP. [692.]

Bridled Tern.

Hab. Tropical regions; casual in Florida.

The Bridled Tern is especially abundant in the West India Islands, where it is the "egg-bird" *par excellence*, and is often confounded with the Sooty Tern. It is noted for its social peculiarities, always nesting in company with the Roseate, Sooty and Noddy Terns. The single egg of this species is deposited on ledges of rocks or in the cavities among loose bowlders along the sea-shore. The egg has a ground-color of a rich cream, with large blotches and smaller spots of reddish-brown, with confluent shell-markings of dull lilac. The blotches are usually confluent at the large end, while others are scattered over the entire surface. Average size about 2.05 x 1.42.

77. *Hydrochelidon nigra surinamensis* (GMEL.) [693.]**Black Tern.**

Hab. Temperate and tropical America, from Alaska and fur countries into South America; breeding from the Middle United States northward.

The Black or Short-tailed Tern is distributed throughout North America at large, both along the coast and in the interior; breeding anywhere in colonies, in marshes and reedy sloughs, where it deposits the eggs on dead reeds, which are often floating. It is known to breed abundantly in various marshes of Michigan, Wisconsin, Minnesota, Dakota, Oregon and California. It has exceedingly long wings, and in its pursuit of insects in the air its flight and evolutions resemble those of a swallow. Mr. Frank W. Langdon observed this species to be a very common summer resident of a marsh in Northern Ohio.* He found it "nesting, or rather laying its eggs, on the little islands of decaying vegetation and mud formed by sunken muskrat houses. Three eggs constitute a full set, and they are apparently rolled about in the mud purposely until well coated, so as to hide the markings, and thereby make them less conspicuous." Mr. Langdon says that in two or three instances an attempt at nest building was noticeable, consisting merely of a few fragments of grasses, so disposed as to prevent the eggs from rolling. Two broods are reared in a season, as eggs were taken in May, and Mr. Langdon collected fresh eggs in July. They vary from brown to greenish; thickly spotted and blotched with brown and lilac of various sizes, but mostly bold, large and of light and blackish brown, thickest around the larger end. They resemble some of the sandpipers' eggs in size, shape and color. Average size 1.35 x .98.

78. *Hydrochelidon leucoptera* (MEISN & SCHINZ.) [694.]**White-winged Black Tern.**

Hab. Eastern Hemisphere; accidental in North America.

A single example of this European species was taken on Lake Koshkonong, Wisconsin, in the first week of July, 1873. The ovaries of this specimen contained small eggs. It occurs occasionally in Great Britain, and is accidental in Sweden. On the lakes, rivers and marshes of the countries of the Alps it is said to be very common, and also in the bays and inlets of the Mediterranean Sea. Its nesting and general habits are said to be like those of *H. nigra surinamensis*. The eggs, however, as a general rule, have a lighter ground color, and average slightly larger than those of the American bird.

*Summer Birds of a Northern Ohio Marsh.

79. *Anous stolidus* (LINN.) [695.]**Noddy.**

Hab. Tropical and sub-tropical regions; in America, from Brazil and Chili north to the Gulf and South Atlantic States.

Dr. Brewer says: "The common Noddy Tern appears to be an inter-tropical species, and to be found round the entire surface of the globe, both north and south of the equator, at a distance from it of rarely exceeding thirty degrees north or south." On the Island of St. Helena it is a common species, and it also breeds on Ascension Island. It breeds in profusion on several of the West Indies. On the Bahamas the nests are built of sticks, leaves and grass, and they are placed in the branches of trees. In some of the islands of the tropics this species places its nest on the top branches of cocoanut trees and the outer branches of mangroves. It lays but a single egg; this will vary from ashy-yellow to buff or cream color. The spots are small and scattered, dark chestnut, with subdued shell-markings of lavender gray; average size 2.00 x 1.35.

80. *Rynchops nigra* LINN. [656.]**Black Skimmer.**

Hab. Warmer parts of America, north on the Atlantic coast to New Jersey, and casually to the Bay of Fundy.

In summer the Black Skimmer is abundantly distributed from New Jersey southward, and is strictly maritime. It may be known by its singularly shaped bill, the under mandible of which is much longer than the upper, and compressed like a knife blade, the end being obtuse. The bird seems to feed as it skims low over the water, the under mandible grazing the surface. Like the terns, the Skimmers breed in communities.

This species is known by several names, such as "Razor-bill," "Cut-water," "Shear-water," "Sea Crow" and "Sea Dog;" the latter name it receives from its cries, which resemble somewhat the barking of a dog.

It breeds on Cobb's Island, Va., in the last of June. Mr. R. C. Stuart informs me that this species nests along the Gulf coast of Florida in May and June, depositing in hollows of the sand from three to five eggs. He says he has frequently taken sets containing five eggs. Mr. C. S. Shick, of Sea Isle City, N. J., writes me that he has taken eggs as early as May 26, on the New Jersey coast. His experience is that four eggs are oftener laid than three, which is generally stated to be the usual number. The eggs are among the most beautiful of all eggs; they are white and pale buff, rather coarsely spotted and blotched with brown, blackish-umber and lilac of varying shades, with neutral-

tint shell blotches; sizes range from 1.65 to 1.98 in length by 1.31 to 1.40 in breadth.

** *Diomedea exulans* LINN.

Wandering Albatross.

Hab. Southern seas, north very irregularly to Florida (Tampa Bay) and coast of Washington Territory.

This Albatross wanders over the vast waters of southern seas ranging as far north on the Atlantic coast of Africa as the Canary Islands, on that of South America to Trinidad Island and beyond. The bird has been taken in Europe, and it is admitted to the North American fauna on the grounds of its occurrence as stated in the habitat. It has been found breeding on various islands of the South Atlantic and Indian Oceans, on Prince Edwards, Crozete, and Kerguelen Islands lying southeast of Africa, and on the Island of Tristan d'Acunda to the southwest. At the latter place it breeds in January, nesting on the highest ledges of the cliffs. Dr. J. H. Kidder met with a number of these birds nesting on Kerguelen Island on the 2nd of January. The nests were upon tall mounds, built up of grass to the height of two or more feet from the ground, and, being of different heights, seemed to have been used again and added to year after year. Dr. Kidder counted twenty-three birds in sight at one time, each perched upon its nest. Driven from the nests and compelled to walk, the birds looked not unlike overgrown geese.*

The single egg is white, minutely sprinkled over the large end with brownish. Various specimens measure from 4.80 to 5.21 long by 3.08 to 3.25 broad; the average size is about 4.79 x 3.15.

81. *Diomedea nigripes* AUD. [700.]

Black-footed Albatross.

Hab. North Pacific, including west coast of North America.

The Black-footed Albatross is an abundant bird of the North Pacific Ocean. Like others of this family, it is noted for its protracted powers of flight, following vessels for hundreds of miles and subsisting on the refuse thrown overboard, which, with crabs, etc., is its main food.

Very little is known concerning the nesting habits of this species. It is said to breed on the small guano islands south-west of the Sandwich group in the North Pacific, depositing a single white egg in a depression of the soil, surrounded with a little sea-weed.

82. *Diomedea albatrus* PALL. [701.]

Short-tailed Albatross.

Hab. Pacific Ocean, including western coast of America, northward to Bering Sea.

This Albatross inhabits the Pacific Ocean at large. It breeds on

* Bulletin No. 2, United States National Museum, p. 20.

the lonely islands west of the Sandwich group. It is also supposed to breed on some of the islands off the coast of China and Japan and on some of the Aleutian Islands. This species requires many years before it attains perfect plumage, but the young are said to be easily distinguished from *nigripes*. It is a constant attendant of whaling vessels, feeding on the scraps of blubber or refuse thrown from the ships. It is easily caught with hook and line, and when taken on board is said to be unable to rise from the deck, as it requires a long range of surface on which to flap its wings. The single egg which this species deposits is white, equal-ended, and measures 4.20 x 2.60. It is laid on the bare ground.

[83.] *Thalassogeron culminatus* (GOULD.) [702.]

Yellow-nosed Albatross.

Hab. Indian and South Pacific Oceans; casual off the coast of Oregon.

Supposed to be a rare visitant on the Pacific coast north of the equator. A dead specimen answering the description of this species was washed up on the beach near the Golden Gate, and an example is said to have been taken as far north as the mouth of the Columbia River, Oregon. It breeds on the islands of the Southern Indian and South Pacific Oceans. A single egg is laid.

Mr. J. Parker Norris has a specimen of the egg of this species, which was collected by Captain Thomas B. Lynch, at Diego Ramirey Islands, near Cape Horn, February 8, 1886. It measures 4.30 x 2.72, and is dull white, faintly speckled with lavender and purplish. The specks form an indistinct wreath at the larger end, in the same manner that the eggs of Leach's Petrel are often marked. In fact, Mr. Norris says that this specimen looks like an egg of the latter seen through a powerful magnifying glass. Incubation in this case was slightly advanced. The nest consisted of mud scraped together in a heap on the ground. Mr. Emerson has an egg of this Albatross which measures 4.68 x 2.68; it was taken by Captain Lynch at Diegos Kavnen's rocks, S. by E. fifty-two miles from Cape Horn, January 12, 1880. The egg was fresh. The nest was composed of grass and mud on the outside, and lined with fine grass and feathers. The diameter outside at the top 12 inches, and at the base 18. Inside it was 10 inches broad by 5 deep. It was built on the top of rocks on a loamy plain.

The data accompanying Mr. Emerson's specimen states that the nests are placed close together, and they are very nicely and solidly built, lasting two or three seasons even in that hot climate.* Prof. Ridgway gives the average size of the egg as 4.18 x 2.63.

*Ornithologist and Oologist, Vol. XI, pp. 21-22.

84. *Phœbætria fuliginosa* (G.M.) [703.]**Sooty Albatross.**

Hab. Oceans of the Southern Hemisphere, northward to the coast of Oregon.

A great ocean wanderer, more common in the South than in the North Pacific regions. A rare visitor to the coasts of North America. This dusky species breeds on the islands off the coast of China and southward. It nests commonly on the islands that lie southeast of Africa, namely, Prince Edwards, Crozete, Kerguelen Islands and others. Here they breed in October and November, placing the nest in the cavity of some high, perpendicular rock. The nest is a conical mound, 7 or 8 inches high, hollowed at the top and rudely lined with grass. The single egg which this species lays is described as white, very long in proportion to its thickness; sometimes it is marked with spots about the larger end; size 3.95 x 2.63. The cries of this Albatross are said to be very loud, and not unlike the calls of a cat.

85. *Ossifraga gigantea* (G.M.) [704.]**Giant Fulmar.**

Hab. Southern oceans; casual off the coast of Oregon.

The largest of the Petrels, known as "Mother Cary's Goose," "Giant Petrel" and "Bone-breaker." In size it equals many of the Albatrosses, measuring about three feet in length, with a spread of wings measuring seven feet. The Albatrosses and Petrels are noted birds, of gull-like form, variegated with black and white or uniformly sooty in color. They are birds of the ocean, rarely landing except to breed. Among the seamen and whalers this large species is known as "Molly-hawk," "Gong," "Glutton Bird" "Nelly." It breeds on the islands of the South Seas—Bouvets, Prince Edwards, Crozete and Kerguelen Islands are some of its breeding places. Said to breed late in December, making the nest on elevated ground some distance from the sea. The Giant Fulmer Petrel also nests on the Falkland Islands, which lie east of the entrance of the Strait of Magellan in Southern South America.

Dr. J. H. Kidder found this species in considerable numbers in the vicinity of Kerguelen Island, feeding on the carcass of the sea-elephant. Its voracity and filthy habits reminded him strongly of the vultures. Like vultures, the birds so crammed themselves that they were unable to rise from the ground.* The egg is described as dirty white in color, rough to the touch, and its shape like that of a common goose; size 4.25 x 2.66.

* Bulletin of the National Museum No. 2, page 24.

86. *Fulmarus glacialis* (LINN.) [705.]**Fulmar.**

Hab. North Atlantic, south on the American coast to Massachusetts.

This species is commonly called Fulmar Petrel. It is found in light and dark phases of dress. Abundant in the North Atlantic and in the Arctic Oceans of America, Europe and Asia. The Fulmars constantly attend whaling ships out at sea and feed on the blubber of the whale, which they devour with voracity. This species is exceedingly numerous in the North Atlantic, congregating in thousands at St. Kilda, the most western of the Hebrides, on the west coast of Scotland. Others of its favorite breeding places are the Faroes, which are farther north; Iceland, Spitzbergen and Greenland.

On some of the rocky islands off the coast of Spitzbergen thousands of Fulmars breed in company with Brunnich's Guillemot, Black Guillemot, and the Kittiwake Gull. The abundance of the Fulmar at some of its breeding places in Greenland is something astonishing, nesting as they do in myriads on the inaccessible cliffs in mountainous places, depositing the single white egg in the crevices or on the ledges of rocks facing the sea. The young are at first fed by regurgitation, upon oil which is of a clear, amber color. This the birds, old and young, vomit upon the slightest provocation, imparting to them, their nests, and even their breeding grounds a disagreeable odor. The oil is one of the important commercial productions of St. Kilda. The single egg is pure white; in shape resembling a hen's; shell brittle. Four eggs from Iceland measure 2.96 by 2.04, 2.74 by 2.91, 2.99 by 2.02, 2.97 by 2.01.

Besides the typical *F. glacialis* in the Atlantic, there is also a smaller race, *F. g. minor*, Lesser Fulmar,* which occurs as far south on the American side as the coast of New England.

86b. *Fulmarus glacialis glupischa* STEJN. [705a.]**Pacific Fulmar.**

Hab. North Pacific, south on the American coast to Mexico.

This race is also known in light and dark phases of plumage. Dr. Leonhard Stejneger found it breeding in enormous numbers in suitable places on the islands in Bering Sea off the coast of Kamtschatka. Their rookeries were in high and steep rocky bluffs and promontories, rising out of the sea 300 to 800 feet. Dr. Stejneger says: "I have spent hours under their rookeries listening to their whining voice and watching their high and elegant flight in sailing out and in and around the cracked rocks, like bees at an immense bee-hive." The egg is

* No. 86a, A. O. U. Check List.

single and pure white. Five eggs collected on Copper Island, July 12th and 13th, exhibit the following dimensions: 75 by 49, 71.5 by 48.5, 71.5 by 51, 68 by 50, 71.5 by 48.5 mm* These eggs all belonged to the dark phase of birds.

86. *Fulmarus glacialis rogersii* (CASS). [705b.]

Rodger's Fulmar.

Hab. Bering Sea.

Rodger's Fulmar is similar to the preceding, but there is no dark phase known. Its habitat seems to be restricted to the islands of Bering Sea and some portions of the North Pacific, nesting especially in great abundance on the islands of the Prybilof group. Its general habits, nesting, eggs, etc., are the same as those of the preceding. Size of egg 2.83 x 1.91.

89. *Puffinus major* FABER [709.]

Greater Shearwater.

Hab. Atlantic Ocean.

A wanderer over the entire Atlantic Ocean, and sometimes seen in immense flocks skimming the billows in its light and graceful manner, similar to the smaller Petrels. Its flight is described as most beautiful, gliding as it does through the air without visible motion of its wings. It also swims and dives with ease. Common Atlantic and Wandering Shearwater are other names by which it is known.

There appears to be very little knowledge in the regard to the nesting habits of the Greater Shearwater. It is known, however, to breed in the islands of the North Atlantic and is often confounded with other species of Shearwaters.

Dr. Brewer describes an egg of this bird, collected on an island of South Greenland, as being nearly oval in shape, with a ground color, originally white, but soiled by the peaty black earth from which it was excavated; size 2.88 x 2.00. Another from the same locality is of smaller size, and yellowish-white, which measures 2.75 x 1.85.

[90.] *Puffinus puffinus* (BRUNN). [711.]

Manx Shearwater.

Hab. North Atlantic, chiefly the eastern side; rare or casual off the North American coast (?).

In many places in the regions of the Mediterranean and Adriatic Seas and the Grecian Archipelago this is a common species. It is said to wander to Greenland. Breeds on the islands of Pantellaria, Gozo, Malta, and other smaller islands of the Mediterranean, depositing a single pure white egg on the bare ground, in crevices, or under fragments of rocks.

This species also breeds on the islands off the southern coast of

* 2.95 by 1.92, 2.85 by 1.90, 2.85 by 2.00, 2.67 by 1.96, 2.85 by 1.90.

France, where it nests in cavities under rocks, laying upon the ground. The eggs are described as pure white, sometimes tinted with gray, measuring 2.36×1.62 . The principal food of this bird is fish, mollusks and crustaceans, which it collects from the surface of the water.

92. *Puffinus auduboni* FINCH. [712.]

Audubon's Shearwater.

Hab. Atlantic Ocean, from New Jersey southward.

Audubon's Dusky Shearwater is found on the Atlantic coast of the United States from New Jersey to Florida. It wanders to the coast of Africa, where it is said to breed on the islands lying on the west coast. It breeds in the Bermudas and the Bahamas, and nests especially in abundance on most of the uninhabited Keys of the latter group; here they breed in March, depositing the single white egg in holes in the rocks. A nest is made consisting of a few dry twigs. Both sexes incubate and when caught on the nest the birds do not offer any resistance. The egg of this species is of a clear chalky white color, oval in shape and measures from 1.90 to 2.32 long by 1.30 to 1.45 broad.

93. *Puffinus gavia* (FORST.) [713.]

Black-vented Shearwater.

Hab. Pacific Ocean, chiefly southward.

This species is supposed to occur along the whole Pacific coast as far north at least as Oregon. Little seems to be known regarding its general habits; the eggs are said to resemble those of other members of this family.

94. *Puffinus stricklandi* RIDGW. [714.]

Sooty Shearwater.

Hab. North Atlantic, on the American coast south to the Carolinas.

Here is a Petrel that escaped the observations of the earlier ornithologists, Wilson, Nuttall, and Audubon. Recent explorers, however, have discovered that it is a common bird off our Atlantic coast, and that far north it breeds in immense colonies on the islands of the sea. It burrows in the ground to the extent of several feet and deposits a single white egg. The average size of the egg is 2.58×1.78 .

95. *Puffinus griseus* (GMEL.) [715.]

Dark-bodied Shearwater.

Hab. South Pacific, north to Lower California.

The Dark-bodied Shearwater is known to breed on Cornwallis and Chatham Islands, east of New Zealand, in the South Pacific Ocean, and also on other islands lying farther south.

The bird burrows in the peaty ground a horizontal hole three or four feet deep and turning slightly to the right or left. At the end of this burrow a rude nest is formed of twigs and dry leaves, where one

white egg is laid; size 2.25 x 1.45. It is stated that the old birds of this species roost along the shores of the islands during the night and the noise they make is said so be "something absolutely frightful."

[101.] *Bulweria bulweri* (JARD. & SELBY.) [718.]

Bulwer's Petrel.

Hab. Eastern Atlantic, including coasts of Europe and Africa.

This Petrel is known to breed on the Canary and Madeira Islands and others on the northwestern coast of Africa. It is said to be an occasional visitor to the Bermudas and accidental in Greenland. It nests in burrows in the soft earth under overlying boulder-rocks and in deep crevices in cliffs. The bird is stated to be nocturnal in its habits, never flying about in the daytime. The single egg which this species lays is oval in shape, equal-ended, and pure white in color; sizes range from 1.59 to 1.76 long, by 1.17 to 1.23 broad.

104. *Procellaria pelagica* LINN. [721.]

Stormy Petrel.

Hab. Atlantic Ocean; on the American side from the Newfoundland Banks northward. West coast of Africa and coast of Europe.

The "Mother Carey's Chicken" of the sailors. Common in various portions of the Northern Atlantic; rarely found near land except when breeding or during severe storms. It is not known to breed on the American coast, but it does in various portions of the Atlantic coast of Europe. In the Mediterranean it breeds in abundance. Nests commonly on nearly all the islands on the coast of Scotland—the Hebrides, Shetland, Orkeys and Farøes; laying is begun in the latter part of June.

Dr. Coues says: "This is the rarest of the three little black white-rumped 'Mother Carey's chickens' of our Atlantic Coast, easily distinguished by its short legs and square tail; Leach's, the most numerous, is also short-legged, but larger and fork-tailed; Wilson's is intermediate, with square tail, but very long, stilt-like legs, flat claws, and a yellow spot on the webs."

The single egg is deposited in holes in high cliffs or in burrows made by the birds under boulders lying on the ground. The cavity is lined with twigs and leaves. The egg is white, obscurely dotted with reddish brown on the larger end; sizes range from 1.09 to 1.12 long by .78 to .83 broad.

105. *Oceanodroma furcata* (GMEL.) [726.]

Fork-tailed Petrel.

Hab. Pacific Ocean, on the American coast south to Oregon.

On all of the less populated islands of the Aleutian group as far

east as Unalashka this species is found breeding in the month of June. The nests are made in burrows or holes about a foot deep in steep banks; the termination of the cavity being thinly lined with fine roots and dry grass. This species, like Leach's Petrel, when caught has the habit of ejecting a reddish oily fluid which has a strong, disagreeable smell; the nest, eggs, and even the old dry skins of the bird are forever infected with it.

A small colony of these graceful petrels were found breeding on Copper Island, in Bering Sea, by Dr. Stejneger. The eggs were taken July 12th, a single one in each nest, were deposited in deep holes in the steep basaltic rocks, three feet or more deep, and it was only with great difficulty that a few could be secured. Some males and some females were taken on the nests. The eggs were in different stages of incubation, white without gloss, with minute dark specks evenly dusted over the blunt end; in one the specks were a little larger, purplish-black, forming a circle around the blunt end. Three eggs measure 34×26 , 32.5×25 , 34×26.5 mm*.

106. *Oceanodroma leucorhoa* (VIEILL.) [723.]

Leach's Petrel.

Hab. North Atlantic and North Pacific Oceans.

Leach's Fork-tailed Petrel at various seasons of the year wanders over a large portion of the watery expanse of the globe. It breeds in the months of March, April, May, June, July and August, according to locality, in the northern latitudes of Europe, Eastern and Western North America. On the Atlantic coast of North America from Maine northward it nests generally in June and July. Thousands breed on some of the islands on the northern New England coast, especially those in the vicinity of Grand Manan and the small islands of Casco Bay. On the Pacific coast Mr. Walter E. Bryant records Leach's Petrel nesting in March; on Guadalupe Island, which is situated two hundred and twenty miles southward and westward of San Diego, California, Mr. Bryant found the birds breeding in burrows under boulders and fallen branches; these places were from one to three feet in length, at the extremity of which were enlarged chambers where the single egg was laid upon a few pine needles. The egg, Mr. Bryant describes as shaped much like that of a pigeon's, white in color, one end being wreathed with a fine spattering of minute dots of reddish-brown and pale lavender.†

The average size of fifty eggs taken March 4th and 5th, is 35.7 by

* 1.34×1.02 , $1.28 \times .98$, 1.34×1.04 .

† Additions to the Ornithology of Guadalupe Island. By Walter E. Bryant. Bulletin 6, California Academy of Science.

27 mm.* The offensive reddish, oily fluid which this species almost invariably ejects when handled or irritated probably serves as food for the young. The male and female assist in the duties of incubation and often both sexes may be found sitting side by side in their burrow.

Eggs collected on the Atlantic coast are chalky-white, finely dotted on the larger end, often in a circle, with purplish-red and lilac. Twenty specimens average in size 1.34 x 1.00. On approaching the breeding ground of the petrels, not one of them is to be seen. Many of the birds are far out at sea, and as night comes on those in their burrows come forth and those out at sea return, and the air seems alive with them flitting about like bats and uttering their peculiar clattering notes.

108. *Oceanodroma homochroa* (COUES.) [725.]

Ashy Petrel.

Hab. Coast of California.

This, Mr. Emerson informs me, is the rarest of the birds that breed on the Farallons; nesting anywhere in cavities under bowlders, laying a single egg.

Two eggs collected June 15, 1885, and June 8th, 1886, measure respectively 30 x 23, 31 x 23.5 mm.†

Mr. A. M. Ingersoll first found the egg of this species on South Farallon in June, 1885. He described the egg as dull creamy-white, with a circle of reddish spots around the large end, so fine as to be almost indistinct. The large end is somewhat flattened, like the large end of an acorn. It measures 1.18 x .94.‡

109. *Oceanites oceanicus* (KÜHL.) [722.]

Wilson's Petrel.

Hab. Atlantic and Southern Oceans.

Wilson's Stormy Petrel is one of the best known and commonest of the smaller petrels. It is to be met with nearly everywhere over the entire watery surface of the world—far north in the icy regions of the Arctic seas and south to the sunny isles of Southern oceans. Its general habits are the same as those of Leach's Petrel.

Dr. J. H. Kidder found it on Kerguelen Island, southeast of Africa. He had previously seen them at the sea coast off the Cape of Good Hope, and, on December 14, saw them out by day feeding on the oily matter floating away from the carcass of a sea-elephant. The

* 1.40 x 1.06—This description of the eggs refer to the new subspecies of this Petrel, since described by Mr. Bryant in a paper read before the California Academy of Sciences July 18, 1887. He has named this local variety, Guadalupe Petrel, *Oceanodroma leucorhoa macrodactyla*. It is similar to *O. leucorhoa*, but larger and darker. White of upper tail coverts more restricted, and the ends of coverts broadly tipped with black. Pileum darker than back, lighter anteriorly. Bill broader and deeper at base than that of *leucorhoa*.

† 1-18 x .91, 1.22 x .93.

‡ Ornithologist and Oologist. Vol. XI, p. 21.

birds, he says, frequent the rocky parts of hillsides, and, flitting about like swallows, they catch very minute insects.

Dr. Kidder remarks that he never succeeded in finding the egg, but learned from Rev. Mr. Eaton, who found one on Thumb Mountain December 8, that this species nested under large rocks not far from the beach. The egg found was white.

The species was supposed to nest among and under the rocks, habitually, at considerable elevation above the sea.

112. *Phaethon flavirostris* BRANDT. [654.]

Yellow-billed Tropic Bird.

Hab. Tropical and sub-tropical coasts of America north to Florida.

In appearance this bird resembles a large tern; the principal external peculiarity is its long middle tail-feathers; the general color of the plumage is white, tinged with salmon. Its habits are similar to those of the terns.

It is inter-tropical in its distribution, of a wandering disposition, breeding on the islands of mid-ocean thousands of miles apart. The bird is noted for its elegant, airy and long-protracted flight. On St. Bourdon, Mauritius and other islands east and south of Madagascar, this species breeds in the crevices of the rocks of inaccessible cliffs, and in hollow trees. In the Bermuda Islands it nests about the first of May in holes in high rocky places along the shores. Here its favorite resorts are the small islands of Great Sound, Castle Harbor and Harrington Sound. The Phaeton, as this bird is called, breeds in the Bahamas in holes in the perpendicular faces of cliffs and also on the flat surfaces of rocks. A single egg is laid, which has a ground-color of purplish brownish white, covered in some specimens almost over the entire surface with fine reddish chocolate-colored spots; in some specimens this coloring approaches blackness. The average size of the eggs is 2.21 x 1.54.

113. *Phaethon æthereus* LINN. [655.]

Red-billed Tropic Bird.

Hab. Coast of tropical America, north on the Pacific coast to Lower California.

The Red-billed Tropic Bird occurs along the Pacific coast of South America, in the West Indies, and as far north as Cape St. Lucas. In one instance it is said to have straggled to Newfoundland. Breeds on the various islands off the coast of Mexico. Its breeding habits are said to be like those of the Yellow-billed species.

The eggs are creamy-white, with a purplish tinge, marked with fine dots of chestnut-brown. The sizes vary from 2.20 to 2.37 in length by 1.55 to 1.70 in breadth.

[114.] *Sula cyanops* SUND. [651.]**Blue-faced Booby.**

Hab. South Pacific, West Indies and Southern Florida.

The Gannets are birds that resemble very closely the cormorants, and, again, they may be said to look like geese—a name often applied to them. They are large, heavy sea-birds, noted for their vigorous protracted flight. They procure their food by plunging into the water from a height, completely submerging themselves, often for several minutes. The Blue-faced Gannet inhabits the Southern Pacific Ocean as far southwest as Australia. In some of the Islands of the Paumotu Group this species deposits its eggs on the dry sandy beaches of lagoons. Both sexes incubate. When a colony of these birds is disturbed none of them leave their nests, but remain gravely at their stations, and hiss at the intruder like a domestic goose. On the Bahamas this species nests in the latter part of March, laying always two eggs. These are white, covered with a calcareous deposit; sizes range from 2.45 to 2.60 long by 1.67 to 1.75 broad.

115. *Sula sula* (LINN.) [652.]**Booby.**

Hab. Tropical and sub-tropical coasts and islands of America, north to Georgia.

The Booby Gannet is said to breed on some of the islands about the extreme southern coast of Florida. In the Bermuda Islands, and in some of the Bahamas, and many of those along the coasts of Central and South America, this Gannet congregates by thousands at its breeding places, where it deposits its eggs on the sand of the beaches, or on the bare rock; no nest whatever is made. The food of this species consists chiefly of flying-fish and small mullets, which they disgorge in a half macerated state into the open mouths of their young. Audubon found mullets weighing more than a half a pound in the bodies of the gannets he examined.

In various islands of the southern oceans the Booby constructs its nest of sticks and weeds on bushes and low trees. Here it is said to lay but one egg.

Observations of those who have collected in the West Indies disclose the fact that the complete nest complement is *two* eggs. These are of a uniform dull, chalky white in color, with great variations in sizes, measuring from 2.16 to 2.64 long by 1.50 to 1.57 broad.

[116.] *Sula piscator* (LINN.) [653.]**Red-footed Booby.**

Hab. Coast and islands of tropical and sub-tropical seas, north to Western Mexico and Florida.

The Red-footed Booby is characterized by the same general habits

as others of its family. Its nesting is essentially the same as that of the Blue-faced Gannet. Two eggs are laid, white in color, elongate-ovate in shape, with a calcareous deposit on the surface; size, 2.57x1.80.

117. *Sula bassana* (LINN.) [650.]

Gannet.

Hab. North Atlantic; south in winter to the Gulf of Mexico and Africa. Breeds from Nova Scotia and British islands northward.

The White Gannet, or Solan Goose, is widely distributed throughout the Northern Atlantic Ocean, and is more or less a resident wherever found.

Some of the most noted breeding places of this bird are on the islands about the coasts of Scotland, notably the great Bass Rock at the mouth of the Firth of Forth. Here it breeds in tens of thousands, with the Gulls, Cormorants and Puffins that inhabit the rock. Another of its breeding stations is St. Kilda. The precipitous cliffs at this place rise to the height of 1,400 feet. Here the Gannet breeds in countless numbers. This bird also nests in the Faroe Islands and in islands on the coast of Iceland. Small colonies are to be found breeding in Labrador. One of its well known breeding places on the coast of North America is "Bird Rocks," in the Gulf of St. Lawrence. The nests are built on the summits and ledges of the rocks. They are made of sea-weed, mud and small stones, raised to about ten inches in height and eighteen in diameter. In some cases the nest is made of straw and other available material. A single egg is laid. It resembles very much the average Brown Pelican egg, with, however, these differences: Its general shape is more elongated, and the calcareous deposit on it is thicker; the color is chalky-white; sizes range from 3.25 to 3.50 long by 1.65 to 2.05 broad.

118. *Anhinga anhinga* (LINN.) [649.]

Anhinga.

Hab. Tropical and subtropical America, north to the Carolinas and Southern Illinois.

Known as the Water Turkey, Darter and Snake Bird. It often swims with the body submerged, its head and long neck in sight like some kind of water serpent—hence the latter name. This singular-looking bird is very common in summer in the South Atlantic and Gulf States to North Carolina, frequenting the almost impenetrable swamps. It is a constant resident of Florida. The bird dives with amazing ease, and when alarmed will drop from its perch with scarcely a ripple on the surface of the water, and will swim beneath the surface to a safe distance before reappearing. It has also the curious habit of quietly sinking like a grebe.

The nests of the Anhinga are variously placed—sometimes in low

bushes at an elevation of only a few feet, or in the upper branches of a high tree, but always over water. Sometimes this bird breeds in large colonies with various species of Herons. The eggs are from three to five in number, bluish or dark greenish-white, with a white chalky incrustation; they are narrow and elongated in shape; the sizes range from 2.00 to 2.30 long by 1.30 to 1.40 broad.

119. *Phalacrocorax carbo* (LINN.) [642.]

Cormorant.

Hab. Atlantic coasts of Europe and America, south in winter on the coast of the United States, casually, to the Carolinas.

The Common Cormorant is very generally distributed throughout nearly the entire northern hemisphere. It breeds in the northern parts of Europe and Asia, and in North America from the Bay of Fundy to Greenland. The Cormorants are curious birds of strange figure; the outer surface of the plumage in most species normally is of a dark lustrous greenish-black, but subject to great changes, making their study very difficult. The eyes as a rule are green, a color rarely seen in birds. They feed principally upon fish and their voracity is proverbial. This species breeds in vast numbers on the rocky shores of Labrador and Newfoundland; making the nest upon the tops of ledges or on projections and in the crevices of precipitous rocks, which are covered with the excrement of the birds. It is composed of sticks, kelp and sea weed. Like all the Cormorants this species is gregarious and breed in communities. They are all known under the common name of Shag.

Mr. Frazar met with a colony of this Cormorant in company with the Double-crested species on the coast of Labrador. Many of the nests contained large young June 19. Nests of the Double-crested Cormorant were placed wherever the ledges would hold them, while those of the Common species were built close to the top. The nests of the Common Cormorant usually contained four or five eggs, and several sets were taken of six. The eggs average larger than those of the Double-crested; the sizes vary from 2.38 to 2.65 long by 1.29 to 1.60 broad. Color, pale greenish; form, elliptical.

120. *Phalacrocorax dilophus*. (Sw. & RICH.) [643.]

Double-crested Cormorant.

Hab. Atlantic coast of North America; southward in the interior to the Great Lakes and Wisconsin.

In Eastern North America the Double-crested Cormorant or "Crow Duck" is a common species, breeding on the coast from the Bay of Fundy northward and in many of the inland lakes, reservoirs and marshes. It is said to have nested years ago in Ohio, at the Licking

county Reservoir, and other similar places in the northern part of the State.

On some of the rocky islands of the lakes and large, isolated bodies of water in Iowa and Wisconsin, this Cormorant breeds in great numbers. Mr. Frazar met with colonies of it breeding on the islands and cliffs along the coast of Labrador. The nests were placed on ledges of the rocks; they were composed of seaweed and kelp, freshly pulled from the bottom of the ocean. None of the nests contained more than four eggs. On the islands of inland waters this Cormorant often constructs its nest on low spreading trees. The eggs in number range from two to four; bluish-green in color, with the usual chalky substance over their surface; sizes vary from 2.09 to 2.27 long by 1.35 to 1.50 broad. The eggs are of a more regular oval than those of *P. carbo*.

120a. *Phalacrocorax dilophus floridanus* (AUD.) [643a.]

Florida Cormorant.

Hab. Coasts of the South Atlantic and Gulf States, northward in the interior to Southern Illinois.

A smaller and more southern variety of the Double-crested species; resident in Florida and along the Gulf coast, where it nests in communities on the mangrove islands. The nests are always placed in mangrove bushes and are composed of the twigs and very often lined with the leaves of this plant.

Mr. Stuart has often observed nests made entirely of the branches of the mangrove, with the green leaves still on them. In the vicinity of Tampa and Charlotte Harbor the birds nest in May and June, and below Cape Sable in the months of October and November. The eggs are three or four in number. Six selected specimens measure 2.30 x 1.43, 2.28 x 1.38, 2.36 x 1.45, 2.25 x 1.40, 2.51 x 1.50, 2.42 x 1.40.

120b. *Phalacrocorax dilophus cincinatus* (BRANDT.) [643b.]

White-crested Cormorant.

Hab. West coast of North America, south to California.

Captain Charles E. Bendire met with this variety of the Double-crested Cormorant breeding in large numbers on several low, narrow islands of Lake Malheur, in the southwestern portion of Oregon. The birds began to lay about the 20th of April. The islands were also occupied by White Pelicans and Great Blue Herons as a breeding place.

About two-thirds of the Cormorants' nests were made on the ground, and they were composed of pieces of drift, small sticks, etc. The balance were placed on low greasewood bushes. They were lined with pieces of bark and *tule* and coarse grasses, and placed very close

to the water's edge, so that when the lake was rough the water must have splashed into many of them.

The eggs, four or five in number, are described as being of an elongated oval, pale green, covered more or less with chalky coatings. They average 2.42×1.48 . Captain Bendire states that the largest set in a number exhibits the following measurements: 2.86×1.60 , 2.70×1.65 , 2.66×1.64 , 2.70×1.60 . A single egg was found measuring 1.80×1.20 .*

120c. *Phalacrocorax dilophus albociliatus* RIDGW.

Farallone Cormorant.

Hab. Coast of California, south to Cape St. Lucas and islands of the coast of Mexico.

This bird is as common on the Farallones as Baird's Cormorant, and it nests on the rough ridges or points of rocks overlooking the islands. About the first of May they may be seen carrying weeds and dry sea kelp to their nesting sites, where they construct a flat, loose and bulky platform, which is, on the whole, quite a shallow structure.

Their nesting is similar to that of other Cormorants, and they may be observed sitting on their empty nests for hours at a time, probably, as Mr. Emerson suggests, for the purpose of working out the hollow of their nests with their large feet, for which purpose they are so well suited.

By the middle of the month they have begun to deposit their lime covered eggs. These compare well with those of Brandt's Cormorant, and are a little larger than the eggs of Baird's. A set of five in Mr. Emerson's possession measure as follows: 60×50 , 61×39 , 62×39 , 60×40 , 62×39 mm.† respectively; these were taken May 20, 1886; their general form is rather ovate oval, and quite round at the greater end. Their color and general characteristics are the same as those peculiar to other Cormorants' eggs—light greenish in color and coated with a chalky substance.

Four eggs seem to be the number commonly laid; both male and female assist in the process of incubation, one remaining on the nest or beside it while the other is off on a short fishing excursion.‡

121. *Phalacrocorax mexicanus* (BRANDT.) [644.]

Mexican Cormorant.

Hab. Southern United States, north to the interior of Kansas and Southern Illinois.

The Mexican Cormorant is a tropical species found on the coasts and inland marshes of Mexico, Yucatan, and Central and South America, where it breeds. It is mentioned by Dr. Merrill as being a common summer resident in Southwestern Texas, in the vicinity of Fort Brown,

* Ornithologist and Oologist, VII, p. 138.

† 2.36×1.57 , 2.40×1.54 , 2.44×1.54 , 2.36×1.57 , 2.44×1.54 .

‡ From my article on the eggs of this Cormorant in *Forest and Stream*, Vol. XXVIII, p. 153

where it doubtless nests in the dense growth of trees and bushes that border most of the lagoons.

The breeding habits of this species are similar to those of *P. d. floridanus*—congregating in large communities and nesting in trees or bushes. In some places along the South American seacoast the bird nests on rocks as well as on shrubbery.

The eggs are three or four in number, greenish-white in color, with the usual chalky substance on their surface; sizes range from 2.10 to 2.35 long by 1.30 to 1.40 broad.

122. *Phalacrocorax penicillatus* (BRANDT.) [645.]

Brandt's Cormorant.

Hab. Pacific coast of North America, from extremity of Lower California to Washington Territory.

The most common of the Cormorants breeding on the Farallones. Its habits are the same as those of the other species, but it is of a more sociable disposition, congregating in large communities to breed on the shelving rocks and ridges. It does not always choose the most inaccessible places for nesting. Like the others, it has great difficulty in constructing its nest, for as fast as it gathers the weeds together, the thieving Western Gulls make away with them. So often are the Cormorants molested in this manner that they frequently change their place of nesting. The eggs are three, usually four, sometimes five in number, light greenish-blue, with a chalky deposit on the surface. They measure as small as 56 x 38 mm., and as large as 66.5 x 38 mm.*

123. *Phalacrocorax pelagicus* PALL.

Pelagic Cormorant.

Hab. Aleutian and Kurile Islands, and Kamtschatka, south to Japan.

This beautiful Cormorant is abundant in the Aleutian and Kurile Islands and those along the coast of Kamtschatka, where it breeds.

Dr. Leonhard Stejneger says it is a very abundant resident of Copper and Bering Islands, breeding on all the most rugged and steep promontories which rise immediately from the sea, as well as on the outlying islets and stones. Eggs, three or four in number. Three eggs collected at Bering Island, June 8, exhibit the following dimensions: 56 by 37.5, 53 by 37, 59 by 35, mm.† Two from Copper Island, taken July 14, measure 59 by 34.75, 58 by 35, mm.‡ The color and general characteristics of the eggs do not differ from those of other cormorants.

123a. *Phalacrocorax pelagicus robustus* RIDGW. [646.]

Violet-green Cormorant.

Hab. Coast of Alaska.

On the rocky coasts and islands of Alaska the Violet-green Cormo-

* 2.20 x 1.50, 2.62 x 1.50.

† 2.20 x 1.48, 2.09 x 1.45, 2.32 x 1.46.

‡ 2.33 x 1.37, 2.28 x 1.38.

rant is very abundant. Here it nests on the ledges and projections of high cliffs, making the nests of sea-weed, grasses and aquatic plants, which are cemented together with the excrements of the bird. In all respects its general habits, nesting and eggs, are similar to those of the Pelagic Cormorant. The average size of the eggs is 2.25 by 1.45.

123*b*. *Phalacrocorax pelagicus resplendens* (AUD.) [646*a*.]

Baird's Cormorant.

Hab. Pacific coast of North America, from Cape St. Lucas north to Washington Territory.

On the Farallones this species is less common than *Phalacrocorax dilophus albociliatus* or *P. penicillatus*. The nests are built more frequently on inaccessible places. The same rookeries are used each season, the birds repairing the nests by adding a few pieces of weed or sea kelp. Colonies of eight or ten pairs nest on the shelves of perpendicular or overhanging rocks. The birds will occupy the same nest after being robbed, and setting commences after the first egg is laid, in order to protect it from the gulls. Mr. Emerson says that by June the birds have begun to deposit their eggs, which are three or four in number, pale greenish-blue in color, with the usual chalky coating.

Mr. Bryant states that the eggs of Baird's Cormorant may usually be known by their small size, the average dimensions of thirty-six specimens (nine sets of four) are 55.5×36.5 mm.,* the largest 59×36 , and the smallest 52×35 mm.†

124. *Phalacrocorax urile* (GMEL.) [647.]

Red-faced Cormorant.

Hab. Islands of Bering Sea and coast of Kamtschatka.

The Red-faced Cormorant is a common species on the islands of Bering Sea, especially on St. George and St. Paul Islands of the Pribilof Group. Breeds commonly on some of the Aleutian Islands. Dr. Stejneger mentions it as being less common on Bering and Copper Islands than *P. pelagicus*. He states that the eggs of the two species can not be confounded; those of the Red-faced being considerably larger than those of the *pelagicus*, and the green color of the eggs when looked at through the shell is totally different,—much more bluish in the former, against yellow in the latter. The nests are built on the projections of the narrow shelves or ledges along the face of a cliff, the material used being seaweed, ferns, grasses, etc., which are matted together largely with the excrements of the bird itself. The young are fed on small fish, crabs and shrimps, and in a short time the nesting places become very filthy, as a large portion of the food brought by

* 2.19×1.44 .

† $2.32 \times 1.42, 2.05 \times 1.33$.

the old birds is strewn over and around the nests. The eggs vary in size from 2.30 to 2.55 long by 1.50 to 1.55 broad. Three eggs collected by Dr. Stejneger on Copper Island, July 14, measure 61 x 40, 63.5 x 39, 66 x 37 mm.*

125. *Pelecanus erythrorhynchos* GMEL. [640.]

American White Pelican.

Hab. Temperate North America, north in the interior to about latitude 61°, south to Central America; rare or accidental in the Northeastern States; abundant in the Middle Province and along the Gulf coast; common on the coast of California and Western Mexico.

The White Pelican is generally common west of the Mississippi, breeding from Utah northward. It was formally known to breed in various parts of Florida. Captain Charles E. Bendire found it nesting in large numbers on several small islands of Lake Malheur, in southeastern Oregon. It is common on various lakes in the Red River Valley, in British America.

I am informed by Prof. Marcus E. Jones that several thousand of White Pelicans are permanent residents of Great Salt Lake, Utah, breeding on the islands twenty miles out in the lake. They begin to lay about the first of May or two weeks earlier, according to the season, and fresh eggs are frequently found as late as July. The usual number of eggs, he says, is two, rarely three or four.

The birds make their nests on the ground between the clumps of white sage (*Atriplex confertifolia*) that grow on the islands. They scrape the sandy soil into a heap about six inches high on the outside of the nests and arrange dry twigs without system; the nests are about a foot in diameter with a slight depression at the top. Prof. Jones says the birds travel sixty miles to catch fish for themselves and young, and they often vomit up the contents of their stomach on the ground, which, with the great heat on the islands at the nesting time, soon decay. The stench of the rookeries and the noise of the birds are almost intolerable.

Captain Bendire found two to be the usual number of eggs laid, although three and four to a nest was by no means rare, and occasionally as many as five were found.

The eggs are dull, chalky white, in color, with a calcareous deposit on them, and always more or less blood stained. Captain Bendire gives the average size to be about 3.45 x 2.30, and measurements of a few selected specimens out of several thousand are as follows: 4.08 x 2.15, 4.04 x 2.20, 4.01 x 2.19, 3.99 x 2.20, 3.72 x 2.40, 3.86 x 2.55, 3.87 x 2.32, 3.62 x 2.40, 3.60 x 2.40, 3.57 x 2.35, 3.20 x 2.51, 3.17 x 2.23, 3.20 x 2.21; two runt eggs, 2.69 x 1.88, 2.46 x 1.73. †

*2.40 x 1.57, 2.50 x 1.54, 2.60 x 1.46.

†Ornithologist and Oologist. Vol. VII., p. 130.

126. *Pelecanus fuscus* LINN. [641.]**Brown Pelican.**

Hab. Atlantic coast of tropical and subtropical America, north to North Carolina; accidental in Illinois.

This Pelican is an abundant bird, and constant resident of Florida and southward into the tropical regions. It is said, when feeding, to plunge for its prey like a gannet, and does not scoop them while swimming, like the White Pelican. Like the white species, however, it selects particular localities for breeding, and will return to them from year to year. Pelican Island, in the Indian River, Florida, is a noted breeding ground, where thousands congregate for this purpose. Here they breed in March and April. Mr. Stuart says they breed in large communities on the islands along the Gulf coast, most always placing the bulky nests in mangrove trees; often as many as a dozen nests are built in a single tree. They are made of sticks and weeds, lined with grasses. Many nests are also placed on the ground. Along the gulf coast fresh eggs may be found in May and June. From two to five eggs are laid, three being the most common number. Six selected specimens measure: 2.85×1.95 , 3.02×2.04 , 3.03×1.87 , 3.08×1.89 , 3.00×2.01 , 3.12×1.87 . They are chalky white, and in every respect, except size, resemble those of the White Pelican.

127. *Pelecanus californicus* RIDGW.**California Brown Pelican.**

Hab. Pacific coast, from Washington Territory to Mexico and beyond, and probably to Mexico and Central America.

The general habits, nesting and eggs of the Brown Pelican found on the Pacific coast are exactly the same as those of *P. fuscus*. It is a larger bird and has a red pouch during the pairing season.

It is said to breed on islands on the western coast of Mexico, and inland marshes. Breeds abundantly in Honduras, along the coasts and in the interior.

128. *Fregata aquila* (LINN.) [639.]**Man-o'-War Bird.**

Hab. Tropical and subtropical coasts generally; in America, north to Florida, Texas, and California, and casually on the Atlantic coast to Nova Scotia.

This great bird is known by several names, such as Frigate bird, Frigate Pelican, Man-of-War's bird, and "Hurricane bird." The latter name comes from the West Indies, where its appearance is said to be prognostic of bad weather, always flying low just before a gale. It is a maritime bird inhabiting tropical and subtropical coasts of the globe, but often wanders far from its home in the tropics. A specimen, which is now in the possession of Dr. Renshaw, of Sugar Grove, Ohio, was

taken by Mr. Emmet Adcock in Fairfield county, Ohio, in the Spring of 1880.

The Frigate bird is occasionally met with on the southern coasts of Europe and on those of Africa—on Ascension Island and the Island of St. Helena. In the Atlantic it visits the Bermudas. On the Pacific coast it wanders as far north as San Francisco, and breeds on islands off the coast of Western Mexico. It is said not to breed anywhere on the Gulf coast except at two points at Key West.

This bird is noted for its majestic flight and graceful ærial motions, often soaring to sublime elevations. It may be known by its immense wings and deeply forked tail, and colors of brownish-black, glossed with green.

It is a constant resident of the Bahamas, breeding on some of the Keys in March. The nests are placed upon the mangroves, and are composed of sticks loosely thrown together; sometimes they are made on the bare rocks. The Frigate bird breeds in large communities on the islands off the Pacific coast of Central America, nesting on high trees and low shrubs. A single egg is laid, of a uniform, chalky white color, and oval in shape; sizes range from 2.50 to 2.75 long, by 1.70 to 1.80 broad.

129. *Merganser Americanus* (CASS.) [636.]

American Merganser.

Hab. North America generally.

The Sheldrake, Goosander or Merganser, as it is variously called, is a common bird throughout North America, breeding from the Northern States northward. It has lately been found breeding in New Mexico; Mr. N. S. Goss having seen a female with four little ones July 2, on the Pecos River.* Is very abundant on fresh as well as salt waters in spring and fall. The three species of Mergansers or Sheldrakes with the "saw-bill" are commonly called "Fish Ducks." Their flesh is rank and unpalatable. The male may be recognized by his large size, white breast and green gloss on the head and neck, the latter scarcely crested; the female, which is much smaller than the male, has a deep red head and neck, with the crest better developed; under parts salmon-tinted. The nest is made in hollow trees, after the manner of the Wood Duck, and is composed of moss, leaves and grasses, warmly lined with down from the bird. In Northern Maine eggs are deposited in the latter part of May or the first of June. The eggs are six or eight and sometimes ten in number; of yellowish or buff color, and measure from 2.50 to 2.80 by 1.70 to 1.80.

* Auk, Vol. IV, p. 344.

130. *Merganser serrator* (LINN.) [637.]**Red-breasted Merganser.**

Hab. Northern portion of Northern Hemisphere; south, in winter, throughout the United States.

An inhabitant of the more northern portions of the Northern Hemisphere, being common to Europe, Asia and North America. In the latter continent it is more abundant than the *M. americanus*. Very common in the United States in winter, where it is found breeding in suitable localities in the months of May and June. The Red-breasted Merganser breeds abundantly in Newfoundland, Labrador, the fur countries of British America and Alaska. It is a resident of Greenland and Iceland.

It nests usually on the ground among brushwood, surrounded with tall grasses and at a short distance from water; most generally it is concealed by a projecting rock or other object. The nest is made of leaves and mosses, lined with feathers and down, which are plucked from the breast of the bird.

The number of eggs in a set varies from six to twelve, usually about nine or ten; oval or elliptical in shape, and vary in size from 2.48 to 2.65 long by 1.65 to 1.82 broad. The color is a yellowish or reddish-drab, sometimes a dull buffy-green.

131. *Lophodytes cucullatus* (LINN.) [638.]**Hooded Merganser.**

Hab. North America generally, south to Mexico and Cuba.

This handsome Merganser is an exclusively North American species. In suitable places throughout its range, in wooded districts near water almost wherever it occurs, it may be found breeding. It nests in hollows of trees or stumps, lining the cavities with fine grasses, leaves, feathers and down. In some localities the bird is called "Water Pheasant" and "Hairy-head." Anyone can recognize the male of this species by its striking black and white colors and its magnificent, erect, compressed, semi-circular black and white crest. The general color of the head, neck, sides and upper portions of the female are grayish-brown; white beneath, and the crest is not so prominent. As many as eighteen eggs have been found in a single nest; ten or twelve, however, appear to be the most common numbers, and often as few as six are laid.

They are of a delicate pearly-white, rounded oval and measure from 2.05 to 2.25 long by 1.70 to 1.75 broad.

132. *Anas boschas* LINN. [601.]**Mallard.**

Hab. Northern parts of Northern Hemisphere; in America south to Panama and Cuba, breeding southward to the Northern United States.

The Green-head, or Mallard, is one of the most highly esteemed

ducks, its habitat being nearly cosmopolitan, almost everywhere domesticated. It is the original of our barn-yard duck. A common bird in North America at large, breeding sparingly throughout the United States. In the sloughs and meadow marshes of the northern tier of states this duck breeds more or less abundantly in the month of June. Rare in New England, scarcely found beyond Massachusetts, and is replaced farther northeast by the Black Mallard, or Dusky Duck.

Mr. A. M. Shields writes me that this is, perhaps, the most common of the ducks in the vicinity of Los Angeles, Cal., breeding from the first of April to the last of June, selecting for its nesting place the tall grass in fields not far from a lake or river. The eggs are six to ten in number, pale, yellowish drab, or olivaceous-green, but most generally the latter color when fresh; elliptical; average size, 2.25×1.25 .

133. *Anas obscura* GMEL. [602.]

Black Duck.

Hab. Eastern North America, west to Utah, Texas, north to Labrador, breeding from the Northern United States northward.

The Dusky Duck, or Black Mallard, is much less common in the interior than along the Atlantic coast. The characteristic and one of the commonest ducks of New England, where it breeds at large, and from thence northeastward, but is most numerous during the migrations. The eggs are from six to twelve in number, usually seven or eight; are elliptical, or nearly so in shape; measure about 2.30×1.70 , and vary from pale buff to pale greenish-buff. Incubation period is from the last of April to the early part of June. The nest is placed on the ground, in grass or rushes in the neighborhood of ponds, pools, and streams, in meadows and sometimes in swamps. It is a large and neatly arranged structure of weeds and grass, nicely hollowed and lined with down and feathers from the breast of the bird.* In rare instances it has been known to nest in the hollow of a tree, or a "stub" projecting from the water of a swamp. Mr. Frazar found the nest of this Duck in Labrador usually placed upon the "outreaching branches of stunted spruces," which are seldom higher than four feet. The bird may be known by its resembling the female of the Mallard, *A. boschas*, but darker in color.

134. *Anas fulvigula* RIDGW. [603.]

Florida Duck.

Hab. Florida; Kansas.

This is a local, lighter colored species, which is resident in Florida. They are smaller than the northern birds. The eggs are deposited during the first and second weeks in April. They are similar to those of the Black Mallard, but smaller, averaging 2.15×1.61 .

*Oology of New England, p. 96.

135. *Anas strepera* LINN. [604.]**Gadwall.**

Hab. Nearly cosmopolitan. In North America breeding chiefly within the United States.

The Gadwall, or Gray Duck, is a widely diffused species in most parts of the world. In North America, during the breeding season, it may be found nesting anywhere, especially south of the British Provinces. Common in meadows, and in grain fields near marshes and lakes in Minnesota, nesting in the middle of June and depositing from eight to twelve eggs in a cavity of the ground.

Mr. A. M. Shields states that this Duck is a resident in the vicinity of Los Angeles, Cal., but is not met with in great numbers. He found a nest containing eleven eggs on April 16, these were apparently about two weeks incubated. The nest was a slight hollow, amongst a thick bunch of weeds, six feet from the water's edge; it was composed of fine grass and feathers from the breast of the bird. The eggs are clay color or creamy buff, elliptical in shape, and measure 2.09 by 1.57.

136. *Anas penelope* LINN. [606.]**Widgeon.**

Hab. Northern part of the Old World. In North America breeds in the Aleution Islands. Occurs occasionally in the Eastern United States.

The European Widgeon in its size and general character, resembles the American Widgeon or Baldpate. In the south of Scotland and throughout England it is an abundant winter visitant; a few remain to breed on the islands of the lochs in the northern portions of Scotland. It breeds in Norway and Sweden, and is the most abundant of the ducks that breed in Lapland, nesting in the grassy swamps and lakes midst tall rushes; the material for the nest being reeds and grasses, with a warm lining of down and feathers from the bird's body. The eggs are five to eight in number, and their color is pale buff; their average size is 2.23 x 1.53.

137. *Anas americana* GMEL. [607.]**Baldpate.**

Hab. North America, from the Arctic Ocean south to Guatemala and Cuba.

The American Widgeon or Baldpate inhabits North America at large, breeding anywhere in suitable localities. This is one of the neatest of our ducks, and may be known by the spotted neck and head. The latter is white on top; the speculum green and black; the lower neck, scapulars, sides and upper breast chestnut-red, tinged with ashy, finely banded, all but the breast, with dark brown. The greater upper wing coverts are white, tipped with black, and the under parts are pure white; the bill and feet are grayish-blue. The female is similar, but lacks the white crown and iridescence on the head. There is

a great variation in the normal coloration of the plumage, aside from age or sex, but as Dr. Coues says: "The bird can not be mistaken under any condition; the extensive white of the under parts and wings is recognizable at gun-range." The nest of this species is made on the ground in marshes, composed of grass and weeds, neatly arranged and nicely hollowed; it is usually lined with the down and feathers from the breast of the bird.

The eggs are pale buff, eight to twelve in number, measuring 2.00 by 1.50, with slight variations.

[138.] *Anas crecca*. LINN. [611.]

European Teal.

Hab. Northern part of the Old World. Casual in Eastern North America and the Aleutian Islands.

This duck, which resembles very closely our American Green-winged Teal, is of irregular occurrence in Eastern North America. In the northern portions of Europe it is very common, especially throughout Norway and Sweden. Breeds in abundance all over Lapland and in Northern Russia.

Mr. Mathew Clugston informs me that this duck is quite common in Scotland, where it nests in the grassy herbage about the edges of lochs. A few breed in various places in Great Britain—as far south as Suffolk, England, and also in Wales. It is known to breed on some of the islands on the west coast of Spain and those on the northwestern coast of Africa.

The nest is formed of grasses and reeds, warmly lined with feathers. In some places this duck's favorite breeding resorts are the bogs and marshes in grassy fields. The eggs are commonly eight to ten in number; and sometimes as many as fifteen are laid. They are yellowish-white, oval in shape, and measure 1.75 in length by 1.30 in breadth.

139. *Anas carolinensis* GMELIN. [612.]

Green-winged Teal.

Hab. North America, migrating south to Honduras and Cuba.

This handsome little Duck is exceedingly abundant throughout North America. It breeds from the northern borders of the United States northward to Greenland and Alaska. During the spring and fall migrations it is one of the most abundant of water-fowl, frequenting the small brooks and ponds as well as the larger waters. It may be recognized by its small size; the primaries of the wing-coverts are of leaden-gray; speculum velvety purplish-black on the outer half, the inner half rich green; bordered in front with chestnut, fawn or whitish tips of the greater coverts, behind by white tips of the secondaries, interiorly with purplish-black stripes on the outer webs of the length-

ened secondaries. The head and upper neck of the male are rich chestnut, blackening on the chin with a glossy green patch behind each eye. There is a white crescent in front of the wing. The female differs in the head markings, but those of the wing are the same. It is a well-known and highly esteemed game bird. The nest is placed on the ground, in a thick growth of grass, and is essentially the same as that of the Blue-winged Teal.

The eggs are from five to eight in number, greenish-buff in color, usually ovoidal in shape, sometimes nearly oval, and vary in size from 1.73 to 1.90 long by 1.22 to 1.32 broad.

140. *Anas discors* LINN. [609.]

Blue-winged Teal.

Hab. North America, but chiefly the Eastern Province; north to Alaska and south to the West Indies and Northern South America.

A beautiful little duck, inhabiting North America in general, but chiefly the Eastern portions. During the breeding seasons it is found in the same localities as the Green-wing, but is more abundant in the northern tier of States at that season than the latter. This Duck feeds chiefly upon vegetable matter, and its flesh is tender and luscious. It may be known by its small size, blue wings and narrow bill. The feet are yellowish. The male has a white, crescent-shaped spot in front of the eye. The female is brown throughout, with the feathers edged with whitish which becomes prominent below. The nest is made on the ground, in a thick patch or tussock of grass, usually in meadows, the border of ponds or streams and swampy places. It is composed of soft pieces of grass and weeds, lined with down and feathers from the breast of the bird.

The eggs are greenish or buff, lighter in color than those of the Green-winged Teal; they vary from ovate to ovoidal, and are sometimes nearly oval in shape; six to ten and twelve in number, and vary in size from 1.30 to 1.35 broad by 1.90 to 1.95 long.

141. *Anas cyanoptera* VIEILL. [610.]

Cinnamon Teal.

Hab. Western America, from the Columbia River south to Chili, Patagonia and Falkland Islands; east in North America to the Rocky Mountains; casual in the Mississippi Valley.

This pretty South American Teal is abundant in the United States west of the Rocky Mountains, and breeds anywhere in this range; Colorado, Utah, Nevada, California, Idaho, Oregon, etc. In the adult male the head, neck and under parts are rich chestnut, the wing coverts are sky-blue, as in the Blue-winged Teal. The speculum is green and is set between the white tips of the greater coverts and the secondaries.

Its habits on the whole do not differ from those of its well-known ally, the Blue-wing.

Mr. A. M. Shields regards it as common in the vicinity of Los Angeles, where it breeds in great numbers; nesting in the first week of May. Its favorite breeding places are in fields of tall grass or clover, in close proximity to water. He says the complement of eggs ranges from nine to thirteen, and that the nest is so compactly woven of grass, feathers and down that the entire structure may be picked up without its coming apart.

The eggs are creamy-white or pale buff; six to twelve; one end smaller than the other.

Ten eggs collected by Dr. James C. Merrill, near Fort Klamath, Oregon, June 14, 1887, exhibit the following dimensions: 1.90 x 1.38, 1.82 x 1.37, 1.88 x 1.39, 1.90 x 1.38, 1.92 x 1.39, 1.88 x 1.38, 1.85 x 1.40, 1.94 x 1.38, 1.89 x 1.36, 1.83 x 1.34; the average size is 1.88 x 1.38.

The nest was built at the edge of a marsh; it was made of grass blades and stems, warmly lined with down.

142. *Spatula clypeata* (LINN.) [608.]

Shoveller.

Hab. Northern Hemisphere. In North America. Breeding from Alaska to Texas. Not abundant on the Atlantic coast.

The Shoveller, or Spoonbill Duck, is common in the northern portions of the globe. Said to have the most extended distribution of any species of the duck tribe, being more or less common in every portion of Europe and Asia, except in the extreme north; is found in Northern and Central Africa, and other portions of the tropical world. It is not common in England, where it breeds sparingly, but is more abundant in Scotland.

In North America this peculiar-looking duck breeds throughout its range in all suitable places; it winters chiefly in the south. It may easily be recognized by its broad bill, blue wing coverts and green speculum.

The iris is yellow and the feet bright orange. The Spoonbill makes his nest on the ground in boggy places which are difficult of access. It is composed of grass and weeds.

The eggs are greenish-gray, or faintly bluish; elliptical; six to ten in number; averaging in size about 2.10 by 1.50.

143. *Dafla acuta* (LINN.) [605.]

Pintail.

Hab. Northern hemisphere. In America migrates south to Panama and Cuba.

In North America the Pintail, or Sprig-tail, is a common species everywhere, being found as far north as Greenland and the Arctic

coast, and south to the Isthmus of Panama and to Cuba, breeding from the Northern States northward throughout the Fur Countries to Alaska, and in Greenland. It is abundant in the United States during the spring and fall migrations. In the vicinity of Los Angeles, California, Mr. Shields says it is very abundant during the entire winter, and a few remain to breed. The place usually selected for the nest is in tall bunches of prairie grass, seldom far from water. The number of eggs laid is commonly eight or nine; these are deposited about the middle of May. If the eggs are taken the bird will immediately deposit a second set, which is seldom more than five or six in number.

The male bird, inclusive of the long central tail-feathers, is about twenty-nine inches long; the general color of the upper parts is grayish, delicately penciled with white; either sex may be known by the very long and slender neck, but the female is shorter, being about twenty-two inches long, the central tail feathers making a difference of seven inches.

In the far north this species deposits as many as twelve eggs in a single nest. These are of a dull grayish olive; elongate ellipsoidal in shape and measure from 2.10 to 2.30 long by about 1.52 broad.

144. *Aix sponsa* (LINN.) [613.]

Wood Duck.

Hab. Temperate North America, breeding throughout its range.

An exquisite bird, the most beautiful of all our ducks; in fact, no description can give a sufficient conception of the variety and lustre of its plumage. It is crested, the head iridescent green and purple, with parallel curved white superciliary and post-ocular stripes and a broad white throat patch. The iris and edges of eyelids are red. In the female the head is mostly gray. A freshly-killed specimen has all the variegated tints to be seen in the rainbow. It is well-named Bridal Duck. It inhabits North America at large and is especially abundant in the United States, breeding almost wherever found. Frequents the wooded portions of the country near water. The nest is made in the hollow of decayed trees, often at the depth of four to six feet. It is composed of twigs, weeds or grass, warmly lined with the down from breast of the bird. What is remarkable about the entrance to the nest is, that it is often so small that it would seem almost impossible for the bird to pass in and out.

The tree in which the nest is made is frequently situated a considerable distance from water in some retired place. The young are carried to water in the bill of the parent bird. The eggs number from eight to twelve, and I have seen several sets of fourteen; they are of

a pale buff color, averaging in size about 2.00 by 1.50, but there is a great variation in this respect when a large series of specimens from different parts of the country are examined. When robbed of its eggs the bird will often lay a second set.

[145.] *Netta Rufina* (PALL.)

Rufous-crested Duck.

Hab. Eastern Hemisphere; accidental in the United States.

The claim of this species to a place in the North American fauna rests on a single specimen obtained in Fulton Market, New York City, February 2d, 1872. It is supposed to have been shot on Long Island Sound.

The bird is found in Southern and Eastern Europe, and in portions of Africa and Asia. The eggs are described as being of a pale olive-buff and measure 2.19 x 1.68.

146. *Aythya americana* (EYT.) [618.]

Redhead.

Hab. North America, breeding from California and Maine northward.

The Redhead or Poachard, so frequently confounded with the Canvas-back, is a common duck throughout North America. It breeds in all parts of the Fur Countries, and is very abundant in the marshes of Manitoba throughout the summer months. It nests in suitable localities of various northern states, Maine, Michigan, Wisconsin, Minnesota and Dakota.

The Redhead also breeds in the marshes of California. Mr. Shields mentions it nesting in a swamp near Los Angeles about the middle of June.* The nest is built on the ground in thick grass or weeds and is composed of aquatic plant stems and grasses, lined with the down and feathers from the breast of the bird. The nest is often constructed in a mass of reeds over water after the manner of a Coot's. Mr. Shields found the nests to contain from seven to fourteen eggs. Eight or ten are more commonly laid further north. They are creamy-white, elliptical, and average 2.40 by 1.70, with slight variation.

147. *Aythya vallisneria* (WILS.) [617.]

Canvas-back.

Hab. Nearly all of North America.

The celebrated Canvas-back Duck is an exclusively North American species, found in the interior and on both coasts as far north as the Arctic Ocean and southward to Central America. Breeds on the interior marshes, rivers and lakes from the Northwestern States to

* Young Oologist, a magazine devoted to the study of birds, their nests and eggs, published by Frank H. Lattin, Albion, N. Y., Vol. I., p. 90.

Alaska. Nests commonly in many of the lakes and ponds of Manitoba. On the marshes and lakes in the mountain valleys of Oregon the Canvas-back constructs its nest at the edge of the water or near it in tall rushes or grass. The Canvas-back is *the* highly esteemed table duck. When feeding on wild celery the flesh is said to acquire a peculiarly fine flavor, but under other circumstances not one person in ten thousand can tell it from any other duck, on the table. It is often confounded with the Redhead, but there is no occasion for this, even when the different sexes come to hand in any state of plumage. Although both species are similar in plumage, their heads alone will differentiate them. The Redhead has a high forehead, while the Canvas-back's head slopes gradually down to the bill and the bill rises high on the forehead. In the male Redhead the entire head is clear chestnut red, with a coppery tint, and the bill pale grayish-blue, with a dark tip. In the Canvas-back nearly the whole head is blackish-brown, and the bill blackish. The general color of the females of both is brownish throughout. The nest of the Canvas-back is generally made on the ground in marshy places; tall, rank grass is usually selected. It is composed of grass and weeds, less thickly lined with feathers than the nests of other ducks are.

The eggs are from six to ten in number, pale grayish-drab or greenish-buff, elliptical, and measure from 2.25 to 2.50 long by 1.70 to 1.75 broad.

148. *Aythya marila nearctica* STEJN. [614.]

American Scaup Duck.

Hab. North America, breeding far north.

This and the next species are closely allied, and are variously known as Blue-bills, Raft Duck, Flocking Fowl and Shufflers. This one is called Big Blackhead or Greater Scaup Duck, on account of its size. It inhabits the whole of North America, and breeds far north. It is not so abundant in the United States as the next species. In many of the river valleys and in the lakes of Manitoba it is a common summer resident, where it nests on the ground in swampy places. The nest material is grass and weeds, and the lining is down from the breast of the bird.

In the male the head, neck and the front part of the body are black, the former with a green gloss; the back and sides whitish, finely waved in zig-zag with black; underneath and speculum of wing is white. The bill is blue, with black nail; iris yellow. In the female the head and anterior parts brown; face pure white.

The eggs of the American Scaup Duck are of a pale, buffy olive-gray, or ashy-green, elliptical, six to ten in number, size 2.54 x 1.71.

149. *Aythya affinis* (EYT.) [615.]**Lesser Scaup Duck.**

Hab. North America in general, migrating south to Guatemala and the West Indies.

As its name indicates, this species is smaller than the last, to which it is very similar. Breeds chiefly north of the United States. It is a common summer resident in the lakes, marshes, ponds, and rivers of Western Manitoba and throughout other portions of the fur countries northward. Its nesting habits and its eggs are the same as *A. marila nearctica*. The average size of the eggs is about 2.25×1.58 .

150. *Aythya collaris* (DONOV.) [616.]**Ring-necked Duck.**

Hab. North America, migrates south to Guatemala and the West Indies.

Ring-billed Blackhead, Marsh Blue-bill and Ring-necked Scaup Duck are names by which this species is commonly known. In the United States it is a common spring and fall migrant, and breeds from Maine, Minnesota, Wisconsin, and other northern States northward. In some parts of Manitoba it is very abundant, especially in the Red River Valley, where it breeds in the marshes of the lakes and ponds, among the reeds and thick grasses. The nest is made of fine grasses, and slightly lined with feathers. In its general appearance, the bird is similar to the foregoing, but the adult male has an orange-brown ring around the neck; the female has no collar, and the head and neck are brown. This bird may be known in all stages of plumage by the broad bill and gray speculum. The Ring-neck lays from six to twelve eggs, varying from grayish to buff color; they are elliptical in shape, and measure from 2.25 to 2.30 by 1.60 to 1.65 .

151. *Glaucionetta clangula americana* (BONAP.) [620.]**American Golden-eye.**

Hab. North America, breeding from Maine and the British Provinces northward; migrates south to Cuba.

The American Golden-eye, Whistler, Garrot, or "Great-Head," is very similar to the next species. It has a large round white spot before the eye, not touching the base of the bill throughout. It is given the name of Whistler from the peculiar noise of the wings while flying, and Great Head from its large and beautifully created head. It is an abundant species throughout the fur countries, where it frequents the rivers and fresh-water lakes in great numbers. Breeds as far north as Alaska, where, on the Yukon, it nests about the middle of June. Like the Wood Duck, it constructs its nests in hollow trees and decayed trunks. It is made of grass, leaves, and moss, lined with down from the bird's breast.

The eggs are from six to ten in number, ashy green in color,

rounded-oval in shape, and measure from 2.30 to 2.55 long by 1.70 to 1.78 broad.

152. *Glaucionetta islandica* (GMEL.) [619.]

Barrow's Golden-eye.

Hab. Northern North America, south in winter to New York, Illinois and Utah. Greenland; Iceland.

The Rocky Mountain Garrot, or Golden-eye, is almost exclusively a North American species, breeding from the Gulf of St. Lawrence in the east and the mountains of Colorado in the west to high northern regions. It is a resident of Greenland and Iceland. It may be known by the large triangular white spot before the eye running up to a point, applied against the entire base of the bill and the division of the white area on the wing. The head is moderately puffy, with an occipital crest, and the color of the gloss is chiefly purple and violet. The bill is black or greenish-dusky and the iris golden-yellow. In the female the head is snuff-brown and no white patch in front of the eye. This bird, like the last, makes its nest in hollow trees, of grass, sticks and weeds, lined with feathers. Mr. Edwin Carter was the first to find the nest and eggs of this species in the mountains of Colorado in 1876. From six to ten eggs are laid, these are usually elliptical in shape, and measure from 2.25 to 2.30 long by 1.60 to 1.65 broad.

153. *Charitonetta albeola* (LINN.) [621.]

Buffle-head.

Hab. North America; south to Cuba and Mexico. Breeds from Maine northward, through the Fur Countries and Alaska.

This duck is variously named, as Butter-ball, "Dipper," "Butter-box," "Spirit Duck" and "Hell-diver." It dives with the greatest of ease, slipping under the water almost as quickly as a grebe. Its expertness in diving enables it to obtain food in very deep water. The Buffle-head is peculiarly an American species, but of accidental occurrence in Europe. In Manitoba and throughout all the Fur Countries it is a common summer resident, breeding as far north as Alaska. The nests are concealed in hollows of trees or stumps, near the banks of streams. They are lined with down and feathers. The Butter-ball breeds occasionally in Northern Maine. In the United States it is an abundant spring and fall migrant, and in many places a winter resident. The male is one of the handsomest of our small ducks. The head is particularly puffy, of varied rich iridescence, with a large showy white patch on each side behind the eye. The broad black and white pattern of his upper coat stands out in strong contrast against a glossy white breast. The female is smaller and a very insignificant looking duck; the head is scarcely puffy, dark gray, with traces of the white auricular patch.

The eggs of this duck vary from buff to a creamy-white or grayish-olive; ellipsoidal in form and range from six to fourteen in number; sizes from 1.95 to 2.05 long by 1.35 to 1.50 broad.

154. *Clangula hyemalis* (LINN.) [623]

Old-squaw.

Hab. Northern hemisphere; in North America south to the Potomac and the Ohio. Breeds far northward.

The Long-tailed Duck, Old Wife or South-southerly, as it is variously called, is distributed throughout the northern portions of the globe, making its summer home in Arctic regions. A resident in Greenland and breeds in various places in Iceland. The nests are made on the margins of lakes or ponds, among low bushes or tall grass; they are constructed of grasses and generally, but not always, warmly lined with down and feathers. The eggs are from six to twelve in number. The Long-tailed Duck inhabits the more northern countries of Europe — a winter visitant to Great Britain, and it is found occasionally in Germany and France. Abundant on the sea-coast of Alaska, is resident on the Prybilof and Aleutian Islands. In the United States it is found only in winter. The male of the Old-squaw is a handsome duck, and may be recognized by its long tail and peculiar reddish-brown and brownish-black and white markings. The female lacks the lengthened tail-feathers, and is, on the whole, a very inferior looking bird.

The eggs of this species average 2.05 by 1.49; they are pale, dull grayish pea-green, varying to dull light olive-buff.

155. *Histrionicus histrionicus* (LINN.) [622.]

Harlequin Duck.

Hab. Northern North America.

The beautiful and singularly marked Harlequin "is an inhabitant of the southern part of the circumpolar zone." It is not common wherever found. In many parts of the Old World it is only a rare or an occasional visitor; this is the case in Great Britain, France and Germany. At the commencement of the breeding season it leaves the sea-coast and retires to the lakes and rivers of the interior regions. A summary of this bird's breeding range is given by C. Hart Merriam, as follows: "In Siberia it is known to breed about Lake Baikal and in the Bureja Mountains (Radde); in Mantchuria and at various points in the great Stanowi Range (Von Middendorff); about the Upper Amoor (Von Schrenck), and in Kamtschatka. On the American Continent it has been found breeding along the tributaries of the Yukon in Alaska (Dall); in the interior of the Fur Countries and about Hudson's Bay

(Richardson); on the fresh water ponds of Labrador (Audubon), and in the Rocky Mountains within the limits of the United States (in Montana, Coues). It also nests in Newfoundland, Greenland, and Iceland (Kruper)."^{*} Dr. Merriam says that all accounts agree that this duck nests on the ground in close proximity to swiftly running water, and states that he is also informed that in Newfoundland the nests are built in hollow trees. In some of its breeding grounds it is said to lead a solitary life, being found alone or in pairs in the most retired places on small streams. The nest is composed of weeds, grass, etc., warmly lined with down and feathers from the breast of the bird. When the female leaves the eggs she carefully covers them up with down.

In some places the Harlequins are called "Lord and Lady Ducks." The male is second only to the Wood Duck in beauty, and the female will bear no comparison to the same sex of that species.

The eggs are six to eight in number, rounded oval, yellowish-buff or greenish yellow, and measure 2.30 x 1.62.

157. *Eniconetta Stelleri* (PALL.) [625.]

Steller's Duck.

Hab. Arctic and sub-Arctic coasts of Northern Hemisphere.

The summer home of Steller's Duck is in very high Arctic latitudes. It breeds in Northern Russia, in Europe and in Siberia, nesting in the latter part of June, depositing from seven to nine eggs. It is said to breed on the inaccessible rocks of Kamtschatka, on the islands of Bering Sea, and sparingly on some of the Aleutian Islands. In its habits it resembles the Common Eider. The nest is placed on the ground and is made of grass, thickly lined with down and feathers from the breast of the bird. Dr. Coues says the bird is not yet common in collections, though abounding and sometimes gathering in enormous flocks on the islands and both shores of Bering Sea and the Arctic coast of Northeastern Siberia. It winters mainly on the Aleutian Islands, and is usually found in company with the Pacific, Spectacled and King Eiders. The eggs vary from pale olive-buff to pale olive or pale green and measure 2.30 by 1.62.

158. *Arctonetta fischeri* (BRANDT). [626.]

Spectacled Eider.

Hab. Coast of Alaska, north to Point Barrow.

This Eider with a peculiarly dense and puffy patch of velvet feathers about the eye, suggesting spectacles, has nesting habits similar to the American Eider, *S. dresseri*. The eggs are also similar.

^{*}Bull. Nutt Club. VIII, 220.

It inhabits the islands and coasts from Norton Sound northward to Point Barrow. On St. Michael's Island, Alaska, it breeds in company with the Pacific Eider *S. v-nigra*. The eggs measure from 2.35 to 2.57 long by 1.55 to 1.85 broad.

159. *Somateria mollissima* (LINN.) [627.]

Eider.*

Hab. Northern Europe and Northeastern North America, including Greenland and Northern Labrador; south in winter on the Atlantic Coast to Maine.

The Eider, so famous for its down, which has become an article of commerce and luxury, is common along the Northern Atlantic coasts of Europe and America. The great demand for its down has caused the inhabitants of Iceland, Norway, and other parts of Europe to protect it during the breeding season. In these places the Eider becomes very tame. It is a resident of Greenland, where it nests in the latter part of June or the first week of July. On some of the small islands on the coast of Iceland it has become almost domesticated, breeding in vast numbers, nesting on the grassy banks, between large stones, on rocks, and in every available hollow which will hold the nest. The nest is made of sea-weed, lined with the down plucked from the breast of the bird. This is augmented as incubation proceeds and the quantity of down often becomes so great that the eggs are concealed from view. The eggs range from six to ten in number, greenish drab, and measure 2.97 by 2.01.

160. *Somateria dresseri* SHARPE. [627a.]

American Eider.

Hab. Atlantic coast of North America, from Maine to Labrador; south in winter to the Delaware.

The American Eider breeds along the Atlantic coast of North America from Maine to Northern Labrador. On Grand Manan and some of the smaller islands in that vicinity this duck formerly nested in great numbers, but from constant persecution its numbers have been greatly diminished. It is one of the most characteristic summer ducks of Labrador and Newfoundland. Mr. Frazar found this Eider breeding commonly on small islands on the coast of Labrador, making the nest in the short, soft grass. The favorite nesting place was at the foot of some large rock, or in the nooks between rocks, where the birds found shelter from the wind. They were always made of the slate-colored down from the breasts of the birds. Most of the nests contained four or five eggs; a large number six, two seven and one

*According to Prof. Ridgway the American bird proves not to be the true *S. mollissima* of Northern Europe, but a fairly distinguishable race, called Greenland Eider, *S. mollissima borealis* Brehm, inhabiting Northeastern North America, including Greenland, etc., as in the above habitat. For description of this race see Manual North American Birds, p. 109.

eight.* The eggs are from four to ten in number, but often fewer; they are plain dull greenish-drab; measuring about 3 x 2.

161. *Somateria v-nigra* GRAY. [628.]

Pacific Eider.

Hab. Coasts of the North Pacific; in the interior to the Great Slave Lake, and Eastern Siberia.

The Pacific Eider is common in suitable places on both coasts and islands of Bering Sea and the polar coasts of Siberia; replacing the Common Eider, *S. molissima*, Spectacled and Steller's Eiders. Dr. Stejneger says it is now rather scarce on the Commander Islands. On Copper Island it breeds only in a few places, and in limited numbers. It breeds on the Aleutian Islands, the Island of St. Michael's, and in great numbers on the Arctic coast, near the mouth of the Anderson River. Its nesting habits are the same as those of *S. dresseri*, and the eggs measure from 2.95 to 3.20 long by 1.95 to 2.10 broad.

162. *Somateria spectabilis* (LINN.) [629.]

King Eider.

Hab. Northern part of Northern Hemisphere, breeding in the Arctic regions; in North America south casually in winter to New Jersey and the Great Lakes.

A beautiful Arctic species, very closely resembling the three last. It is a resident of Greenland, and is found on the Atlantic coasts of Europe and America, and on the Pacific coasts of America and Asia. Abundant in various places along the shores of the Arctic Ocean, thence southward in winter on the Pacific side in great numbers to the Aleutian Islands and beyond. Rare on the Alaskan coast of Bering Sea. The nests of this Eider, found in the islands of the Arctic seas, are placed in depressions of the ground, and composed wholly of down. In Greenland the King Eider breeds in the latter part of June or in the first part of July, nesting in the vicinity of ponds and marshes. Six eggs are the usual number laid, but as many as ten are said to be deposited. They vary from light-olive gray to grayish-green, and measure from 3.10 to 3.15 long by 1.75 to 2.10 broad.

163. *Oidemia americana* Sw. & RICH. [630.]

American Scoter.

Hab. Coasts and larger lakes of Northern North America; breeds in Labrador and the northern interior; south in winter to New Jersey, the Great Lakes and California.

A few of this species are said to breed in Labrador as they do in the neighborhood of marshes and ponds in the interior, northward. In the Hudson's Bay region the American Scoter nests in June and July. It has been found on islands along the coast of Alaska and at the mouth of the Yukon in June. The Scoter nests similar to the Eider,

* See Mr. Frazer's article: Ornithologist and Oologist, Vol. XII., pp. 19-20.

on the ground, near water; the material used being coarse grass, feathers and down. The nests are often well secreted in the cliffs and hollows about steep banks.

This Duck is called Sea Coot, Butter-billed and Hollow-billed Coot. The plumage of the adult male is entirely black, and the top of the bill orange; the color of the female is sooty-brown, becoming paler below. It is much smaller than the male. This Duck, like many others in winter, is sometimes found in great numbers along the entire Atlantic coast. Its food is principally small bivalves, which it secures by diving.

The eggs are said to range from six to ten in number. They are of a pale dull buff, or pale brownish-buff, and measure 2.55×1.80 .

[164.] *Oidemia fusca* (LINN.) [631.]

Velvet Scoter.

Hab. Northern Old World: accidental in Alaska and Greenland.

This fine sea duck belongs to the Old World. It is a winter visitant on the coasts of England; a few specimens have been obtained at different times in the London markets. It is recorded as having been taken as far south as Italy. On the Orkney and Shetland Islands it is said to be common. Found in Norway, Sweden and Scandinavia. Said to be abundant everywhere in Lapland, where it nests on hummocks, among the willow swamps, in long grass near water, or by the edges of large lakes in mountain districts.

The eggs are of a pale cream color, and measure 2.87×1.92 .

165. *Oidemia deglandi* BONAP. [632.]

White-winged Scoter.

Hab. Northern North America, breeding in Labrador and the Fur Countries; south to the Middle States, Southern Illinois, and Southern California.

Like the Velvet Scoter, *O. fusca* of the Old World, the American bird is eminently a sea-duck, resorting, however, mainly to inland waters during the breeding season. Its summer home is in the Arctic regions. Found along the Atlantic and Pacific coasts, and as far south as the Middle States in the spring, fall and winter. It breeds on many of the lakes, rivers and larger bodies of water in Manitoba.

The "White-winged Coot," "Sea Coot," "Black Surf Duck," or Velvet Duck, as it is variously called, has been found breeding quite abundantly on the Lower Anderson river, constructing the nest on the ground near fresh water. The nests contain a lining of down and feathers. Audubon found it breeding in Labrador from the 1st to the 10th of June. The nests were built by the side of small lakes, two or three miles distant from the sea, and usually placed under low bushes;

they were formed of twigs, mosses and various plants matted together. The nests were large and almost flat, several inches thick, lined with some feathers of the female, but without down.

The eggs are usually six in number, measuring 2.68 x 1.83. They are of a pale buff, varying to green.

166. *Oidemia perspicillata* (LINN.) [633.]

Surf Scoter.

Hab. Coasts and larger inland waters of Northern North America; south to the Carolinas, the Ohio river and Lower California.

The Surf Duck and the three preceding species are called Coots by the gunners; their habits, appearance and general characteristics being similar. It is peculiarly an American species, and is only an occasional or accidental visitor in Europe. The plumage of the male of this species is glossy black, no white on the wings, but a triangular white patch on the forehead pointing forward. The female is a sooty-brown, below silvery-gray; side of the head much whitish. It breeds in the far north along the coast and in the interior of the fur countries. Audubon found this species to be the least numerous of the ducks inhabiting Labrador. He discovered a nest in a fresh-water marsh placed among the tall grass and weeds. It was entirely made of withered, rotten weeds, lined with the down of the bird. The nest contained five eggs; they were pale yellowish or cream color, and measured 2.31 by 1.63. The general average is 2.47 x 1.70; pale buff to creamy-buff.

167. *Erismatura rubida* (WILS.) [634.]

Ruddy Duck.

Hab. North America in general, south to Cuba, Guatemala, and Northern South America.

The Ruddy Duck is an American species, and is found breeding throughout most of its range, but more especially from the northern borders of the United States northward. In spring and fall it is an abundant duck on the large bodies of water, as well as rivers, small streams, and ponds. It is exceedingly difficult to kill, being very tenacious of life, and, when wounded, dives with the greatest of ease, remaining under the water for a long time—in fact, no duck excels this one in diving. Mr. Shields writes that the Ruddy Duck breeds quite commonly in the vicinity of Los Angeles, Cal., depositing from five to eleven eggs about the last of May, and fresh eggs may be taken as late as June 25. He says there is positive proof that this duck prefers the abandoned nests of Coots for nesting purposes to those constructed by itself, and cites several instances in which he took eggs of this species from what appeared to be Coots' nests recon-

structed. Seven Ruddy Ducks' eggs were found in a Coot's nest, from which, a few weeks previous, a set of the Coot's eggs were obtained. The locality usually selected for a breeding place is some deep, sluggish stream, lake or pond, and the nests are always built close to the water's edge; they are composed of reeds, dry rushes and grass. The structure is often made so that it will float, similar to a grebe's nest. The male is a handsome bird; its general color is glossy chestnut, and the lower parts silvery white; the chin and sides of the head are dead white, the crown and nape glossy black. The female is brown above, finely dotted, and waved with dusky; below paler and duller. From its peculiar stiff tail feathers, I have often heard hunters call it the "Sprig-tail," a name, however, applied to the Pin-tail Duck. It is also called Dipper Duck. The eggs are grayish-white, ovoid or oval in shape, with a finely granulated surface; sizes range from 2.35 to 2.50 long by 1.70 to 1.80 broad. They appear large for the size of the bird.

169. *Chen hyperborea* (PALL.) [591a.]

Lesser Snow Goose.

Hab. Pacific coast to the Mississippi Valley, breeding in Alaska; south in winter to Southern Illinois and Southern California.

There are several forms of the Snow Goose which exist in North America; two are designated by their respective sizes, namely, Lesser and Greater. The Lesser species breeds in Alaska, and occurs throughout the northwestern portions of the continent, and in winter migrates over the whole of the country, from the Pacific coast to the Mississippi Valley. The Greater Snow Goose, *Chen hyperborea nivalis* (Forst.), according to Prof. Ridgway, occurs in Eastern North America; its breeding grounds are unknown, but they are probably in the Arctic regions east of the Mackenzie river. In winter it is found in the United States from the Mississippi Valley to the Atlantic coast.*

Ross's Snow Goose, *C. rossii* (Baird), is found in summer in the interior of Arctic America, migrating south in winter to Southern California and eastward to Montana.

The Blue Snow Goose, *C. caerulescens* (Linn.), † inhabits the interior of North America, east of the Rocky Mountains, breeding on the eastern shores of Hudson's Bay, migrating south in winter through the Mississippi Valley to the Gulf coast, and is found occasionally on the Atlantic coast.

There seems to be very little known regarding the nidification of the Snow Goose.

*Manual of N. A. Birds, p. 115.

†This bird is placed in the "Hypothetical List" of the A. O. U. Check List. Prof. Ridgway states that it is beyond question a good species. See Manual of N. A. Birds, p. 115.

So far as I can glean, the breeding habits are the same as those of the Canada Goose, nesting by the side of rivers, lakes and in marshes.

The eggs of the Lesser Snow Goose are from five to eight in number; their color is yellowish-white, and measure about 3.13 x 2.12.

[171.] *Anser albifrons* (G.M.) [593.]

White-fronted Goose.

Hab. Northern parts of Eastern Hemisphere and Greenland.

The White-fronted Goose of the Old World, which very closely resembles the American species, is distributed in its migrations throughout various sections of Europe, but is more abundant in the eastern than in the western portions. Said to extend its migrations into Central Africa, almost to the Equator. It breeds near the coast-line of the Arctic Ocean in Europe and Asia, and also on the lakes, larger rivers, bays and inlets. There is no difference between the general habits of this species and those of the American bird. It nests on the ground, in the immediate vicinity of water, making a large structure of sticks and hay which is lined with down.

The eggs are from four to six in number, yellowish-white in color, and measure about 3.10 x 2.05.

171a. *Anser albifrons gambeli* (HARTL.) [593a.]

American White-fronted Goose.

Hab. North America, breeding far northward; in winter, south to Mexico and Cuba.

Often called "Laughing Goose." It is of large size and robust form, may be known by its white forehead and spotted breast. A very handsome bird and a favorite with sportsmen. Large numbers are often killed on the lakes and reservoirs in spring and fall.

The White-fronted Goose is common throughout the whole of North America, but is more abundant on the Pacific coast than in the interior or along the Atlantic. It flies in V-shaped flocks, frequently uttering a loud, harsh cry, which may be heard at a considerable distance. This species breeds in high latitudes and is particularly abundant in Alaska, nesting in large numbers along the Yukon river, laying its eggs in depressions in the sand. Said to breed also on Stuart's Island and other islands along the coast. Its favorite resorts are in the vicinity of fresh-water lakes. Along the Lower Anderson river, on the Arctic coast and on the islands of the Arctic Sea this species breeds in abundance in June and July. The nests are made in a depression of the ground, and made of hay, feathers and down. Dr. Brewer states that nests found by Mr. MacFarlane were generally found in wooded districts.

The eggs are six or seven in number, and measure from 2.90 to

3.30 long by 2.05 to 2.10 broad. They are elliptical in shape, dull greenish-yellow with obscure darker tints.

172. *Branta canadensis* (LINN.) [594.]

Canada Goose.

Hab. Temperate North America, breeding in the Northern United States and British Provinces; south in winter to Mexico.

The Common Wild Goose of North America, in its various forms and great extremes of size, is generally distributed throughout the continent at large, *B. canadensis* proper, breeding, as indicated in the above habitat.* It is the most abundant of our geese. Large numbers may be seen during the spring and fall migrations flying overhead in wedge-shaped flocks, with an old gander always in the lead at the apex of the triangle, frequently uttering the sonorous *honk*, *honk*, which is often heard at a great height. In many places they breed in captivity with the common domestic goose, producing a hybrid bird much esteemed for the table. It has been learned from birds in confinement that none of them lay until three years old; the first season four eggs are laid, five the second season, and when older six and seven.†

Dr. Coues alludes to the breeding of the Canada Goose in trees in various parts of the Upper Missouri and Yellowstone regions.‡ Breeding grounds, inundated along the banks of streams, have at times caused the birds to resort to trees for the purpose of nesting, some making use of Herons' and Ravens' nests.§ Nests of the Canada Goose in Dakota are usually situated far away from water on the prairies.

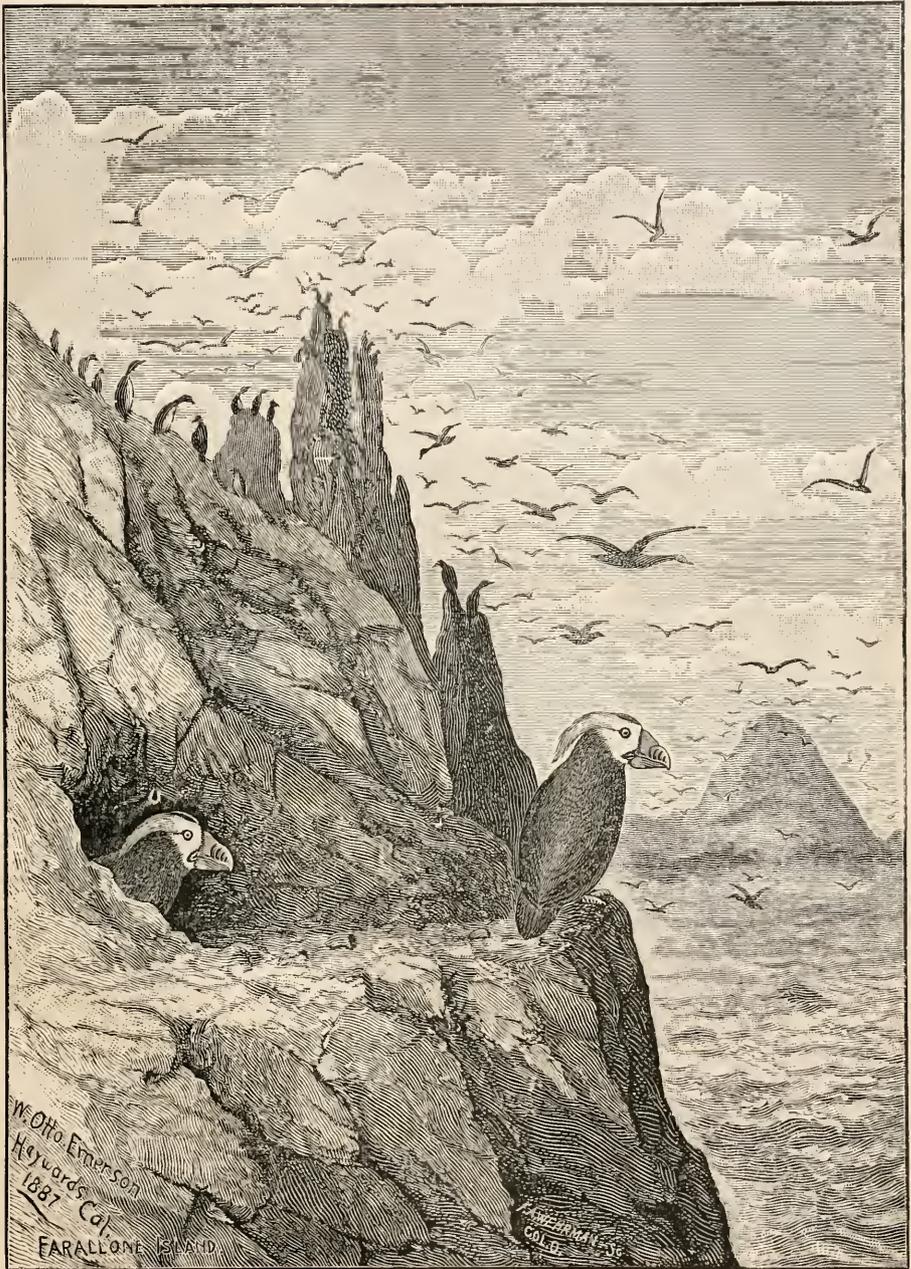
Dr. Merrill found this species breeding on the Upper Missouri, Yellowstone, and Big Horn Rivers, where their favorite nesting sites were on the numerous low sandy islands in these rivers, covered in the higher parts with a growth of young willows. Their nests were simply a hollow in the sand, around which was placed a few sticks and twigs, and the eggs lay on a layer of gray down. Nests were found on the tops of broken trunks of trees; one on a rocky ledge three hundred yards from the river; another was made on a pile of brush that had collected in the top of a fallen tree that had floated down and lodged near the middle of the river; some nests were placed on the high banks among high grass, or on piles of drift-wood. By the first of May the nests contained the full complement of eggs, generally five

*The form *Branta canadensis occidentalis* (Baird) occurs in Pacific coast region, from Sitka south, in winter to California. It is larger and the coloration darker.

† Wm. Dutcher, in *The Auk*. Vol. II., p. 111.

‡ *Birds of the Northwest*. Pp. 554-555.

§ Capt. Chas. E. Bendire: *Bull. Nutt. Club*. Vol. I., p. 50.



TUFTED PUFFINS AND NESTING BURROW.

(*Lunda cirrhata*.)

in number. Dr. Merrill says: "When these geese nest among the branches of a tree I do not think they ever construct the nest entirely themselves, but take possession of a deserted nest of the Fish Hawk, and repair it with twigs and a lining of down. They have been seen to carry small sticks to the nest for this purpose."* The color of the eggs is a pale dull greenish, and their size is about 3.50 x 2.50.

172a. *Branta canadensis hutchinsii* (Sw. & RICH.). [594a.]

Hutchins's Goose.

Hab. North America, breeding in the Arctic regions, migrating south in winter, chiefly through the Western United States and Mississippi Valley; Eastern Asia.

This bird, which is like *canadensis* in color, but of smaller size, breeds in boreal regions. Its general habits are the same as those of the common Canada Goose. Breeds abundantly along the Yukon River and on the islands on the coast of Alaska. Nests have been found on the Islands of the Anderson River and on the Arctic coast. In these regions eggs of this species have been taken from Hawks' and Crows' nests built in trees. It nests usually on sand-beaches, depositing from four to six eggs in hollows in which there are more or less leaves, grasses, feathers and down.

The eggs are white, and measure 3.18 x 2.10. In the Arctic regions the eggs are laid in June and July.

172c. *Branta canadensis minima* RIDGW. [594b.]

Cackling Goose.

Hab. Coast of Alaska, migrating southward into Western United States east to Wisconsin.

A smaller bird than Hutchins's Goose. It is abundant in Northern Alaska, where it breeds, chiefly, however, about the shores of Norton Sound and along the Lower Yukon, nesting like the foregoing.

Its eggs measure 3.02 x 2.00.

173. *Branta bernicla* (LINN.) [595.]

Brant.

Hab. Northern portions of the Northern Hemisphere; in North America chiefly on the Atlantic coast, rare in the interior or away from salt water.

The Brant Goose is almost cosmopolitan in its distribution. It is found on the sea coasts of Europe and eastern North America, breeding only within the Arctic circle. While being more maritime than United States geese generally are, it is also found inland occasionally on lakes and rivers. During the migrations it is abundant, and seems to prefer the coast to the interior, seldom passing over large tracts of land, following the windings of the shore, and nearly always keeping

*Bull. Nutt. Club. Vol. VIII pp. 124-125.

over water. The Brant is a particular favorite with sportsmen, and many are shot from points of land which project out into the sea.

The common Brant Goose is said to breed in immense numbers in Spitzbergen and on the islands about the coast. The nest is constructed on the sandy beaches, of feathers and down, the birds depositing from four to six eggs. In Greenland where this species breeds, some of the birds make their nests on cliffs.

The eggs are grayish or dirty-white, and measure 2.92 x 2.02.

174. *Branta nigricans* (LAWR.) [596.]

Black Brant.

Hab. Arctic and Western North America; rare in the Atlantic States.

The Black Brant is very closely allied to the common Brant Goose; it is found on the Pacific coast, where the latter does not occur. Its summer home is in high latitudes, and in Alaska, the mouth of the Yukon, is said probably to form the extreme southern limit of this bird's occurrence in the breeding season. Breeds in abundance on islands northeast of the mouth of Anderson River, in Liverpool Bay on the Arctic coast, on the shores of Franklin Bay, and on various other parts of the coast, especially in regions west of Anderson River. In these regions, according to Dr. Brewer, nests were found by Mr. MacFarlane on small islets in fresh water ponds; others on islands in the Anderson near its mouth; many were made on the shore or on islands in Franklin Bay, and in various parts of the Arctic Sea. Some of the nests were nothing but mere depressions lined with down, while in others the quantity of down was quite large. The number of eggs in a nest was generally five; but in one case as many as seven were seen, and in six or seven instances six.

The eggs are grayish-white, and range from 2.75 to 2.90 long by 1.80 to 1.85 broad.

[175.] *Branta leucopsis* (BECHST.) [597.]

Barnacle Goose.

Hab. Northern parts of the Old World; casual in Eastern North America.

The Barnacle Goose inhabits the northern portions of Europe and is occasionally found on the Atlantic coast of North America. But many of the specimens taken on this side of the Atlantic are birds that are supposed to have escaped from confinement.

In great Britain it is a winter visitant. During the migrations it is said to be found in great numbers along the coast of Norway, and at these seasons it is stated to be abundant in Holland, France and Germany. It is said to occur during the breeding season in Northern

Siberia. The shores of the White Sea to the eastward, are supposed to be the great breeding places of this bird.*

The eggs are grayish-white and measure 3.71×2.38 .

176. *Philacte canagica* (SEVAST.) [598.]

Emperor Goose.

Hab. Coast and islands of Alaska.

A notable species known also as the Painted Goose from its variegated plumage. It inhabits the coast of Alaska, north of the peninsula, chiefly about the shores of Norton Sound, and is abundant about the mouth of the Yukon. The color of the plumage is a bluish-gray, with lavender shading and positive black crescent-shaped marks. The head is white, often with a yellowish tinge; the throat black, speckled with white, and the tail is also white; the feet are flesh-color. It breeds north as far as Bering Strait.

Dr. Coues says the eggs of this species are about five in number; size, 3.35×2.00 ; white, with fine, pale-brown dotting, giving a general pale, dirty-brown color.

177. *Dendrocygna autumnalis* (LINN.) [599.]

Black-bellied Tree-duck.

Hab. Southwestern border of the United States and southward.

The Autumnal Tree-duck is a species of variegated plumage and long legs. It inhabits the southwestern border of the United States and southward to Mexico, West Indies, Central and South America. It is commonly called "Long-legged Tree-duck." Along the Rio Grande in Mexico and Texas it is abundant from April to October and later. Dr. Merrill found it common in Southern Texas. He says: "This large and handsome bird arrives from the South in April, and is soon found in abundance on the river banks and lagoons. Migrating at night it continually utters a peculiar chattering whistle, which at once indicates its presence. Called by the Mexicans *patos maizal*, or Corn-field Duck, from its habit of frequenting those localities. It is by no means shy, and large numbers are offered for sale in the Brownsville market. Easily domesticated, it becomes very tame, roosting at night in trees with chickens and turkeys. When the females begin to lay, the males leave them and gather in large flocks on sand-bars in the river. My knowledge of the breeding habits is derived from Dr. S. M. Finley, U. S. A., who had ample opportunity of observing these birds at Hidalgo. The eggs are deposited in hollow trees and branches, often at a considerable distance from water (two miles), and from eight to thirty feet or more from the ground. The eggs are placed on the bare wood, and are from twelve to sixteen in number. Two broods

*Yarrell, III, p. 74.

are raised, and the parent carries the young to the water in her bill. Twelve eggs received from Dr. Finley average 2.11×1.53 , with but little variation in size; they are of the usual duck shape, and in color are a rather clear yellowish-white. The birds leave in September, but a few late broods are seen as late as November. The soft parts in a full plumaged living male were as follows: iris, brown; bill, coral-red, orange above; nail of bill, bluish; legs and feet, pinkish-white.”*

178. *Dendrocygna fulva* (GMEL.) [600.]

Fulvous Tree-duck.

Hab. Southern border of the United States: Louisiana, Texas, Nevada, California, southward.

Resembles the last in its general appearance, habits, etc. Its geographical range is chiefly within the tropics, extending as far South as the Argentine Republic. Dr. Merrell states that this species is about as common as the Corn-field duck in Southern Texas, both species frequenting the same places. He learned nothing definite in regard to its breeding habits, but they probably do not differ much from those of the other bird. The Fulvous Tree-duck is said to lay from ten to fifteen pure white eggs.

[179.] *Olor cygnus* (LINN.) [586.]

Whooping Swan.

Hab. Europe and Asia; Greenland.

In Europe this bird is called “Hooper,” “Elk,” and “Whistling Swan.” It is a winter visitant to the more southern portions of Great Britain, and is found throughout the year in the Orkneys and other islands north of Scotland. Known to visit Holland, France, Spain, and Italy, and a few are said to penetrate as far south as Barbary and even Egypt. It is of occasional occurrence in Southern Greenland. Breeds in the secluded swamps and lakes up in Lapland, nesting on the ground in marshy places. It also breeds in Iceland. The nest is large and composed of rushes, coarse grass, and almost any material near at hand.

As many as seven eggs are laid by this species; they are of a dull brownish white, or dark ivory color, and measure 4.28×2.88 .

180. *Olor columbianus* (ORD.) [588.]

Whistling Swan.

Hab. Entire of North America, breeding far north.

The common American Whistling Swan is the smaller of the North American species, measuring under five feet in length. There is a small yellow spot on the bill in front of the eyes, and it is sometimes wanting. The tail feathers are normally twenty. This bird is found in the United States in winter, and during the migrations.

*Notes on the Ornithology of Southern Texas: Proceedings U. S. National Museum, Vol. I., page 169.

The Whistling Swan breeds in the Arctic regions on the small lakes of the coast and islands of the Arctic Sea, nesting in June and July. A few are said to breed in the interior of the Fur Countries. All along the Yukon River, and especially near its mouth this species is said to breed in the large marshes. Here the eggs are usually laid on a tussock entirely surrounded by water, and so near it that the female sometimes sits with her feet in the water.

On the islands of Franklin Bay and on those of the Arctic Ocean, the Whistling Swan constructs a large nest of moss, grass and herbage of various kinds.

The eggs are from two to five in number, and measure from 2.25 to 2.50 in breadth by 4.00 to 4.50 in length. They are of a dull white with more or less brownish or reddish discoloration; the surface of the shell is rough.

181. *Olor buccinator* (RICH.) [589.]

Trumpeter Swan.

Hab. Chiefly the interior of North America, from the Gulf Coast to the Fur Countries, breeding from Iowa and Dakota northward; west to the Pacific coast, but rare or casual on the Atlantic.

During the breeding season the Trumpeter Swan is found almost exclusively in the interior of the northern regions. A few breed in Central and Northern Iowa and in Dakota; from thence northward. Dr. Brewer states that the nests found by Mr. MacFarlane on the barrens of the Arctic coast were usually placed on elevated ground, and they were composed of hay, down and feathers intermingled. One nest containing six eggs, was found near the beach on rising ground; others were observed near the banks of the Lower Anderson River.

On the islands in the fresh water lakes and ponds bordering the north branch of the Saskatchewan River, in British America, a few pairs of the Trumpeter Swan are to be seen throughout the summer. This species is also known to breed in Alaska.

The full grown bird is five feet or more in length, and may be distinguished from the Whistling Swan by its entirely black bill and having normally twenty-four tail-feathers.

The eggs range from two to six in number; chalky-white with a rough surface; sizes from 4.03 to 4.50 long by 2.50 to 2.76 broad.

182. *Phœnicopterus ruber* LINN. [585.]

American Flamingo.

Hab. Atlantic coasts of subtropical and tropical America; Florida Keys.

This magnificent bird of scarlet plumage is a constant resident of Cuba, the Bahamas and southward; rare at Cape Sable and on the Florida Keys. It is a remarkable bird and of striking appearance,

having long legs and neck, the former of a lake-red color. The bill is unique in shape, being abruptly bent in the middle, so that when feeding the upper surface faces the ground. The plumage is scarlet throughout, except the primaries and secondaries, which are black. The stature of the bird is nearly five feet, and it weighs in the flesh six or eight pounds. The nest of the Flamingo is described as a mass of earth, sticks and other material scooped up from the immediate vicinity to the height of several feet and hollow at the top. On this the birds sit with their legs doubled under them. The old story of the Flamingo bestriding its nest in an ungainly attitude while incubating is an absurd fiction. The eggs are one or two in number, elongate-ovate in shape, with a thick shell, roughened, with a white flakey substance, but bluish when this is scraped off. It requires thirty-two days for the eggs to hatch. Size 3.57 x 2.20, with considerable variation.

183. *Ajaja ajaja* (LINN.) [505.]

Roseate Spoonbill.

Hab. Southern United States and southward into Southern South America.

The Rosy Spoonbill, of so handsome plumage and singular form, is distributed throughout South and Central America, Mexico, and in all favorable localities of the Gulf region of the United States. In Florida it was formerly abundant, but its numbers have greatly diminished by the constant persecution of the 'plume hunters.' Rare as far north as the Carolinas. Marshy or muddy borders of estuaries, the mouths of rivers, shrubby islands of tropical seas, or some dense marsh, are the favorite breeding resorts.

Mr. R. E. Rachford visited a small colony of these birds in Southwestern Louisiana, June 2, 1886. The birds were found nesting in a clump of cypress trees in a low marshy place fully twenty miles from habitation. Here also nested the Snowy, Louisiana and Little Blue Herons, and the Snake Bird.

The nests of the Spoonbills were placed from eight to eighteen feet from the ground, and the usual number of eggs found in the nests was three or four; although from one nest seven eggs were taken, and five or six from several others. The nests were platforms of sticks, and for the most part were built close to the trunks of the trees; they were usually more massive than the Herons' nests.

The general shape of the eggs is ovate; and their color is white, or buffy-white, blotched, spotted and stained with various shades of brown; sometimes a pure white egg is found in a nest with spotted or marked examples. Mr. Norris has a beautifully marked set of three eggs collected by Mr. Rachford, which, if it were not for their elon-

gated shape, could be readily mistaken for handsomely marked specimens of eggs of the Red-shouldered Hawk, *Buteo lineatus*. The average size of the egg is 2.57×1.73 .

184. *Guara alba* (LINN.) [501.]

White Ibis.

Hab. South Atlantic and Gulf States southward to the West Indies and Northern South America; casually on the Atlantic Coast to Long Island; in the interior to the Lower Ohio Valley and Great Salt Lake.

The White Ibis or Spanish Curlew is distributed in summer throughout the South Atlantic and Gulf States from the Carolinas southward, throughout Mexico, Central America, and portions of Northern South America. It breeds in communities by thousands in the tangled marshes of the southern coast; fastening the nest to broken down or upright living reeds; it is composed of reeds, compactly woven together, is deep and much hollowed, which is unlike the frail platform nests of the herons.

Mr. Stuart says the White Ibis breeds abundantly on the low mangrove bushes on the islands of the Gulf coast. There is a large rookery in Charlotte Harbor. The nests are usually made of the green twigs of the mangrove. The eggs are laid in June. At Cape Sable eggs are deposited after the 10th of April; these are from three to five in number, ashy-blue, spotted and blotched irregularly with yellowish, reddish and umber-brown of varying shades; two or three in number, and measure about 2.25 by 1.50 .

185. *Guara rubra* (LINN.) [502.]

Scarlet Ibis.

Hab. Eastern coasts of tropical America, north casually to Florida, Louisiana and Texas; southward to the West Indies.

An exquisite bird of the richest scarlet plumage. There is probably no well authenticated instance of its having been taken within the United States. Wilson was not correctly informed concerning its abundance in the Southern States, and Audubon only saw a flock of three in Louisiana. The bird is said not to be an uncommon visitant to Jamaica and Cuba, and very common on the Island of Trinidad, where it formerly nested. Mr. Warren observed the Scarlet Ibis breeding in immense colonies on the banks of the Amazon, in dense, impenetrable thickets of bamboo canes, several kinds of thorny cactus and Spanish bayonets, besides numbers of small mangroves and palmettoes, all interlaced and tangled with huge vines. In one place every bush and tree had on it from five to twenty nests; they were about a foot and a half in diameter and perfectly flat; the materials used in their construction were twigs, fibrous roots and leaves. Mr. Warren

states that the ibises, being disturbed, rose in immense numbers, and a more striking spectacle than a large flock of these splendid birds floating through the air, like a crimson cloud, cannot possibly be conceived. The rookeries are only tenanted during the dry season.

The eggs are two or three in number, grayish-white in color, marked with spots and blotches of brown of varying shades, and distributed variously over the surface, but generally more profusely at the larger end. The average size is 2.15×1.46 .

186. *Plegadis autumnalis* (HASSELQ.) [503.]

Glossy Ibis.

Hab. Old World, West Indies, and Eastern United States.

This species occurs irregularly in the eastern portions of the United States, and has been known to breed in Florida. It has also been found breeding in Nevada. In Europe the course of its migrations for the summer is said to be chiefly in a line from Egypt, to Turkey, Hungary and Poland, and to the southern parts of Russia. In its passage from Africa it is occasionally seen in the Grecian Archipelago, in Sicily, Sardinia, Genoa, Switzerland, France, Holland and Great Britain.

The nesting of the Glossy Ibis is like that of the next species. The eggs are of a deep greenish-blue and average 2.01×1.47 .

187. *Plegadis guarauna* (LINN.) [504.]

White-faced Glossy Ibis.

Hab. Western United States (Texas, Utah, Nevada, Oregon, California, etc.), southward to Mexico, West Indies, Central and South America.

This beautiful, lustrous Ibis inhabits southwestern United States and south into tropical America. It is found as far north as Kansas, west through New Mexico and Arizona to California. It is especially abundant in southern Texas, and in some localities along the banks of the Rio Grande swarms by thousands. At this place Dr. James C. Merrill, in company with Mr. G. B. Sennett, on the 16th of May, 1877, visited a large patch of tule reeds, growing in a shallow lagoon about ten miles from Fort Brown, in which large numbers of this Ibis and several kinds of Herons were breeding. The reeds covered an area of perhaps seventy-five acres or less. Besides the Ibises, the Great and Little White Egrets, Louisiana and Night Herons, and several other birds were breeding here. The reeds grew about six feet above the surface of the water, and were either beaten down to form a support for the nests, or dead and partly floating stalks of the previous year were used for that purpose. Dr. Merrill states that it was impos-

sible to estimate the number of the Ibises and different Herons nesting here. "Both nests and eggs of the Ibises were quite unlike those of any of the Herons, and could be distinguished at a glance. The nests were made of broken bits of dead tules, supported by and attached to broken and upright stalks of living ones. They were rather well and compactly built, and were usually well cupped, quite unlike the clumsy platforms of the Herons. The eggs were nearly always three in number, and at this date were far advanced in incubation; many of the nests contained young of all sizes. Fifty eggs now before me average 1.95×1.35 , the extremes being 2.20×1.49 and 1.73×1.29 ; they are decidedly pointed at the smaller end, and are of a deep bluish-green color."

188. *Tantalus loculator* LINN. [500.]

Wood Ibis.

Hab. Southern United States, from Ohio Valley, Colorado, Utah, California, etc., south to Buenos Ayres: casually northward to Pennsylvania and New York.

The American Wood Stork, as it is called, is distributed over a large portion of South and Central America, Mexico and Southern North America. It is found in all the Gulf States, and is most abundant in Florida, where, Mr. Stuart informs me, it nests in the interior in dense cypress swamps, on the tallest trees, which are often more than one hundred feet in height. In these rookeries are also found nesting the American Egret, *Ardea egretta*; Great Blue Heron, *A. herodias*; the Anhinga and others. The nests, like those of the Herons, are platforms of sticks loosely arranged, with a lining of long moss. The same rookery is occupied each year, and the nests are repaired and augmented until they often become of immense size.

The eggs are chalky-white, sometimes spotted with pale reddish-brown; somewhat elliptical. The shell is rough, with a flaky substance. Two or three is the number laid, but almost invariably three. Size from 2.70 to 2.75 long by 1.70 to 1.75 broad.

189. *Mycteria americana* LINN. [499.]

Jabiru.

Hab. Tropical America, north casually to Southern Texas.

This singular bird is known as the American Stork. It is found in portions of Central America and throughout most of South America. One specimen is said to have been taken within the limits of the United States, and that near Galveston, Texas. The bird is said to have the same general habits peculiar to the White Stork of Europe. The nest is a large platform of sticks built in the highest trees.

The egg is described as rounded-oval in shape, and of an olive-green color; size 3.33×2.20 .

190. *Botaurus lentiginosus* (MONTAG.) [497.]**American Bittern.**

Hab. Temperate North America, south to Guatemala and the West Indies.

This noted bird is known by various names, such as Indian Hen, Stake Driver, Bog-bull, and Thunder Pump. It inhabits the entire temperate North America, north to 58° or 60°, and breeds chiefly from the Middle districts northward, wintering thence southward. The name last mentioned is occasioned by its hoarse, gurgling cry of alarm. The bird is often spoken of by the poets as the "booming bittern." In the breeding season it has a "love note" that resembles the stroke of a mallet on a stake, *chunk-a-lunk-chunk*, *quank-chunk-a-lunk-chunk*. The American Bittern never associates with other species of Heron and is not even fond of the society of its own kind. It does not breed in colonies and the nest is difficult to discover. It inhabits almost impenetrable swampy places: the bog, the reedy marsh, and the tangled brake, where its nest is placed on the ground. The eggs are brownish-drab or isabella color, unspotted, elliptical in shape, three to five in number, but generally only three; size from 1.90 to 2.00 long by about 1.50 broad.

191. *Botaurus exilis* (GMEL.) [498.]**Least Bittern.**

Hab. Temperate North America, from the British Provinces to the West Indies and South America.

An extremely interesting little bird, of quiet, retiring habits. Breeds throughout its range. In some places as many as a dozen or twenty pairs breed along the grassy shores of a small lake or pond. Like the last it inhabits reedy swamps and marshes where the quagmire abounds with a luxuriant growth of rushes, which is also the home of the Rails. The nest is placed on the ground or in the midst of the rankest grass, or in a bush. It is often placed on floating bog, and is simply a platform of dead rushes. The bird has many odd habits. When standing on the edge of a stream, with its neck drawn in, it is often taken for a woodcock, the long bill giving it this appearance. It appears so stupid at times that it may be caught with the hand. The bird is mostly seen just before or after sunset. In many of the Southern States this species rears two broods in a season, fresh eggs having been obtained in May and in August. In Texas, Mr. Rachford says it nests along the edges of the water courses in May bending down the tops of water grass and plating it into a snug little nest, about two or three feet above the water. Mr. Perry informs me that the Least Bittern in Beaufort county, South Carolina, makes its home in the fresh water ponds and commences to build about the 10th of May, fixing the nest in the thick rushes. The eggs of the Least

Bittern are from three to five, usually four, in number, pale bluish or greenish-white, elliptical in shape. Six eggs measure as follows: 1.15 x .90, 1.16 x .93, 1.22 x .95, 1.23 x .92, 1.24 x .93, 1.23 x .93. The average size is 1.20 x .93.

192. *Ardea occidentalis* AUD. [486.]

Great White Heron.

Hab. Florida, Jamaica, accidental in Mississippi Valley.

This beautiful, majestic bird, known as the Florida Heron, is an abundant resident of Florida, the Keys and southward to Cuba and Jamaica. In Florida, however, it is said not to be so abundant as in former years. Whole rookeries have been destroyed by the 'plume hunters,' who collect feathers for hats and other decorative purposes. The birds are killed and the plumes are taken from their back, head and breast, and the carcasses thrown to the buzzards.*

This Heron nests usually in large colonies, and in company with the Great Blue Heron. Most of the nests are built low down, not more than five or ten feet from the ground, but where the birds are disturbed the nests are placed in the highest mangroves. They are simply platforms of sticks.

The eggs are plain bluish-green, of varying shades; sizes from 2.00 to 2.45 long by 1.80 to 1.85 broad.

The bird known as *A. wuerdemanni* (Baird)† is believed to be either a colored phase of *A. occidentalis*, or an abnormal specimen of *A. wardi* Ridgw.

193. *Ardea wardi* RIDGW.

Ward's Heron.

Hab. Florida.

This large Heron in its white phase is described as indistinguishable from the Great White Heron; in the colored phase like *occidentalis*, but with the head colored as in the Great Blue Heron. It is restricted to Florida; common in the southwestern portion, and may frequently be found nesting along the coast. It breeds in communities with other herons, egrets and snake birds, constructing the same kind of nest as does the Great Blue Heron.

The eggs are four, often only three, in number. Prof. Ridgway gives the average measurement as about 2.65 x 1.85. Their color is bluish-green.

194. *Ardea herodias* LINN. [487.]

Great Blue Heron.

Hab. North America, from the Arctic regions southward to the West Indies and South America.

The Great Blue Heron is often erroneously called "Sand-hill

*See W. E. D. Scott's article on the Present Condition of the Bird Rookeries of the Gulf Coast of Florida in *The Auk*, Vol. IV, pp. 135-144, 213-222, 273-284.

†Placed in the Hypothetical List of the A. O. U. Check List.

Crane" or "Blue Crane"—in fact it is better known by either of these names than it is by its proper vernacular name. One of the most characteristic birds of North America, breeding singly and in colonies in suitable places throughout its range. In the warmer parts of the country it breeds in vast heronries in company with other species of herons, to which places they resort year after year.

In Florida it is very abundant, but its numbers are rapidly decreasing by the constant persecution of the 'plume hunters.' Its rookeries are so frequently broken up, and the remaining birds compelled to retire to other resorts, that the breeding season may be said to extend over a period of five or six months, and no doubt two broods are reared in a season.

The nest is placed in high trees along rivers, or in the depths of retired swamps; in localities destitute of trees it is built on rocks. Sycamore trees seem to be favorite resorts of these birds, the light color of the limbs and the peculiar tint of the foliage harmonizing so well with their plumage as to render their presence difficult of detection. The eggs are plain greenish-blue; varying from elliptical to oval in shape; three to six in number, commonly three or four; average size 2.50 x 1.50.

[195.] *Ardea cinerea* LINN. [488.]
European Blue Heron.

Hab. Europe; accidental in Southern Greenland.

This is a familiar Heron in Europe, and is very abundant in places where it is protected by law. In England most of its breeding places are guarded by land owners. In the middle ages when falconry was a favorite sport the bird was held as royal game, and penal enactments preserved it for the pleasure of royalty.

This Heron builds its nest according to circumstances, either on the ground, in trees, or on high rocks. It breeds in colonies, and its favorite nesting places are on the tops of trees, on the outer branches. The nest is large and flat, composed of sticks and lined with grass. Each year the nests are repaired and augmented until they become very massive.

The eggs are four or five in number, of a pale green color, and measure 2.42 x 1.72. Four eggs from England in my collection measure 2.48 x 1.67, 2.49 x 1.61, 2.52 x 1.64, 2.40 x 1.65.

196. *Ardea egretta* GMEL. [489.]
American Egret.

Hab. Temperate and tropical America, from New Jersey, Minnesota and Oregon, south to Patagonia; casually on the Atlantic coast to Nova Scotia.

This beautiful species, the Great White Egret of America, has an

extended distribution, breeding as far north on the Atlantic coast as New Jersey, on the Pacific coast to Oregon, and in the interior as far north as Southern Illinois. It breeds throughout South America to Patagonia, and is a resident on the Island of Trinidad. In the enormous rookeries of Florida this bird was formerly abundant, but of late years the 'plume hunters' have wrought great destruction in their numbers. It is a bird of purest white, and during the breeding season has a magnificent train of silky plumes flowing from the back over the wings and drooping far beyond the tail. The nests of the Great White Egret are built in deep cypress swamps, often on the tops of the tallest trees; others are found on low bushes or on mangroves, a short distance above water.

The eggs are plain bluish-green, varying from elliptical to oval; two to four in number and measure from 2.20 to 2.35 long by 1.40 to 1.65 broad.

197. *Ardea candidissima* Gmel. [490.]

Snowy Heron.

Hab. Temperate and tropical America, from Long Island and Oregon, south to Buenos Ayres; casual on the Atlantic coast to Nova Scotia.

The breeding range of this species is almost the same as that of the last. A few are supposed to be summer residents as far north as Long Island, from thence southward it is found along the entire Gulf coast and the shores of both oceans. It occurs in the interior as far north as Oregon. Very abundant throughout a large portion of South America, the West Indies, Mexico and Central America. It is called Little White Egret, and is doubtless the handsomest bird of this tribe. Pure white, with crest composed of numerous elongated, hair-like feathers; similar plume on the lower neck; the same on the back which extends beyond the tail and are *recurved* when perfect. In Texas, Mr. Rachford says this species nests in colonies, usually preferring willow bushes in the marshes for this purpose. The breeding season is from the latter part of April to the middle of June. Mr. Stuart mentions it as abundant along the Gulf coast of Florida, where it breeds on the mangrove islands, and in the interior in the willow ponds and swamps, generally in company with the Louisiana and Little Blue Herons. The nest is simply a platform of sticks.

The eggs are from two to five in number, usually four, varying from elliptical to oval in form; sizes from 1.80 to 1.85 long by 1.20 to 1.25 broad.

198. *Ardea rufa* Bodd. [491.]

Reddish Egret.

Hab. Gulf States and Mexico, south to Guatemala, Jamaica and Cuba.

The Reddish Egret is an abundant resident of the Gulf States.

It is common in Florida and in Mexico, southward to the West Indies and Central America. The bird called Peale's Egret* is supposed to be the white phase of *A. rufa*. The nesting habits of the Reddish Egret are essentially the same as those of the Louisiana and Snowy Herons. Mr. Stuart informs me that he has never found them very plentiful along the Gulf coast of Florida, where they breed on the islands, placing the nest on the mangrove bushes.

The eggs are light bluish-green, elliptical in form; two to four in number, and measure from 1.85 to 2.00 long by 1.40 to 1.50 broad.

199. *Ardea tricolor ruficollis* (GOSSE.) [492.]

Louisiana Heron.

Hab. Gulf States, Mexico, Central America and West Indies; casually northward to New Jersey.

In summer the Louisiana Heron is distributed from the Carolinas southward. It is very abundant all along the Gulf States, into Mexico and Central America, and is found in the West Indies. Known as "Lady of the Waters." It has an occipital crest of several long feathers and a splendid train of decomposed, fringe-like feathers extending beyond the tail.

Mr. Stuart states that it is very abundant on the mangrove islands along the gulf coast of Florida, where it breeds in communities, placing the nests on the mangrove bushes; in the interior it is found nesting in the willow swamps, and usually in company with the Little Blue and Snowy Herons. Four or five eggs are deposited. Fresh eggs may be found in May and June.

In Texas, Mr. Rachford says, this species nests similarly to the Snowy Heron, but its breeding season commences a little earlier than that of the latter—about the first of April.

The eggs are from two to four, sometimes five, in number, bluish-green, and measure from 1.75 to 1.80 long by 1.30 to 1.40 broad.

200. *Ardea cœrulea* LINN. [493.]

Little Blue Heron.

Hab. New Jersey, Illinois and Kansas, southward through Central America, West Indies, Guiana and New Grenada; casually north on the Atlantic coast to Massachusetts and Maine.

This beautiful little Heron is abundant in the South Atlantic and Gulf States. It has been found breeding in all favorable localities intermediate between Florida and New Jersey, on the coast, and specimens have wandered into the interior. It is found throughout Mexico, Central America and the northern portion of South America. The breeding habits are like those of the Snowy and Louisiana Herons,

*Hypothetical List of the A. O. U. Check List.

nesting with them in trees and bushes, often in large communities in deep swamps.

The eggs are bluish-green, two to four in number, generally more oval than other Herons' eggs are. The sizes vary from 1.60 to 1.82 in length by 1.25 to 1.35 in breadth.

The young of this Heron are *pure white*, and should not be confounded with immature specimens of *A. candidissima*, Snowy Heron, which is of the same size and similar form.

201. *Ardea virescens* LINN [494.]

Green Heron.

Hab. Canada and Oregon, southward to northern South America and the West Indies.

Throughout the United States in all favorable localities this is a well-known and an abundant bird, breeding in suitable places anywhere in its range. It has a number of common names, among which "Fly-up-the-Creek" is probably the most refined. It is resident in the West Indies and in Central America, and is found in the northern regions of South America. The bird frequents the borders of ponds and swamps, or it may be found along running streams whose banks are fringed with trees or thick shrubbery. While on the wing it frequently utters its familiar guttural cry or squawk. Its food consists of insects and aquatic larvæ, crustacea and small fishes, for which it usually searches in the twilight. During the day it is sluggish, and may be found quietly resting.

The nest of this Heron is made of twigs, very loosely put together; it is placed in the branches of trees or bushes on the border of a stream or swamp; sometimes in an orchard tree at considerable distance from water.

The eggs are light greenish-blue, elliptical in shape and are from three to six in number, four being the usual nest complement. Average measurement is 1.50 x 1.14.

202. *Nycticorax nycticorax nævius* (BODD.) [495.]

Black-crowned Night Heron.

Hab. America, from the British Possessions southward to the Falkland Islands.

A handsome bird, whose neck and legs are not so long as those of other Herons. It has a stout body, and its total length is about two feet. It has two or three very long white, filamentous plumes springing from the occiput.

The Black-crowned Night Heron, Qua-bird or Squawk, as it is variously called, is found throughout the entire continent of America, except the Arctic regions. It breeds in several of the West Indies,

and is resident throughout Central America, breeding in all suitable localities. It is found throughout the greater portion of South America, and has been observed breeding on the Falkland Islands. Throughout the United States, in various sections, large colonies may be found during the breeding season. Hundreds, and even thousands, colonize and form extensive heronries. Mr. M. B. Griffing, of Shelter Island, N. Y., says that in the heronry on Gardiner's Island as many as four nests were found in a single tree, all containing eggs. Tall trees are usually selected for the nesting sites, and they are not always easy of access. The nests are bulky platforms of sticks, considerably hollowed. Mr. Rachford says that in the vicinity of Beaumont, Texas, this Heron nests in cypress trees along the banks of streams, and that the breeding season begins about the first of April. The greatest number of eggs found in any nest is four, which is the usual number. In all the sets that Mr. Griffing and Mr. Worthington had collected for three years there were but four sets containing more than four eggs; these were three of five and one of six.

The eggs are pale, bluish-green, varying from elliptical to oval; sizes from 1.90 to 2.15, by 1.35 to 1.55 broad. In some localities the nest of this Heron is built on the ground in marshes.

203. *Nycticorax violaceus* (LINN.) [496.]

Yellow-crowned Night Heron.

Hab. Warm-temperate Eastern North America, from the Carolinas and the Lower Ohio Valley south to Brazil; casually north to Massachusetts and west to Colorado.

The Yellow-crowned Night Heron is a southern species, known to breed on the Atlantic coast as far north as the Carolinas, and in the interior as far north as Southern Indiana, Illinois and Missouri. It is found along the entire Gulf coast of Mexico, throughout the West Indies, Central America and in Northern South America. The bird is very similar to the Black-crowned Night Heron, but is a little smaller. The back and head are furnished with long, elegant, lanceolate plumes. The general color is pale, ashy-blue. Its nest is a slight platform of sticks. In some parts of the Southern States this Heron is said to be quite abundant, while in others it is rarely met with. In portions of Florida it breeds in great numbers, generally in company with other species, forming large heronries, especially in the interior in large cypress swamps. In the southern portion of South Carolina it nests in swamps or in tall trees which are surrounded by water. In various regions of Texas the nest of this Heron is built on the lower branches of a cypress tree, near some stream. Mr. Rachford says he never found more than two or three nests in close proximity to one another,

but frequently found the birds breeding in company with the Snowy and Louisiana Herons. The nesting season is during April and May. He has taken as many as six eggs from a nest; the usual number, however, is four. They vary in shape from elliptical to oval; sizes 1.90 to 2.00 long by 1.40 to 1.50 broad.

204. *Grus americana* (LINN.) [582.]

Whooping Crane.

Hab. Interior of North America, from the Fur Countries to Florida, Texas and Mexico, and from Ohio to Colorado.

The Great White or Whooping Crane is confined to the interior of North America, and breeds from Illinois, Iowa, Minnesota and Dakota northward, passing the winter in the swamps of Florida and Texas. Its chief line of migration seems to be the Mississippi Valley at large. It is said to be common in the Fur Countries. Breeds in various places throughout Manitoba, building its nest on the ground in the midst of rank grass near marshes, or in wet meadows. Mr. J. W. Preston mentions the finding of a number of nests in Northern Iowa. One found in the marshes near Eagle Lake, was about eighteen inches in height, well built of tough, fine marsh grass and placed on firm sod; it was neatly cupped and contained two heavily marked, drab-colored eggs.*

The eggs of the Whooping Crane are large and coarse looking; in color, light brownish-drab, sparsely marked, with large irregular spots of a pale dull chocolate-brown and obscure shell-markings; elliptical; the shell is very rough, covered with numerous elevations like little warts; Dr. Coues says two (or three?) in number; size about 3.75 by 2.65. Some eggs are blotched irregularly over the surface, while others are marked at the smaller or greater end. Two eggs in my collection from Northern Iowa measure 3.89 x 2.52, 4.03 x 2.55, respectively.

205. *Grus canadensis* (LINN.) [584.]

Little Brown Crane.

Hab. Arctic and subarctic America, breeding from the Fur Countries and Alaska to the Arctic coast, migrating south in winter into the Western United States.

The Little Brown Crane, which is almost exactly like the next species, but smaller, is abundant in Arctic America. Specimens of the bird and its eggs have been taken in various parts of Alaska. Common on the Island of St. Michael's and at the mouth of the Yukon. Eggs were obtained by Mr. Dall, on the Yukon river, June 17th. They were laid in a depression of the sandy beach. This species is common in the marshes of Norton Sound, where their nests are built on the dry knolls, and the eggs are laid before the end of May. Throughout most parts of Manitoba, the Little Brown Crane is a

*The Oologist, Vol. IV, p. 43.

common summer resident. Eggs have been obtained on the Lower Anderson river, in Franklin Bay, and in Liverpool Bay on the Arctic coast. The nest is said to be a hole scooped in the ground, lined with grasses.

The eggs are two in number; their color ashy-yellow, spotted and blotched with reddish-brown, of the same general character as those of the preceding species; rather elliptical; size 3.65×2.30 .

206. *Grus mexicana* (MULL.) [583.]

Sandhill Crane.

Hab. Southern half of North America; now rare near the Atlantic coast, except in Georgia and Florida.

The Southern Sandhill Crane, Common Brown or Sandhill Crane, as it is variously called, is found in the United States chiefly in the Mississippi Valley west to the Pacific coast and south into Mexico and eastward along the Gulf coast to Florida and Georgia. It is irregularly distributed and apparently breeds in sufficiently mild regions throughout its range. It has been found nesting in Michigan, is reported breeding in Northern Ohio, and is known to breed on the table-lands of Colorado.

Mr. Stuart says that in various regions of Florida, this species nests during the months of February, March and April. The nests are usually built in shallow grassy ponds, which are common in the pine woods and prairies of that State. They are flat and composed of a mass of grass, weeds, roots, etc., slightly elevated above the water, oftentimes not more than two or three inches. On this structure two eggs are deposited. Mr. Stuart remarks that the young birds are able to follow the parents soon after being hatched.

The eggs are ashy-yellow, with a buffy tinge, spotted and blotched with brown, reddish-brown and various shades of gray. The average size is 3.98×2.44 . Two eggs in my cabinet from Florida measure 3.85×2.35 , 3.82×2.36 .

207. *Aramus giganteus* (BONAP.) [581.]

Limpkin.

Hab. Florida; coast of Gulf of Mexico; Greater Antilles, south to Costa Rica.

The Courlans are large, Rail-like birds and are in fact very closely allied to the true Rails, with but a slight difference in their external structure. There is one genus with two species, inhabiting the warmer parts of America. The Brazilian Courlan, *A. scolopaceus* (Gmel.), occurs in Eastern South America, while the Limpkin, which holds a place in the North American fauna, is found in the Greater Antilles, portions of Central America, with only a restricted distribution in Flor-

ida. It is called Crying Bird from its loud and startling note which is said to be not unlike the cry of a child in distress. Mr. Thomas H. Jackson met with this species breeding in the sub-tropical wilds of the Ocklawaha river in Florida. He states that this bird chooses for a nesting place a secluded spot on the banks of a river or slough. Several pairs often nest close together in the manner of Herons, though isolated nests are frequently observed.

The nest is made of pieces of dead vines, dry leaves and old vegetation of various kinds loosely constructed and generally bedded on a mass of vines, from five to eight feet from the ground.

The usual complement of eggs laid is five or six; four and seven are not uncommon numbers. Fourteen sets in Mr. Jackson's cabinet consist of eight sets of six, one of five, two of seven, two of four and one of three eggs. In size, shape and texture of shell they resemble those of the domestic fowl, while in color and markings they are similar to those of the Sandhill Crane—varying from almost pure white to creamy, buff, and grayish-white. The eggs are variously spotted, daubed and stained with brown and gray.

A set of six eggs containing the largest specimens in the series, exhibit the following dimensions: 2.57×1.80 , 2.44×1.55 , 2.40×1.77 , 2.28×1.75 , 2.39×1.80 , 2.41×1.83 ; the set showing the smallest sizes are given as follows: 2.21×1.72 , 2.21×1.70 , 2.22×1.62 , 2.23×1.63 , 2.45×1.63 , 2.23×1.65 .*

208. *Rallus elegans* AUD. [569.]

King Rail.

Hab. Fresh-water marshes of Eastern United States from the Middle States, Northern Illinois, Wisconsin and Kansas southward. Casually north to Massachusetts and Maine, and Ontario.

The King Rail, Fresh-water Marsh Hen, or Red-breasted Rail, is distributed in summer from New York southward, breeding throughout the inland marshes. It is a summer resident in Ohio. I collected eggs of this species in a marsh a few miles from Columbus in May, 1887. It is frequently confounded with the Clapper Rail; the latter, however, is confined to the vicinity of salt water, and is a bird of duller plumage. The nest of this Rail is placed on the ground in a marsh, often fastened in a tussock of grass. It is composed of grass and weeds.

The eggs vary from a dull white to cream or pale buff, sparsely dotted and spotted with reddish-brown and lilac; six to twelve in number; size from 1.55 to 1.72 long by 1.15 to 1.25 broad, averaging 1.67 by 1.12 .

* Ornithologist and Oologist XII, pp. 159-160.

210. *Rallus obsoletus* RIDGW. [570.]**California Clapper Rail.**

Hab. Salt marshes of the Pacific coast from Lower California to Oregon.

Mr. Bryant regards this Rail as abundant, at all seasons of the year, on the salt marshes of Oakland, San Mateo, and other marshes that are partially covered by the highest tides, at which times the birds are remarkably tame. They swim well, and when wounded and closely pursued they dive and hold on to the marsh grass beneath the water to keep from rising. They commence breeding in April, selecting a high piece of marsh ground, usually on the bank of a slough.

The nest is composed wholly of dry marsh grass, loosely laid together. The bird deposits eight or nine eggs, of a light, creamy buff, spotted, often blotched, with reddish-brown and lavender markings, the latter color appearing as if beneath the shell. Of some thirty-six specimens examined, all have markings more numerous at the larger end; on some the lavender predominates. A set of eight, taken at San Mateo, April 24th, contained small embryos. They measure respectively 1.70 x 1.25, 1.73 x 1.23, 1.75 x 1.23, 1.77 x 1.23, 1.68 x 1.23, 1.70 x 1.22, 1.63 x 1.26, 1.69 x 1.24. The average size of thirteen eggs is 1.71 x 1.24.*

In the marshes of San Francisco Bay Mr. Emerson took eggs of this Rail in April, May and June, one set containing seven eggs.

211. *Rallus longirostris crepitans* (GMEL.) [571.]**Clapper Rail.**

Hab. Salt marshes of the Atlantic coast of the United States, from New Jersey southward; resident from the Potomac southward. Coast of Louisiana.

The Clapper Rail, or Salt-water Marsh Hen, is an abundant bird in the salt marshes of the Atlantic coast from New Jersey southward. Breeds in profusion and is the most abundant aquatic bird in the marshes from the Carolinas to Florida. It has lately been found breeding on the coast of Louisiana, in the Gulf of Mexico, Dr. A. K. Fisher having taken an old bird and two young at Grand Isle, in 1886. Mr. S. C. Shick, of Sea Isle City, states that the Clapper Rail arrives on the southeastern coast of New Jersey about the last of April; their presence is made known by harsh cries at early dawn and at sunset. Nest building is commenced in the latter part of May, and by the first of June the full complement of eggs is laid, ranging from six to nine or ten in number, thirteen being the largest set he ever obtained from any nest. Further south this bird is known to lay as many as fifteen, this number, however, being uncommon. On Cobb's Island, Va., the Clapper Rail breeds in great numbers, carefully concealing the nest in high grass;

*Bull. Nutt. Club, V, p 124.

the full complement of eggs is laid by the first of May. Their color is pale buffy-yellow, dotted and spotted with reddish-brown and pale lilac, with an average size of 1.72 x 1.20, but there is a great variation in this respect in a large series.

212. *Rallus virginianus* LINN. [572.]

Virginia Rail.

Hab. North America, from the British Provinces south to Guatemala and Cuba.

The Virginia Rail is an exact miniature of *R. elegans*, the coloration being exactly the same; the legs, iris and bill brown — the latter reddish — orange at the base of the lower mandible. In summer it is distributed from Canada to Florida; frequenting marshes and boggy swamps. The nest is built in a tuft of reeds or grasses close to the water; it is compact and slightly hollowed. The eggs are cream or buff, sparsely spotted with reddish-brown and obscure lilac; they are like those of the King or Clapper Rail, but of course, like the bird, much smaller; sizes range from 1.20 to 1.28 long by .90 to .93 broad. The number in a set varies from six to twelve. The Virginia Rail and the Sora have habits that are very similar; when on the wing they will fly in a straight line for a short distance with dangling legs, and suddenly drop into the grass. The Virginia Rail is almost exclusively a fresh water bird.

[213.] *Porzana porzana* (LINN.) [573.]

Spotted Crake.

Hab. Europe; occasional occurrence in Greenland.

The European Spotted Crake is found in most parts of Europe, Asia and Africa. Common in Italy, Sicily and in the Southern portions of Russia. Breeds abundantly in Southern France and in various parts of England. It frequents the banks of streams, ponds and lakes, and the thick grasses and vegetation of marshy grounds. The nest is usually built in these places, being loosely woven of aquatic plants, and lined with finer material of the same; it is often placed near the water's edge, and so arranged as to be capable of floating on the water. Spotted Rail, Spotted Water-hen, Spotted Gallinule, Water-crake, and Water Rail are names common to it in England. The eggs of this bird are from seven to twelve in number; pale buff or cream color, or of a yellowish-gray, spotted and speckled with dark reddish-brown and tints of lavender. Six eggs, collected in Southern France, in my cabinet measure 1.34 x .96, 1.36 x .94, 1.32 x .93, 1.34 x .94, 1.33 x .96 and 1.32 x .95.

214. *Porzana carolina* (LINN.) [574.]

Sora.

Hab. Temperate North America. South to the West Indies and Northern South America.

The little slate-colored Carolina Rail breeds from the Middle States

northward. In the reedy swamps of the Atlantic States great numbers of this Rail are killed every year. It is a highly esteemed game bird, and is usually abundant during the migrations. More common in the Eastern Province of the United States, breeding chiefly northward. Mr. Shields states that the Sora Rail is quite common in the swamps about Los Angeles, Cal., where he obtained six sets of its eggs in the season of 1886; the largest set contained fourteen and smallest seven eggs. In Ohio the Carolina Crake, Common Rail, Sora or Ortolan, as it is variously called, is a common summer resident, breeding in the extensive swamps and wet meadows throughout the State. The Carolina Rails are equally abundant on both salt and fresh water marshes, but the latter places are preferable to them as breeding grounds. The nest is a rude affair made of grass and weeds, placed on the ground in a tussock of grass in a boggy tract of land, where there is a growth of briers, etc.

The eggs of Sora are ovoidal in shape, tapering gradually to the smaller end but not sharply pointed. They have a ground color of dark cream or drab, darker than those of the Virginia Rail; the spots are reddish-brown with purple shell spots scattered over the surface, but more numerous at the large end. Twenty eggs in my collection have an average size of 1.26 x .90.

215. *Porzana noveboracensis* (GMEL.) [575.]

Yellow Rail.

Hab. Eastern North America from Nova Scotia and Hudson Bay west to Utah and Nevada.

The small Yellow Crake appears to be quite rare everywhere in Eastern North America or wherever found. It is known to breed in Northern Illinois, where its eggs have been taken. Dr. Howard Jones has frequently taken it in the vicinity of Circleville, Ohio, and considers it nearly as common as other species, and believes it breeds there, which is probably the case throughout the State. The Little Yellow Rail has the same general traits common to others of this family, frequenting marshy places, skulking and hiding in the wet grass to elude observation. The eggs are said to be about six in number, rich buffy-brown, marked at the larger end with a cluster of reddish-brown dots; sizes range from .80 to .85 broad by 1.05 to 1.12 long.

216. *Porzana jamaicensis* (GMEL.) [576.]

Black Rail.

Hab. Temperate North America, north to Massachusetts, Northern Illinois and Oregon; south to West Indies and South America.

Smallest of our North American Rails; not often found in the United States and one of the rarest of our birds. Its small size and

secretive habits are doubtless one of the causes of its apparent scarcity. A nest containing ten eggs was found near Saybrook, Conn. Ten fresh eggs were taken from a nest in Illinois, June 19, 1875, near Calumet River. The nest was placed in a deep, cup-shaped depression; in shape and situation resembled that of the Meadow Lark, but the Rail's nest was much deeper in proportion to the diameter. It was elaborately made of grass-stems and blades. The eggs were clear white, thinly sprinkled with reddish-brown dots, more numerous about the large end.*

Dr. Coues says: "Eggs from New Jersey are altogether different from those of the Sora, or Yellow Crake, being creamy-white, sprinkled all over with fine dots of rich, bright reddish-brown, and with a few spots of some little size at the great end; most like the more finely speckled examples of the egg of the large *Ralli*; dimensions, 1.05 x .80."

[217.] *Crex crex* (LINN.) [577.]

Corn Crake.

Hab. Europe and Northern Asia; casual visitor in Greenland, Bermudas and New Jersey.

The Land Rail, Corn Crake, or Corn Creak, is an abundant species over the entire continent of Europe. In England and Scotland it is a familiar bird, where it breeds in abundance. Very common in the Orkney and Shetland Islands. It frequents the long grass of wet meadows, near rivers and marshes, and in fields of grain. Its presence is indicated by the creaking note from which it takes its name. The nest is placed on the ground, generally in a field of grain, grass or clover; it is made of dry plants and grasses. In England this bird nests about the first or middle part of June. The eggs are from seven to ten in number; these, when fresh, are of a pale reddish-white; when blown, the ground color is light buff, with a reddish cast; they are spotted and sprinkled with pale reddish-brown.

218. *Ionornis martinica* (LINN.) [578.]

Purple Gallinule.

Hab. Nearly whole of tropical and warm temperate America. Apparently absent from the Pacific coast.

This beautiful Gallinule inhabits the South Atlantic and Gulf States, and strays occasionally northward as far as Maine, New York, Ohio, Wisconsin and other Northern States. The bird is resident in the South. From its bright purplish-blue colors it may quite readily be distinguished from the Florida Gallinule, even at a long distance. In Florida it breeds in the latter part of May.

Mr. Rachford writes that in Texas the Purple Gallinule nests in

* E. W. Nelson: Bull. Nutt. Orn. Club. Vol. I, p. 43.

the tall grass along the edges of water courses, bending the grass down and weaving it together. Besides its true nest, the bird makes several "shams," often as many as five or six. The nesting season is in May or June. Mr. Arthur T. Wayne informs me that in South Carolina the nest is invariably built in rushes over water. The usual number of eggs laid is eight or nine, but frequently more are deposited. The eggs are cream color, finely and rather sparsely dotted with chestnut-brown and umber; rather elliptical, and measure from 1.70 to 1.75 long by 1.15 to 1.20 broad.

219. *Gallinula galeata* (Licht.) [579.]

Florida Gallinule.

Hab. Temperate and tropical America; north to British Provinces.

Known as the Common Gallinule and Red-billed Mud Hen. Its center of abundance is in the South Atlantic and Gulf States, and it breeds as far north as Massachusetts. Not an uncommon summer resident in Ohio, breeding in the extensive swamps and marshes throughout the State. The nest is usually fastened in the sedges and marsh grass above shallow water, or among the flags. The foundation is often made by breaking down the flags, so as to form a little platform, which will, to a certain degree, rise and fall with the water. On this the nest proper is built of the last year's flags. In Florida, where the bird is remarkably abundant, the nest is placed in the drier portions of the marshes, among thick reeds and rushes. A set of eight eggs, collected by Dr. Jones near Circleville, Ohio, measure 1.70 x 1.20, 1.81 x 1.18, 1.81 x 1.17, 1.78 x 1.23, 1.84 x 1.25, 1.84 x 1.22, 1.77 x 1.24, and 1.83 x 1.16. The number of eggs laid ranges from seven to thirteen. They are creamy or brownish-buff, rather thickly spotted and blotched with brown and umber; some of the spots are as small as pin heads; sizes vary from 1.75 to 2.00 long by 1.20 to 1.30 broad; shaped like an average hen's egg.

[220.] *Fulica atra* LINN.

European Coot.

Hab. Europe, Asia and North Africa.

This bird closely resembles our American Coot, but its average size is slightly larger. It is a common resident south of middle England, and in the summer is found breeding in the numerous lochs throughout Scotland. Its habits in all respects are like those of the American bird. The nest is built in close proximity to water, on islands, borders of lakes, ponds and rivers. It is generally placed among and attached to flags, reeds or rushes. It is large and roughly made of plants and vegetable matter. The eggs are from six or seven

to ten or even fourteen in number, pale, dull buff, or stone-color, spotted with rust-colored, brownish-black and purplish-gray. The average size of a large series is 2.15 x 1.50.

221. *Fulica americana* GMEL. [580.]

American Coot.

Hab. Whole of North America; south to Mexico, Central and South America and West Indies; north to Alaska, occasionally to Greenland.

Well known as the Mud Hen, and in some sections the Crow Duck. This is the water fowl that the young sportsman persists in shooting as a game bird, but at a riper age he does not "hanker" after its flesh. It is easily known by its slate colored plumage, white or flesh-colored bill, marked with reddish-black near the end and at the base of frontal plate, greenish legs and carmine iris. The Coot is a good swimmer and diver, having lobate feet like the phalaropes and grebes. It can also move swiftly through tangled grass and aquatic plants. On almost any large or small body of water sufficiently secluded and whose margins are overgrown with reeds and rushes, or on sluggish streams, swamps, pools or reedy sloughs, there you will find the Coot during the breeding season. The nest is made of dead reeds and grasses, placed on the ground, just out of the water or on floating vegetation; the flags on which it rests being broken down, rises and falls with the water. Sometimes immense numbers of these birds breed together. Mr. Shields records taking five hundred Coot eggs, together with large numbers of those of ducks and grebes in Southern California.* The eggs are clay or creamy-white, uniformly and finely dotted all over with specks of dark brown and blackish; six to twelve and fifteen eggs are often found in a single nest; in shape and general style of color and markings resemble those of the Florida Gallinule; sizes range from 1.77 to 2.00 long by 1.40 to 1.45 broad.

222. *Crymophilus fulicarius* (LINN.) [563.]

Red Phalarope.

Hab. Northern portion of Northern Hemisphere, breeding in Arctic regions, migrating south in winter; in North America south to Middle United States, Ohio Valley and Lower California.

The Coot-footed *Tringa*, Red or Gray Phalarope, as it is differently called, is distributed in summer throughout the Arctic regions, wandering far south in winter. Breeds in various portions of Norway, Sweden, Finland and up into Lapland; in Siberia, Spitzbergen, Iceland, Greenland and the Arctic coast of North America. The Phalaropes are curious birds, partaking of the nature of a wader and a swimmer. The three species of this family resemble Sandpipers, but are at once distinguished

*Egging in a California Swamp. Young Oologist, Vol. I., p. 90.

by the lobate feet like those of the Coots and Grebes. The body is depressed and the under-plumage thick like that of a duck. They ride the waves lightly along the coast, and when on the margin of a stream or pool often surprise their associates, the Sandpipers, by swimming out into deep water. The Red Phalarope appears to be more exclusively maritime than other species of the family. The nest is a slight hollow in the ground, sparsely lined with moss and grass. Mr. Capen quotes a letter from Mr. Boardman in which he says: "Twice I have found the Red Phalarope breeding in Maine." The eggs, Mr. Capen says, are laid the first part of June.* They are greenish or yellowish-ash, blotched and spotted with brown of various shades. The eggs of this species cannot, with certainty, be distinguished from those of the following species; in fact, the range of coloration is so varied that they are difficult to describe satisfactorily in a brief manner. They are three or four in number, averaging larger than those of the Northern Phalarope; from 1.15 to 1.30 long by .90 to .95 broad.

223. *Phalaropus lobatus* (LINN.) [564.]

Northern Phalarope.

Hab. North parts of North Hemisphere, breeding in Arctic regions; south in winter to tropical regions.

The general habits, movements and distribution of the Northern Phalarope are nearly identical with those of the Red Phalarope; common to both continents, and breeding in the Arctic regions of Asia, Europe and America. The nesting habits are substantially the same and the eggs are laid in June. The bird is also known as the Red-necked Phalarope. The eggs are greenish or yellowish-ash, thickly blotched with varying shades of brown; three or four; sizes range from 1.10 to 1.30 long by .75 to .82 broad, averaging 1.20 by .80; like the last, there is a great variation in size, shape and color.

224. *Phalaropus tricolor* (VIEILL.) [565.]

Wilson's Phalarope.

Hab. Chiefly interior of temperate North America; south in winter to Brazil and Patagonia.

Exclusively an American bird, more common in the interior than along the sea coast. Little information regarding its habits was obtained by the older ornithologists. Known now to breed in Northern Illinois, Iowa, Wisconsin, Minnesota, Dakota, Utah and Oregon. May be found nesting in suitable places from these regions northward to the Red River of the North and the Saskatchewan country. It is recorded as a summer resident in Northern Indiana and very likely breeds in Northwestern Ohio. Mr. N. S. Goss states that he is quite confident the bird occasionally breeds in Western Kansas.†

*Oology of New England.

† A Revised Catalogue of the Birds of Kansas, with descriptive notes of the nests and eggs of the

The nesting habits of Wilson's Phalarope have been carefully observed by Mr. E. W. Nelson in Northern Illinois, and his observations form a very complete and interesting biography of the species.† Mr. Nelson states that it is the most common species in Northern Illinois, frequenting grassy marshes and low prairies, and is not exceeded in numbers even by the ever-present Spotted Sandpiper. "The nesting-site is usually in some thin tuft of grass on a level spot, but often in an open place concealed by only a few straggling blades of small *carices*. The male scratches a shallow depression in the soft earth, which is usually lined with a thin layer of fragments of old grass blades, upon which the eggs, numbering from three to four, are deposited about the last of May or first of June. Owing to the low situations in which the nests are placed, the first set of eggs is often destroyed by a heavy fall of rain, causing the water to rise so as to submerge the nest. In this case, the second set, numbering two or three, is often deposited in a depression scratched in the ground, as at first, but with no sign of any lining. Accidents of this kind cause the second set of eggs to be sometimes deposited as late as the last of June." The male alone undertakes the duties of incubation. The eggs are ashy-yellow, usually coarsely spotted and blotched with brown of varying shades, with numerous specks and scratches; three or four in number; sizes vary from 1.20 to 1.35 in length by 1.90 in breadth, making them elongate pyriform in shape.

225. *Recurvirostra americana* GM. [566.]

American Avocet.

Hab. Temperate portions of North America, from the Saskatchewan country and Great Slave Lake southward; in winter to Guatemala and the West Indies.

A bird of striking appearance, of odd coloration, having extraordinarily long legs; feet webbed like those of a swimming bird; body flattened underneath, and duck-like plumage to resist the water. The most striking characteristic of the bird, however, is its long, decidedly upturned bill, and from its blue legs it receives the name of Blue-stocking.

It is very abundant in the West, on the plains of Dakota, Montana, Wyoming, Colorado and Utah. In these regions it breeds in June, nesting in the tall grass in marshy or wet places.

The eggs vary from a dark olive to buff, pretty uniformly and profusely spotted with chocolate-brown of various shades; they vary in size, shape and markings like the birds themselves; three or four in number; sizes from 1.80 to 2.10 in length by 1.25 to 1.45 in breadth.

birds known to breed in the State. By N. S. Goss. Published under the direction of the Executive Council, May, 1886. Topeka: T. D. Thacher, State Printer. P. 14.

† Bull. Nutt. Club. Vol. II, pp. 38-43.

226. *Himantopus mexicanus* (MULL.) [567.]**Black-necked Stilt.**

Hab. Temperate North America from Northern United States southward to West Indies, Brazil, and Peru.

This exceedingly long-legged bird is distributed throughout the United States, and like the Avocet, is rare in the eastern portions. It is abundant in the West, but its range is rather more southerly than that of the Avocet. In Ohio it is a rare summer visitor. Perhaps breeds. The nest of the Stilt is often only a slight depression in the ground, lined with dry grasses, situated along some stream or ditch, or near water; some collectors have found the nest at the water's edge, or on a heaped mass of vegetation just above the surface of shallow water. A. M. Shields says that the Stilt arrives in the vicinity of Los Angeles, California, about May 1st, and the eggs may be found fresh until the middle of June. He states that the birds usually congregate in large flocks in some suitable locality, and build their nests close together, a score or more are often found within a few yards of each other; the nests being composed of small sticks and roots, closely laid together and placed among the grass on the margin of a lake or river.*

This record refers to the abundance of the Stilt in the season of 1883, and those previous; but I am informed by Mr. Shields that the bird is not so abundant as formerly, only a few pair breeding in the neighborhood of Los Angeles each year.

The eggs are of a greenish-yellow, thickly spotted, blotched and lined irregularly with brownish-black of varying shades; pyriform in shape; three or four in number; sizes from 1.60 to 1.85 long by 1.15 to 1.25 broad.

[227.] *Scolopax rusticola* LINN. [524.]**European Woodcock.**

Hab. Old World; occasional in Eastern North America.

The European Woodcock is widely distributed over the northern parts of the Old World. It is of larger size than the American bird. Many instances are on record of its breeding in various parts of Great Britain, but the greater portion of the birds are considered migratory. Breeds abundantly in Norway, Sweden, Lapland and in Northern Russia. Nocturnal in its habits, reposing in the daytime in grassy bottoms in woods, and at twilight it regains activity, resorting to open glades and marshy bottoms, where it feeds. These tracts are known as "cock-shoots," or "cock-roads." The food of the birds is the common earth-worm, which they procure by boring, or thrusting their bills into the soft mud. The nest consists of a few leaves loosely laid together, and without lining. The eggs are usually four in num-

* Young Oologist, Vol. I, p. 41.

ber; of a pale yellowish-white, blotched and spotted with various shades, ashy-gray and reddish or yellowish-brown; most numerous about the larger end. Four eggs measure 1.75×1.27 , 1.74×1.27 , 1.73×1.23 , 1.77×1.28 .

228. *Philohela minor* (Gmel.) [525.]

American Woodcock.

Hab. Eastern Province of North America, north to British Province, west to Dakota, Nebraska, Kansas, etc. Breeds throughout its range.

This noted game bird frequents the bogs, swampy fields, and wet woodlands of Eastern United States and Canada, and breeds throughout its range. The nests are mere depressions in some dry spot in swampy land, generally under the cover of a clump of briars or other wild shrubbery, often in more open places. The eggs of the Woodcock are laid early in April, and in some localities not until some time in May. In Ohio, I have found eggs as early as April 3, and young have been seen as early as April 9, near Cleveland, Ohio. There are records of eggs of this species averaging in size 1.80×1.25 , but I have never seen any so large, although they exhibit considerable variations. These sizes doubtless refer to the eggs of the European species. The Woodcock is often called "Bog Sucker," from its habit of boring in the mud for worms and animalculæ, of which its food consists. The eggs are creamy or buff, irregularly and thickly spotted with pale, reddish-brown of varying shades; pyriform, but more rotund than those of most of the small waders, and some are quite broad, varying from 1.40 to 1.55 long by 1.15 to 1.20 broad. The usual number of eggs is four. Four selected specimens measure 1.58×1.21 , 1.53×1.14 , 1.57×1.17 , and 1.53×1.20 .

[229.] *Gallinago gallinago* (Linn.) [526.]

European Snipe.

Hab. Northern portions of the Old World; frequent occurrence in Greenland. Accidental in the Bermudas.

A species of general distribution over Europe. In the breeding season it is found in the more northern portions and in the winter months it inhabits the southern regions. A common game bird on the British Islands, breeding in greater or less abundance in all parts of England and Scotland; especially to the north on the Orkney and Shetland Islands. In summer it is found on the Faroes, Iceland, and in Greenland. Breeds in the northern portions of Russia and Siberia and as far south as France, Germany, Holland and Hungary. The nests of this Snipe are placed on the ground in tall grass by the side of some pond or shallow water, or amidst the long heather which grows upon the hill-side. Nests have been found at an elevation of a thousand feet above the plain.

The full complement of eggs is four; they have a ground-color varying from yellowish-white to greenish-yellow. The markings are of several shades of reddish or chestnut-brown, scattered chiefly about the larger end. The eggs are pyriform in shape and quite pointed at the smaller end. Four eggs collected near Lancaster, England, measure 1.54 x 1.14, 1.53 x 1.08, 1.59 x 1.15, 1.51 x 1.10.

230. *Gallinago delicata* (ORD.) [526a.]

Wilson's Snipe.

Hab. Whole of North and Middle America, breeding from Northern United States northward; south in winter to West Indies and Northern South America.

The American Snipe is a favorite game bird, well known by the name of Jack Snipe. Throughout the greater part of the United States it occurs only during the migrations. Breeds from about latitude 45° northward to Hudson Bay region on the east and as far west and north as Sitka, Alaska and Fort Anderson.

The birds frequent low open places, such as wet meadows and marshes, and muddy banks of streams.

They are found in small companies of from three to twelve, technically called "wisps." Solitary birds are not unfrequently met with.

No other game birds are more erratic and eccentric than these. They are extremely fickle in the choice of their feeding ground; one day they may swarm in a certain locality, and the next none are to be discovered. Their flight is strong, but, especially at the beginning, erratic. They almost invariably fly against the wind, and lie closest on still, clear days. Occasionally they alight on trees or fences. Their note, uttered as they rise, resembles the word "escape."

The nest is only a slight depression in the grass or moss of a bog. The eggs vary from a grayish-olive to greenish-brown and yellowish-ash, spotted and blotched with reddish-brown, umber, and sometimes with lines of black; the markings are bold and numerous, particularly on the larger end, usually also sharp scratchy lines of blackish and shell-spots, hardly noticeable. The shape of the eggs is pyriform; three or four in number; sizes range from 1.50 to 1.60 long by 1.05 to 1.10 broad.

231. *Macrorhamphus griseus* (GMEL.) [527.]

Dowitcher.

Hab. Eastern North America. Breeding far northward.

Known by several names, such as Red-breasted Snipe, Gray Snipe, Brown-back, and Gray-back; these are also applied to the Long-billed Dowitcher. This bird, which greatly resembles the Common Snipe in structure and general appearance, differs from it in habits. It is described as migrating in flocks, often of large size, and

as being so unsuspecting as to allow a near approach. Breeds in high Arctic regions, in various places in Alaska, and is spoken of by Dr. Richardson as having an extensive breeding range throughout the Fur Country, from the borders of Lake Superior to the Arctic Ocean. In the Arctic Regions nests have been taken between the middle of June and the first part of July. They were placed on the marshy borders of small lakes and ponds, and were made of a few dry leaves and grasses. The eggs were usually four in number. These cannot, with certainty, be distinguished from those of Wilson's Snipe. They are generally long, narrow, and pointed in shape; sizes from 1.62 to 1.75 long by 1.10 to 1.15 broad.

232. *Macrorhamphus scolopaceus* (SAY.) [527a.]

Long-billed Dowitcher.

Hab. Mississippi Valley and Western North America from Mexico to Alaska.

This bird, whose size is larger and bill longer than that of the last, inhabits North America at large, but is supposed to be rare on the Atlantic coast. It is called Greater Long-beak, Greater Gray-beak and Red-bellied Snipe. Breeds in the far north; is said to be common about the mouth of the Yukon and islands along the coast of Alaska. In the West the birds gather in dense flocks, and they being of a gentle and confiding disposition, and so closely huddled together, that great slaughter may be effected by the gunner if so disposed. Eggs larger and nesting same as the last.

233. *Micropalama himantopus* (BONAP.) [528.]

Stilt Sandpiper.

Hab. Eastern Province of North America, breeding north of the United States; migrating south in winter to tropical regions.

The Long-legged Sandpiper, of slender form and very long legs, breeds north of the United States, and visits Southern localities in winter; Bermudas, West Indies, Central and South America.

Dr. Brewer states that Mr. MacFarlane found this species breeding at Rendezvous Lake, in the Arctic regions, June 27. The nests were similar to all others of this family, a mere depression in the ground, with a lining of a few leaves and grasses. The eggs are three or four in number, pyriform in shape, with a ground color of light drab or grayish-white, with bold spots and markings of chestnut-brown and purplish-gray, more numerous about the larger end; in some quite confluent. Sizes vary from 1.43 to 1.46 long by 1.04 to 1.10 broad.

234. *Tringa canutus* LINN. [529.]

Knot.

Hab. Nearly cosmopolitan; breeding in high northern latitudes. Migrates far southward.

This handsome species, so remarkable for its seasonable differences

of plumage, is the largest of the North American Sandpipers. It inhabits most parts of the globe; in America chiefly coastwise, and breeds in high latitudes. It is migratory, and is also found in the interior about large bodies of water and rivers. Red-breasted and Ash-colored Sandpiper and Gray-back are other names for it.

An authentic egg of the Knot has for many years been the object of special and diligent search by eminent naturalists and explorers traveling in Arctic regions where this bird is known to live during the season of reproduction.

Lieut. A. W. Greely, U. S. A., Commander of the late Expedition to Lady Franklin Sound, succeeded in obtaining the long-sought-for egg of the Knot. C. H. Merriam publishes the first account of it, written by Lieut. Greely, as follows: "The specimen of bird and egg were obtained in the vicinity of Fort Conger, latitude of $81^{\circ} 44'$ N. The egg was 1.10 inch [28 mm.] in the longer axis, and 1 inch [25.40 mm.] in the shorter. Color, light pea green, closely spotted with brown in small specks about the size of a pin-head."*

235. *Tringa maritima* BRUNN. [530.]

Purple Sandpiper.

Hab. Northern portions of Northern Hemisphere; in North America, chiefly the northeastern portions, migrating south in winter to Eastern and Middle States. Mississippi Valley.

The purple Sandpiper is found in the high Arctic regions of America and Europe. Said to be a resident of the Aleutian Islands. Breeds in the Faroe Islands, Iceland, and in Greenland, where some remain in the fiords of the southern portion all winter.

Dr. Richardson states that it breeds abundantly on Melville Peninsula and on the shores of Hudson Bay. The nest is a mere depression in the soil with a scant lining of dry grass.

The eggs are clay color, shaded with olivaceous, with large and distinct markings of rich umber-brown of different depths of intensity all over the shell, but most numerous as well as largest on the greater half; pyriform; the eggs are usually four in number, and measure about 1.40 by 1.00.

236. *Tringa couesi* (RIDGW.) [531.]

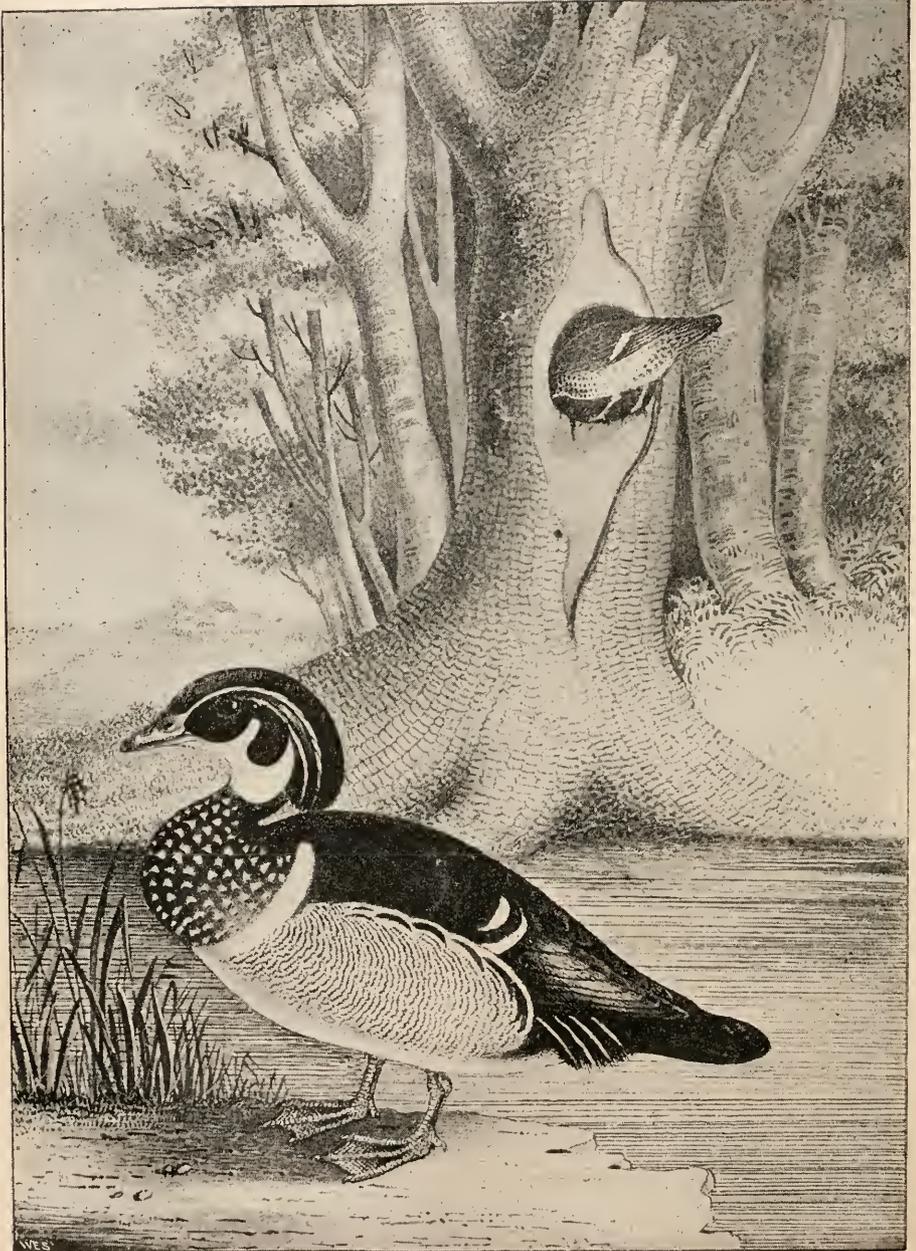
Aleutian Sandpiper.

Hab. Coasts and islands of Bering Sea, north to St. Michael's.

Closely allied to the last species, and the birds are hardly distinguishable in their respective winter plumages. It is common in the Aleutian and other islands, and also along the coasts of Bering Sea as far west as the Commander Islands. Dr. Stejneger records it as a resident of the latter group, found there during both summer and winter.

*Auk. Vol. 11., p. 313.





WOOD DUCKS AND NESTING PLACE.

(*Aix sponsa.*)

The first eggs are laid about the middle of May. These are described as pale olive-buff, varying to light brownish-buff, spotted and blotched with vandyke-brown or deep umber; size 1.46 x 1.00.

237. *Tringa ptilocnemis* COUES. [532.]

Prybilof Sandpiper.

Hab. Prybilof Islands, Bering Sea.

The Black-breasted Sandpiper, as it is called, is confined to the Prybilof group and several other islands of Bering Sea; but does not visit the Commander Islands. It is said to be the only wader that breeds on the Prybilof Islands. In May it nests on the dry uplands and mossy hummocks, placing its nest in bunches of moss, in which four pyriform eggs are laid.

The eggs are described as light brownish-buff, heavily spotted with rich chestnut-brown, clouded with purplish-gray. Average size 1.50 x 1.07.

239. *Tringa maculata* VIEILL. [534.]

Pectoral Sandpiper.

Hab. North, Central and South America; breeding in the Arctic regions. Of frequent occurrence in Europe.

During the migrations the Pectoral Sandpiper is very abundant, both on the sea coast and in the interior. It frequents the borders of ponds, the shores of lakes and rivers, and is found commonly in the vicinity of wet cornfields and meadows. It is only of recent date that we have obtained any positive information regarding this bird's breeding places. Mr. E. W. Nelson found it to be extremely common at the mouth of the Yukon River, where the low grassy flats afford it a much frequented breeding ground. Arriving on the shores of Bering Sea, near St. Michael's, from the 15th to the 25th of May, the birds linger about a short time; they then pair and seek nesting places, which are usually in tufts of grass.

The eggs are of a pale grayish-buff, varying to pale olive-green, boldly blotched and spotted with rich vandyke-brown and purplish gray; average size, 1.44 x 1.02.

240. *Tringa fuscicollis* VIEILL. [536.]

White-rumped Sandpiper.

Hab. Eastern North America; breeds far North. In winter migrating through the United States, the West Indies, Central and South America and Falkland Islands. Occasional in Europe.

Bonaparte's Sandpiper during the breeding season is found in the Arctic regions. It is a species of wide distribution in the migrations, wandering into tropical regions.

The bird is said to breed in suitable places on the shores of Cumberland Sound. Dr. Brewer states that Mr. MacFarlane met its nests and eggs on or near the Arctic coast; one taken July 3 contained four eggs

with large embryos; another found the day following contained three eggs. A third, obtained June 29 on the Barren Lands, was a mere depression in the ground, lined with a few decayed leaves and contained four eggs with very large embryos. A fourth found on the banks of a small river, of similar construction, held four eggs.

The eggs are pyriform in shape, of light olive or olive-brown, spotted with bold and sometimes rather fine markings of deep chestnut-brown, almost into blackness, chiefly about the larger end in confluent groups. Average size, 1.37 x .94.

241. *Tringa bairdii* (COUES.) [537.]
Baird's Sandpiper.

Hab. North America, chiefly the interior. Rare on the Atlantic Coast; wintering in Mexico, Central and South America.

Baird's Sandpiper is distributed throughout North America generally, but is said not yet to have been observed west of the Rocky Mountains. It is found chiefly in the interior. Known to breed in the Arctic regions; winters south of United States.

This bird was entirely unknown to ornithologists until within the last thirty-five years; when discovered and for sometime after was confounded with other species. Dr. Coues first gave it rank and name in 1861. It breeds in the Arctic regions—on the Barren Lands; nests in the latter part of June, usually within the vicinity of lakes and small ponds. The nest is made of a few dry leaves and grasses in a small depression, shaded by a tuft of grass. The eggs are usually four in number; buff or clay-colored, spotted and blotched with varying shades of chestnut-brown; in most instances the markings are fine and innumerable, of indefinite size, irregular in shape and thickness at the greater end, where they are occasionally massed in blotches; size about 1.30 x .90

242. *Tringa minutilla* VIEILL. [538.]
Least Sandpiper.

Hab. Whole of North America; breeding north of the United States.

The smallest of the Sandpipers, measuring five and a half or six inches in length. It has the same habits as characterize its Semipalmated cousins, frequenting the same localities, and flocks of birds are often composed of both species. When this is the case the Semipalmated Sandpipers even if largely in the minority, take the lead, as their somewhat larger size, stronger flight and louder note fit them for so doing.

When not in company with other species none of our shore birds are more confiding and unsuspecting than these, large flocks continuing their search for food almost under the feet of the observer.

The Least Sandpiper breeds from Canada, Newfoundland and Labrador northward into the Arctic regions, and in Alaska. June 5, 1875, one was found building its nest in the vicinity of Chicago, Ill. Nests in the Arctic regions are usually mere depressions, lined with leaves and grasses, on the ground, in the vicinity of lakes or ponds. The eggs are usually four in number, and may be found between the latter part of May and June. The eggs are pyriform in shape, the ground color is light drab, thickly sprinkled with reddish-brown spots and purplish-gray. The average size is 1.15 x .85.

[243.] *Tringa alpina* LINN. [539.]

Dunlin.

Hab. Europe, accidental in North America.

The Purre or Dunlin has a wide distribution in the northern parts of the Old World. By far the most abundant of the British Sandpipers, being equally distributed in the marshes, on the borders of inland lakes, and along all the seashores from the most northern island to the southern coast of England. The birds usually feed in great numbers after the retiring tide, or on the oozy flats of soft sand or mud, which cover the low-lying shores of the islands. In the spring they separate into pairs, retiring to the marshes and shores of inland lakes and muirs to breed. Their nests are made at the foot of a small bush or tuft of grass, often so concealed as to be very difficult to find. A few bits of grass or moss form the lining of the slight cavity, in which usually four eggs are deposited. They vary in ground color from greenish-white, yellow, gray and often inclining to light blue; they are spotted and blotched irregularly with reddish-brown; the spots becoming more numerous toward the larger end. Four specimens measure 1.54 x 1.14, 1.53 x 1.08, 1.59 x 1.15, 1.51 x 1.10.

243a. *Tringa alpina pacifica* (COUES.) [539a.]

Red-backed Sandpiper.

Hab. North America in general, breeding in high latitudes. Eastern Asia.

This is the American Dunlin, Black-bellied Sandpiper, or Ox bird; it is larger and brighter colored than *T. alpina*. Distributed throughout the whole of North America, and breeds in the Arctic regions, migrating in winter in the United States, especially coastwise.

Breeds in various places on the Alaskan coast—at the mouth of the Yukon and in the salt marshes of Norton Sound. It has also been found breeding on the Arctic coast of North America, on Melville Peninsula, the shores of Davis Strait and in Southern Greenland.

The nest is built in the vicinity of lakes and ponds or in marshes; it is a slight hollow with merely a few dry grasses and leaves scraped

into it. The eggs, four in number, of a dull brownish-buff or clay color, spotted, blotched and stained with chestnut, principally about the larger end; their average size is 1.43 x 1.01.

244. *Tringa ferruginea* BRUNN. [540.]

Curlew Sandpiper.

Hab. Old World in general, occasional in Eastern North America and in Alaska.

A bird with a bill resembling that of the Curlews—long, slender, compressed and considerably decurved. The length of the bird is about eight and a half inches. It is said to be one of the rarest of the Sandpipers which visit North America. A common species in Siberia, where it breeds. Said to breed in Holland, Denmark and northward into Norway, Sweden, and in Finland. In England it is nowhere abundant and does not assemble in large flocks like the Dunlin or Purre. A few pairs are believed to breed in Great Britain. Known to breed in various portions of Greenland—nesting near the margins of lakes and rivers where the eggs are deposited in a slight hollow of the ground, lined with bits of grass. The eggs are four in number, pyriform in shape, pale grayish or greenish-buff, spotted and blotched with chestnut-brown. They are hardly distinguishable from those of the Pectoral or Red-backed Sandpiper's eggs; size 1.50 x 1.04.

246. *Ereunetes pusillus* (LINN.) [541.]

Semipalmated Sandpiper.

Hab. Northern and Eastern North America; west during the migrations to Rocky Mountains.

This little "Peep" is found everywhere in North America. In the summer it is distributed from Labrador and western shores of Hudson Bay northward, this being its breeding grounds. In spring and fall it is an abundant migrant in United States, thronging the beaches, the gravelly and sandy shores of streams and muddy banks of ponds, in company with the Spotted Sandpiper and others, with which it is usually confounded. It winters from the Carolinas southward. It has the same 'tweet, 'tweet as the Spotted Sandpiper, and utters it frequently, both on the shore and when flying. The Semipalmated Sandpiper arrives in the Saskatchewan River country about the middle of May, where it deposits its eggs early in June on a few pieces of withered grass in a slight hollow in the ground. These are three or four in number, and measure from 1.20 to 1.25 long by .82 to .85 broad. In a large series the usual variations in color are noticeable; the ground color varying from clay to grayish or greenish-drab or positive olive tint; usually boldly spotted and splashed with umber or chestnut-brown; thickest about the largest end; and again, in some, very fine dots are distributed over the entire surface.

247. *Ereunetes occidentalis* LAWR. [541a.]**Western Sandpiper.**

Hab. Western North America; occasionally eastward to the Atlantic coast; breeding far north. Migrating in winter to Central and South America.

Very much like the last species and there is essentially no difference in its general habits, nesting, eggs and other peculiarities.

Abundant in Alaska, breeding along the Yukon and the shores and islands of Norton Sound. Nests commonly on the Island of St. Michael's, depositing four eggs in nests which are mere hollows in the ground with a few blades of grass for lining. In June and July it is said to breed abundantly on the islands in the bays along the Arctic coast and also in the Barren Lands. The eggs are said to exhibit as great variation as those of *E. pusillus*.

248. *Calidris arenaria* (LINN.) [542.]**Sanderling.**

Hab. Nearly cosmopolitan, breeding in high Arctic regions.

The Sanderling, Ruddy "Plover" or "Beach Bird," is a species of wide distribution. During the breeding season it is distributed through the northern regions of Europe, Asia and North America. It inhabits, however, the entire continent of North America, wandering in its migrations through the United States, and in winter to the West Indies, Mexico, Central and South America. Its nests and eggs have been taken in Grinnell Land, and it is said to breed on islands about the coast of Greenland and on the shores and islands of Hudson Bay. Dr. Brewer states that Mr. MacFarlane, on June 29, discovered a nest with four eggs on the Barren Lands, near the Arctic coast. The eggs at this date were quite fresh. The nest is said to have been made of hay and decayed leaves. The eggs are ashy or greenish-brown, spotted and blotched with brown of different shades, pyriform in shape; two to four in number, and measure 1.41 by .91.

249. *Limosa fedoa* (LINN.) [543.]**Marbled Godwit.**

Hab. North America in general. Breeds in the Missouri and Upper Mississippi regions, thence to the Saskatchewan. Winters in the Southern States and southward.

The Great Marbled Godwit, or Marlin, inhabits the entire temperate North America, and it is a common bird during the migrations and in winter. It breeds chiefly in the Mississippi and Eastern Missouri regions, in Iowa, Minnesota and Dakota, thence to the Saskatchewan; known to breed in Northern Ohio, in Wisconsin, Iowa, Minnesota, Kansas and Nebraska. This is the largest of the "Bay birds," except the Long-billed Curlew, and can readily be distinguished, its bill being either straight or bent a little upward, and not decurved, like the Curlew's. It frequents muddy pools, sandy shores and

marshes, usually in flocks of greater or less extent. The bird is held in high esteem for the table, and they are eagerly hunted by the gunners when flocks of ten or a dozen birds appear on the marshes. The sportsmen call them "Dough" or "Doe" birds. The eggs are creamy-buff or light oliveaceous-drab spotted and blotched, rather sparsely, with yellowish and umber-brown of varying shades, long oval; size about 2.27 by 1.60; three or four in number, and they are deposited in a slight depression of the ground, lined with a few bits of grasses. The nests are placed in the vicinity of a pool or river, but not always near the water's edge.

250. *Limosa lapponica baueri* (NAUM.) [544,]

Pacific Godwit.

Hab. Coasts of Eastern Asia and across to Alaska, south in winter to New Zealand and Australia; casual to Lower California.

In the winter months the Pacific Godwit is found in many of the islands of the Pacific Ocean—the Polynesian Islands and Australia. At this season it is also found on the Eastern and Southern coasts of Asia and Japan. On the American coast it is a summer resident in Alaska, and south of this point it is recorded only from Lower California. An abundant species at the mouth of the Yukon and on the marshes of Pastolik, which are farther north. The nests are built in tussocks of grass, lined with the same material. The eggs are said to be only two in number, of light olive drab, spotted with irregularly formed spots of umber of varying shades, similar to those of the Marbled Godwit; size, 2.25 x 1.45.

251. *Limosa hæmastica* (LINN.) [545.]

Hudsonian Godwit.

Hab. Northern North America. Not recorded west of Rocky Mountains, only in Alaska.

The Hudsonian Godwit, though not common anywhere in the United States, is distributed throughout North America generally, but has not been observed west of the Rocky Mountains. It passes the winter South of the United States, and breeds in the most northern sections of the country. Breeds abundantly on the Barren Lands of the Arctic Ocean. In the Lower Anderson river region it nests in the first part of June, depositing its eggs in a slight depression of the ground lined with a few leaves and grasses. It associates with *L. fæda*, and has the same habits and characteristics. Called by the gunners the "Smaller Doe-bird." American Black-tailed Godwit and Ring-tailed Marlin are its other names.

The eggs of this species are heavily shaded olive-drab or "hair brown" almost as dark as a Loon's egg, sometimes lighter; obscurely

spotted and blotched with dark brown; usually four in number; size 2.20 x 1.42.

[252.] *Limosa limosa* (LINN.) [546.]

Black-tailed Godwit.

Hab. Northern portion of the Old World; accidental in Greenland.

At different seasons of the year the Black-tailed Godwit has been observed in nearly every portion of Europe, Asia and Africa. It is only an occasional visitant of Greenland which gives it a place in the fauna of North America. Considered migratory in Great Britain, and a few are known to breed there in the various marshes. In the summer months, however, this Godwit is found in various parts of Denmark and throughout Scandinavia, especially in Finland and up into Lapland.

Known to nest in France, and is supposed to breed sparingly in Switzerland. In Scotland and other portions of the British Islands this species deposits its eggs early in May. This bird is known as Common Godwit, Godwyn, Yarwhelp, or Yarwhit, Jadreka Snipe, and Shrieker. The nesting is like that of all the Waders so far as known — simply a hollow in wet meadows or in dry parts of swamps, midst grass or weeds. The eggs are usually four in number; they are of a deep grayish-olive or even a deep green, faintly spotted with olive-brown of different shades. Size 2.17 x 1.50.

[253.] *Totanus nebularius* (GUNN.) [547.]

Green-shank.

Hab. Old World; accidental in Florida.

Audubon took three specimens of the Green-shank on Sand Key, Florida, near Cape Sable, May 28, 1832. This is the only record of its appearance in North America. An abundant bird in the British Islands, many remain to breed, especially in Scotland, and on the islands about the coast. Breeds in Norway and Sweden, in Finland and in Lapland as far north as the Arctic Circle. The nest is often placed some distance from water, usually in a tuft of grass with a slight lining. The eggs are four in number and vary from yellowish to brownish-buff, sprinkled and spotted all over, with irregular spots of dark brown, varying in intensity of shade. The eggs are generally pear-shaped. The average size of ten specimens is 1.98 x 1.40.

254. *Totanus melanoleucus* (GMEL.) [548.]

Greater Yellow-legs.

Hab. Nearly all of North America; breeding in the more northern portions.

The Greater Yellow-legs, or Tell-tale, is found in North America at large. It is said to breed in the large marshes of Wisconsin, in Iowa, and in Northern Illinois; doubtless a few breed in suitable places

in California. The Greater Tell-tale winters from the Carolinas southward; is abundant during the migrations, and is well known to the gunners. In the Eastern States it appears to be much more wary than in Ohio, and is said to give warning to ducks and other game birds on the approach of the gunner. About four rapidly repeated, loud and shrill whistling notes are uttered, which is a signal to the rest of his feathered neighbors, when the whole take wing, often to the disappointment of the fowler. From this habit it derives the name of Tell-tale, and it is also known as Stone "Snipe," Greater Yellow-shanks, and Long-legged Tattler. The stately form of this bird may be seen moving along the gravelly banks of streams, wading in pools or the shallow margins of rivers and lagoons, feeding upon small fishes, crustaceans, etc. It is generally found in pairs, less often in small flocks, and its association with other Sandpipers is merely accidental. The eggs are grayish-white, marked with spots of dark brown, varying in intensity of shade, together with obscure shell-markings of lilac. The markings are over the entire surface, but more numerous at the larger end; three or four in number; size 1.43 X 1.20.

255. *Totanus flavipes* (GMEL.) [549]

Yellow-legs.

Hab. North America.

The common Yellow-legs, or Lesser Tell-tale, is found throughout North America. It breeds from Northern United States northward, extending its migrations to the Arctic regions. It winters in the Southern States and southward. In some localities during the migrations it is more abundant than the Greater Tattler, and its general habits and characteristics are the same; its cries are clearer and not so loud. It is fond of wading about in pools of water seeking food, which consists of larvæ of insects and small crustaceans.

The Lesser Yellow-shanks is known to breed in Alaska, at the mouth of the Porcupine River, which empties into the Yukon. It doubtless breeds in all the region between Fort Selkirk and Fort Yukon. It has been found nesting in the neighborhood of Great Slave Lake, and abundantly in the Mac Farlane and Anderson River regions. At the latter place eggs were found as early as the first part of June. The nests were mere depressions in the ground, without any lining; sometimes they were placed at the foot of a bush, with a scanty lining of withered leaves. The eggs were usually four. The bird is reported as doubtless breeding in Illinois and other regions farther south than those just mentioned. There is no doubt that a few of the Lesser Yellow-legs breed in Central Ohio. In referring to my notes I find

that a sportsman brought me a male bird on the 28th of June, 1886. This season (June 14, 1888) Mr. Robert Hedden shot a specimen, which proved to be a female, the skin of which is now in my cabinet. From this bird I took a well-formed egg, and the ovaries contained several others in different stages of development. The breast of this specimen was quite bare of feathers, indicating that it was engaged in the duties of incubation. The bird was sitting on the top rail of a fence when killed, and no others were noticed in the vicinity. The eggs of the Yellow-legs are of a light drab, or even vary to clay, buffy or cream color, sometimes light brown; the markings are bold and heavy, with great diversity of heavily splashed blotches of chocolate, umber-brown and blackish, these being chiefly at the larger end, and sometimes confluent. Paler shell-markings are also numerous and noticeable; pointedly pyriform in shape; three or four in number; sizes range from 1.58 to 1.78 long by about 1.16 broad.

256. *Totanus solitarius* (WILS.) [550.]

Solitary Sandpiper.

Hab. North America, breeding in Northern United States, northward; migrating southward to Northern South America.

The Solitary Tattler, or the American Green Sandpiper is found throughout the entire North America; breeds in Northern United States and northward, and probably throughout most of its United States range. Winters chiefly in Mexico, Central and South America and in the West Indies. It has the same characteristic habits of the Green Sandpiper of Europe—always seen near water, during the migrations, on the borders of lakes, ponds and rivers, or seeking its food, which consists chiefly of worms in the soft loamy soil of marshes. The Solitary Sandpiper is well named, when its personal habits or the localities which it frequents are considered. It is found, except during and shortly after the breeding season, about small ponds in woods, remote shaded ditches or small brooks, just such localities as are frequented by the Water Thrush, and its alarm note is very similar to that species, but is shriller and louder and is sounded while on the wing in its rapid flight. Although common, the eggs of this species have been until a comparatively recent date of special desideratum, and only a few specimens are as yet to be found in the numerous collections. In the last edition of this work I mentioned an egg supposed to belong to this species, which I took in an open field bordering the Scioto River, near Columbus, Ohio, in the latter part of May, 1877. This specimen was first described by the late Dr. J. M. Wheaton.* The egg

*In his Report on the Birds of Ohio. Vol. IV., Ohio Geological Survey, entitled Zoology and Botany, p. 486.

was of a pointed oval shape, and not nearly so pyriform as are the eggs of most of this family, size 1.25 by .88, smaller than the eggs of the Spotted Sandpiper. The ground was clay-color with a reddish tinge, thickly marked with reddish and blackish-brown. The nest was on the ground in as exposed a locality as is ever frequented by this bird. It contained two eggs, both far advanced in incubation, only one of which was preserved. In Jones' magnificent work* this egg is accurately figured.

From comparisons made at the time this specimen could not be referred to any other species than that of the Solitary Sandpiper.

Dr. Brewer describes an egg, taken May 28, 1878, by Mr. Jenness Richardson, near Lake Bombazine, Vermont. It measures 1.32 x .90. The ground color is of a light drab, similar to that of *Ægialitis meloda*; over the surface are scattered small rounded markings of brown, some of these are quite dark, nowhere confluent, and not large enough to be called blotches. Its shape was elongated pyriform. Mr. Capen, in his finely illustrated work,† gives a faithful colored illustration of this specimen. The female parent of this egg was shot as she left the nest.

[257.] *Totanus ochropus* (LINN.) [551.]

Green Sandpiper

Hab. Northern portions of the Old World. Accidental in Nova Scotia.

If we may regard the authority of the older ornithologists, Richardson and Nuttall, this bird obtained from them recognition as a straggler to North America. Its claim to our fauna, however, has been restored by the capture of a single specimen, said to have been taken in Nova Scotia, which was in the possession of J. Edmund Harting, Esq. The bird is very similar to our Solitary Tattler and averages slightly larger. It is very generally distributed through Europe and in some places esteemed a great delicacy for the table. Said to breed in all the northern portions of Asia. In England it is considered an abundant bird in spring and fall and a number of pairs remain to breed. Known also as the Whistling Sandpiper.

It frequents the shores of the sea and inland lakes, the banks of shallow streams and the borders of ponds and marshes. Breeds in various parts of Northwestern Germany and is known to nest in South-eastern France. The Green Sandpiper is said to be very peculiar in its mode of nesting—depositing its eggs in old nests situated in trees and is not known ever to nest on the ground. The nests usually oc-

*Illustrations of the Nests and Eggs of Birds of Ohio. Illustrations by Mrs. N. E. Jones: Text by Howard Jones, A. M., M. D., Circleville, Ohio, 1886.

†Oology of New England: Plate XIX. Fig. 6.

cupied are those of pigeons, jays, shrikes and other birds, but most commonly those of the Thrushes. These are said to be situated from three to six feet and as high as thirty-five feet from the ground. The eggs are four in number; greenish-white or delicate grayish sea-green, sparsely marked with spots, blotches, and markings of dark-brown, chiefly at the larger end; average size 1.52 x 1.12.

258. *Symphemia semipalmata* (Gmel.) [552.]

Willet.

Hab. Temperate North America, south to Brazil and the West Indies.

The Willet is the largest of the American family Scolopacidæ, except the genera *Limosa* and *Numenius*. One of the most extensively distributed of all of our North American birds, being found in the marshy regions of the interior; along the Atlantic coast from Nova Scotia to Florida; throughout Central America and into a large portion of South America. It is also abundant along the Pacific coast. Breeds throughout its United States range and wherever found in Southern districts. Nests commonly on Cobb's Island, Va., effectually concealing the eggs in the tall grass on the higher parts of the Island. The marshes at this place are also favorite breeding localities, where the nests are built up from the ground, which is wet at high tide. At Long Beach, N. J., it breeds rarely and is said to have been formerly one of the most abundant breeding species.

Mr. Perry writes that the Willet finds favorite breeding grounds in the salt marshes of Georgia and South Carolina. He mentions a large tract of 'salt grass' in Beaufort Co., S. C., where it breeds in great numbers. A hundred pairs or more are commonly observed breeding in this locality and at the same time, the eggs are very difficult to discover. Crows feed upon them and the empty shells are strewn plentifully over the field. The nest is a mere depression of the ground, lined with a few pieces of dry grass. Sometimes it is placed in a tussock of grass. Mr. Perry states that the eggs are deposited early in May. Mr. Stuart reports the Willet as breeding abundantly along the Gulf coast of Florida in May and June. The eggs are four in number, and there seems to be two distinct types of coloration in the ground color—either a greenish-white or a dark brownish-olive, marked with bold spots of various shades of umber-brown and markings of subdued purple. The eggs are very large for the size of the bird, ranging from 1.98 to 2.12 in length by 1.46 to 1.58 broad. Four eggs measure 1.95 x 1.50, 1.98. x 1.49, 2.05 x 1.53, 2.04 x 1.53.

[260.] *Pavoncella pugnax* (LINN.) [554.]**Ruff.**

Hab. Northern portions of the Old World; occasionally straying to Eastern North America.

The male of this species is known as the Ruff and the female as Reeve. It is a bird of wide distribution; found at various seasons of the year throughout Europe, the northern parts of Africa, and in western Asia. Examples of this bird have been taken in Eastern United States, as well as on Long Island and in various places in New England. Dr. Jasper took a specimen November 10, 1872, at the Licking county Reservoir, Ohio. It breeds more or less commonly in England and Scotland, where the eggs are deposited during the first or second week in May.

The Ruff is about the size of the Bartramian Sandpiper, and it also resembles this bird in color. But the most marked peculiarity of the species is the ruff-like growth of feathers about the neck, from which it takes its name. There is an endless variety of plumage in the birds, the males and females differing widely in this respect. As its specific name, *pugnax*, implies the bird is of a pugnacious disposition, the males engaging in aggressive combats during the breeding season. Their movements in fighting are said to be something like a game cock.

Breeds throughout the greater portion of Scandinavia and in Denmark. In Lapland it arrives in the last week of May where it is found along the margin of lakes and rivers; later in the season it may be found hiding in the tall grass of the marshes.

The nest is usually placed on a slight elevation in swampy places surrounded by coarse grass of which material it is composed. The eggs are four in number and average 1.60 x 1.09. Four eggs in my cabinet from England measure 1.64 x 1.17, 1.79 x 1.20, 1.64 x 1.18, 1.75 x 1.12. They are of an oblong pyriform shape; the ground color is of an olive or grayish-green; the markings are the same as those of the American Jack Snipe eggs but are heavier and more profuse—with spots and blotches of umber and blackish-brown.

261. *Bartramia longicauda* (BECHST.) [555.]**Bartramian Sandpiper.**

Hab. Eastern North America, north to Nova Scotia and Alaska. Breeds throughout its range. South in winter as far as Southern South America.

Bartram's Tattler is distributed more or less abundantly throughout the United States, but is rare west of the Rocky Mountains. Breeds commonly from the middle districts—Ohio, Indiana, Illinois, Iowa, Minnesota and Dakota northward, into the Fur Country, and in Alaska. It is very numerous on the prairies of the interior, and is

also common eastward. It is known as Field "Plover," Upland "Plover," Grass "Plover," Prairie "Pigeon," and Prairie "Snipe." In Ohio and Pennsylvania the eggs are hatched by the first or second week in June. One of the most familiar birds on the dry, open prairies of Manitoba, where it breeds, and is known as the "Quaily," from its soft, mellow note. Mr. L. Jones, of Grinnell, Iowa, informs me that it nests in that region about the 20th of May. Known to breed in various portions of Michigan, but its eggs are not often taken. The bird is less aquatic than most of the other Sandpipers, and is seldom seen along the banks of streams. Its favorite resorts are old pastures, upland, stubble fields and meadows, where its nests may be found in a slight depression of the ground, and they are not always well concealed. It frequently alights on trees or on fences, like a Meadow Lark. The eggs of Bartram's Sandpiper are of a pale clay or buff, thickly spotted with umber and yellowish-brown, especially about the larger end; commonly four in number; sizes range from 1.70 to 1.90 long by about 1.28 broad.

262. *Tryngites subruficollis* (VIEILL.) [556.]

Buff-breasted Sandpiper.

Hab. North America, especially the interior. Breeds in the interior of British America and in Alaska. Occasional occurrence in Europe.

This interesting little Sandpiper is of general distribution in North America, but apparently nowhere very common. It is migratory in the United States, and breeds in the Arctic regions. Winters south of United States. It is often found in company with the Semipalmated Plovers and Semipalmated Sandpipers on the gravelly banks of rivers. This bird is said to resemble Bartram's Sandpiper in frequenting upland fields and meadows. Breeds in the MacFarlane and Anderson River regions and in the Barren Lands of the Arctic coast. The nesting season in these regions is the latter part of June, extending to the middle of July. The bird also breeds in the Yukon River district. The nests are slight depressions in the soil, scantily lined with a few grasses or withered leaves. The eggs are clay color of various shades, sharply spotted and blotched with rich umber-brown; there is a great diversity in the shades of the ground color in a large series of specimens, and there is also the same variations in the markings; the eggs are pointedly pyriform in shape; commonly four in number, and measure from 1.40 to 1.50 long by 1.02 to 1.10 broad.

263. *Actitis macularia* (LINN.) [557.]

Spotted Sandpiper.

Hab. North and South America and West Indies. Winters chiefly south of the United States.

The familiar little Spotted Sandpiper is an extremely abundant

bird throughout North America, breeding everywhere. It winters in the Southern States and beyond. Every lazy fisherman and idle school boy, who has whiled away many a balmy and hot summer day along the banks of streams, knows this bird well by the bobbing and tilting movements of its body and tail, and its peculiar note, *peet-weet*, *peet-weet*, as it flies up and down and across the streams. It is known by many a curious nickname: "Teeter-tail," "Tip-up," "Sandlark," "Peet-weet" and others which generally refer to some eccentricity of the bird.

The eggs are creamy, buff or clay color, blotched, spotted and dotted with blackish-brown; usually four in number, and measure about 1.34 by .92. The nest of this Sandpiper is made on the ground, generally in the shelter of high weeds or grass on a sandy island or border of a cultivated meadow, near water and often at a considerable distance from any water. It is simply a depression in the soil, sometimes constructed with hay and moss. The eggs like all those of the waders lay in the nests with the small ends together.

264. *Numenius longirostris* WILS. [558.]

Long-billed Curlew.

Hab. Temperate North America, migrates south to Guatemala and the West Indies.

The large Sickle-bill is of irregular distribution in temperate North America, breeding nearly throughout its range. It is migratory northward and is resident from the Carolinas south to Mexico. It nests very abundantly on the South Atlantic coast, and on the prairies of the interior and the Northwest. Unlike others of its genus it is not a bird of high latitude. The eggs of the Long-billed Curlew are three or four in number; and almost exactly resemble those of the Willet, but are larger, measuring from 2.45 to 2.80 in length by 1.80 to 1.90 in breadth; they are, however, more of a pyriform shape than the eggs of the Willet. In common with other waders the eggs are deposited on the ground in a slight hollow lined with a few grasses. This Curlew may be known from all others by its large size and very long, curved bill, measuring from four to six or eight inches. It may sometimes breed at St. Mary's Reservoir, in Mercer county, and other localities of Northwestern Ohio, as it is known to breed in Northern Illinois.

265. *Numenius hudsonicus* LATH. [559.]

Hudsonian Curlew.

Hab. North and South America and West Indies. Breeds in the far north; winters chiefly south of the United States.

The American Whimbrel, Short-billed, or Jack Curlew, as this bird

is variously called, is not so abundant as the Long-billed or Eskimo Curlews. It is generally distributed throughout North America, breeding in the far north — in vicinity of ponds and lakes on the Barren Lands of the Arctic regions, the regions of the Anderson River and in various parts of Alaska. Nests like those of the last species. In the United States it is a spring and fall migrant and is often found in company with Godwits, Snipe and others of its tribe. The eggs are ashy-yellow, the markings are large and bold, of different shades of chocolate and umber-brown. The eggs of this species can only be distinguished from those of the following species by their larger size; from 2.12 to 2.30 in length by about 1.60 broad; generally four in number; of the usual pear-shape.

266. *Numenius borealis* (FORST). [560.]

Eskimo Curlew.

Hab. Eastern Province of North America, breeding in the Arctic regions; south in winter to Southern South America.

The Dough-bird, or Eskimo Curlew, is found in North America at large and breeds within the Arctic circle. It migrates through the United States, where it is rarely known to winter, and never to summer; wintering in Central and South America. Abundant in certain places during the migrations. In Labrador it is said to fairly swarm in August. Of this bird's nest and eggs Dr. Coues says: "This species breeds in great numbers in the Anderson River region, usually making up its nest complement of four eggs by the third week in June. The nest is generally in an open plain, and is a mere depression of the ground, lined with a few dried leaves or grasses. The eggs vary to the great extent usually witnessed among waders. The ground is olive-drab, tending either to green, gray or brown in different instances. The markings, always large, numerous and bold, are of different depths of dark chocolate, bistre and sepia-brown, with ordinary stone-gray shell spots. They always tend to aggregate at the larger end, or at least, are more numerous on the major half of the eggs; though in a few instances the distribution is nearly uniform. Occasionally the butt end of the egg is almost completely occupied by confluence of very dark markings. Eggs vary from 1.90 x 1.40 to 2.12 x 1.33, averaging about 2.00 x 1.45."*

[267.] *Numenius phæopus* (LINN.) [561.]

Whimbrel.

Hab. Old World; occasional in Greenland.

In England and Scotland this bird is known as Whimbrel Curlew, "Half-Curlew," or Jack Curlew. It breeds throughout Northern

*Birds of the Northwest, p. 512.

Europe and Asia. Though pretty generally diffused in Great Britain, it is only found breeding in the extreme north of Scotland, on the Orkney and Shetland Islands, where the eggs are hatched by the first part of June. In these places the nests are made on elevated portions of the heath. During the breeding season the Whimbrel is found on the Faroe Islands and in Iceland. It is distributed throughout Denmark, Scandinavia and Russia; a few are known to breed in Lapland, as far north as latitude 65° . It is said by the best authorities that this bird is the most widely diffused of all the waders. Its extra-limital range includes Siberia, India, China, Australia and Africa.

On the Faroe Islands it is recorded as breeding from the 25th of May to the 17th of June. The nest being simply a depression in the soil on some slight elevation in dry spots in marshes. The eggs are four in number, pear-shaped, and vary in color from light olive-brown to dark greenish-brown, clouded with spots and blotches of dark umber; average size 2.34×1.67 .

[239.] *Vanellus vanellus* (LINN.) [512.]

Lapwing.

Hab. Northern portion of Eastern Hemisphere; occasional in Arctic America, Greenland and the Islands of Norton Sound, Alaska.

The Lapwing or Peewit is one of the most familiar birds of Europe. A rare visitant in Greenland and other parts of North America. Abundant in all suitable localities in Great Britain and in all the adjacent smaller islands. Found as far North as the Faroes, and in Iceland. Common in Denmark, Norway and Sweden and throughout Russia. It is not so abundant in various portions of Continental Europe, as in France, Spain and Italy.

The Lapwing is a handsome plover; in the adult in summer dress the fore-part and top of the head, chin, throat and breast is uniform blue-black; side of head and neck white, grayish behind the neck; upper parts chiefly metallic bottle green, changing to a coppery purple. From the occiput springs a long crest of narrow bluish-black feathers which curve upwards. It is commonly called Te-wit, Crested Lapwing, Green Lapwing and Green Plover.

The nests of this bird are like those of all the Plovers—slight depressions in the soil with a few grasses for a lining. The eggs are four in number; they vary from dull, light, grayish-buff to deep olive buff, more or less heavily marked with spots and blotches of brownish-black; they are pyriform in shape. Four eggs in my cabinet, collected in Staffordshire, England, April 18, measure 1.88×1.30 , 1.89×1.32 , 1.84×1.36 , 1.82×1.32 . The average size is 1.85×1.33 .

The eggs are regarded as a delicacy and are much sought after in all districts where the bird is common.

270. *Charadrius squatarola* (LINN.) [513.]

Black-bellied Plover.

Hab. Northern portions of Northern Hemisphere, breeding far north; migrating south in winter; in America to Brazil, New Grenada and the West Indies.

This handsome bird is known by several different names: Beetle-head, Ox-eye, Whistling Field Plover, Bull-head Plover and Swiss Plover. It is a species of wide distribution, being nearly cosmopolitan during its migrations, wandering through Southern Asia, Northern and Southern Africa, Australia, the West Indies, Central and South America to Brazil. The eggs have only been taken in the extreme Arctic regions—on both sides of the Ural Mountains in Northern Russia—the banks of the Taimyr in the East and the tundras of the Petchora River in the West. In North America it has been found breeding in various places in the Arctic regions, as on the islands of Franklin Bay on the Arctic coast, in the first part of July and on the Barren Lands. It is also known to breed in Greenland. All the nests found are mere depressions in the ground with a slight lining of grasses and leaves.

The eggs are described as being very similar to those of the Golden Plover, *C. apricarius*, or those of the Lapwing; pyriform in shape, varying from light buffy-olive to deep olive-buff, thickly and heavily marked with brownish-black or deep black; average size, 2.04 x 1.43.

[271.] *Charadrius apricarius* LINN. [514.]

Golden Plover.

Hab. Europe; in winter south into Africa. Greenland.

The European Golden Plover is like the American bird, but the linings of the wings are white. In Great Britain during the winter months it is one of the most abundant species; in summer returning to the moorlands of Scotland and Ireland, and northward to the Orkney and Shetland Islands, where it breeds. It is found in Norway, Sweden and in Lapland. Breeds also in the Faroes, in Iceland and in Eastern Greenland. The nest is simply a hollow in the ground, lined with a few grasses. The full complement of eggs is four and seem exceeding large for the size of the bird.

The ground color in a large series of these eggs varies considerably—creamy-white, others with a much darker shade of the same, and again of a dark chocolate-brown. On these different ground-colors the large, bold spots and confluent blotches of brownish-black present quite a varied appearance. Eight eggs in my cabinet from Renfrew, Scotland, measure, 2.02 x 1.42, 2.08 x 1.37, 2.10 x 1.38; 2.11 x 1.45, 1.96 x 1.40, 2.01 x 1.37, 2.08 x 1.40, 2.12 x 1.43. Average, 2.08 x 1.42.

272. *Charadrius dominicus* MULL. [515.]**American Golden Plover.**

Hab. North America at large, breeding in the Arctic regions.

The Golden or Green Plover breeds in Arctic America east of the coast of Bering Sea and Strait, migrating south in winter nearly throughout the entire America as far south as Patagonia. In spring and fall it is an abundant bird in the United States, and is generally esteemed for the table on account of its large size and the flavor of its flesh. Breeds abundantly on the coasts and islands of the Arctic Sea, and on the Barren Lands, depositing four eggs in a depression of the soil, which is usually slightly lined with bits of dry grass. Out of one hundred and fourteen nests recorded by Mr. MacFarlane in the Arctic regions, ninety-two contained four eggs each. They vary from pale buffy-brown to dark grayish-buff, spotted and blotched with brownish-black, chiefly at the larger end. The spots are often confluent. The average size is 1.98×1.37 .

A set of three eggs in the collection of Mr. J. Parker Norris were taken July 2, 1864, by R. R. MacFarlane, at Franklin's Bay. The nest was on the sea beach, and the parent bird was seen. They are ovate pyriform in shape, quite pointed, and are of an ochraceous-buff, heavily blotched and spotted (chiefly at the larger ends, however,) with seal brown and black. They measure 1.96×1.28 ; 1.92×1.32 ; 1.86×1.33 . The markings form an indistinct circle around the larger ends.

Capt. B. F. Goss has a set of four eggs of the Golden Plover in his collection, taken by Mr. MacFarlane on the Barren Grounds near the Anderson River. These are buffy-drab, spotted and splashed with dark brown, almost black; they are pyriform in shape, quite pointed at the small end, and blunt at the larger portion of the egg.

272a. *Charadrius dominicus fulvus* (GMEL.) [515a.]**Pacific Golden Plover.**

Hab. Asia, and islands of the Pacific. In North America, the islands and coasts of Alaska. In winter, south through India, China, etc., to Australia and Polynesia.

The Asiatic Golden Plover is similar to *C. dominicus*, but is slightly smaller and of a more golden color. It breeds in Northern Asia, the Alaskan coasts of Bering Sea and Strait. Nesting and eggs similar to those of the last. Average size of the eggs, 2.02×1.30 .

273. *Ægialitis vocifera* (LINN.) [516.]**Killdeer.**

Hab. Temperate North America, south in winter to the West Indies, Central and Northern South America.

This familiar bird whose notes, *kil-deer*, *kil-deer*, are heard in the daytime, and often in moonlight nights, more frequently during the breeding season than at any other time, is very abundant in North

America at large, breeding anywhere in its range. The nest is placed on the ground, usually in the vicinity of a stream or pond, and often on an elevated spot in the grass or in a furrowed field. It is merely a slight depression of the ground. The bird frequents both high and low grounds, pastures and fallow fields, as well as borders of streams.

The eggs are drab or clay-color, thickly spotted and blotched with blackish-brown and umber; small end, quite pointed, as is usually the case with all eggs of birds of this order; the eggs are generally four in number, measuring from 1.50 to 1.60 long by about 1.10 broad.

274. *Ægialitis semipalmata* BONAP. [517.]

Semipalmated Plover.

Hab. North America in general; breeding in Arctic and sub-Arctic districts; south in winter throughout tropical America as far as Brazil and Peru.

The Semipalmated Ring Plover is abundant and generally diffused throughout the whole of North America. In the United States it occurs only in the migrations, but it probably breeds occasionally in some of the Northern States. Both eggs and young have been taken near Chicago, Ill., in July. It has been found in the summer months in the Saskatchewan and Mackenzie River regions, and in those of Hudson's Bay, in Greenland and throughout various portions of Arctic America. It has been found breeding in the latter part of June on the Arctic coast, and in the Anderson River regions. Breeds on the islands of the Alaskan coast, and at the mouth of the Yukon. Audubon found it nesting in Labrador. The nest is a mere depression in the ground, with a lining of dry grasses or leaves. The bird's general habits are like those of the Killdeer.

The eggs vary from greenish to yellowish-ash, spotted, blotched and dotted with varying shades of brown; pyriform; scarcely distinguishable from those of the Killdeer, excepting in size; length 1.20 to 1.40 by .90 to .95 in breadth; two to four in number.

275. *Ægialitis hiaticula* (LINN). [518.]

Ring Plover.

Hab. Northern portion of Eastern Hemisphere, and eastern portion of Arctic America.

The well known Ringed Dotterel, or Ringed Plover of Europe, holds its place as a North American species on the grounds of its breeding abundantly throughout Greenland and on the shores of Cumberland Gulf. It is particularly common in Great Britain, where it frequents the banks of rivers, inlets and bays, and the shores of the sea. Common in Norway, and it has been met with in Lapland.

The eggs of this species are deposited in a slight depression in the sand, in broken shells or shingles above high-water mark. Four eggs are laid and their ground color is of a pale buff or cream color; they

are beautifully spotted with dark reddish-brown, approaching black, here and there are obscure shell markings. Average size 1.41 x 1.00. Four eggs from England, collected May 6, are in my cabinet and measure 1.36 x 1.00, 1.40 x 1.02, 1.43 x .99, 1.42 x 1.00.

[276.] *Ægialitis dubia* (SCOP). [519.]

Little Ring Plover.

Hab. Northern portions of Eastern Hemisphere. Accidental on the coast of California and in Alaska.

The Little Ringed Dotterel or Little Ringed Plover breeds in the northern portions of the Old World.

Its general habits, nesting and eggs are said to resemble those of the Semipalmated Plover, but the eggs, like the bird, are much smaller.

A set of four eggs in the cabinet of Mr. J. Parker Norris were collected April 5, 1885, by H. Muller, at Anclam, Germany. They are short ovate in form, of a pinkish-buff ground color, finely speckled all over with bistre. They measure 1.16 x .87, 1.18 x .88, 1.19 x .90, 1.21 x .88.

277. *Ægialitis meloda* (ORD). [520.]

Piping Plover.

Hab. Chiefly the Atlantic coast of the United States, north to southern Labrador. In winter, West Indies.

The Piping Plover is an abundant species in the summer months along the eastern coast of the United States, breeding from the Carolinas northward as far as the Gulf of St. Lawrence. It is a graceful and attractive little species, possessing a remarkably musical voice which can be heard as the bird moves gracefully over the sandy beaches. Its food is small marine worms, crustacea, etc. During incubation it is said that the parents rarely sit upon their eggs, except at night and in damp weather, but always remain in the vicinity and watch over their treasures with solicitude.

The eggs are four in number, pale buff, speckled with black and purplish gray. In some the markings are very much more profuse than in others. The average size of a large series (fifty in number) is 1.29 x .95. Four specimens measure, 1.28 x 1.01, 1.31 x 1.01, 1.25 x 1.03, 1.28 x 1.00.

277 a. *Ægialitis meloda circumcincta* RIDGW. [520a.]

Belted Piping Plover.

Hab. Missouri River region; occasionally eastward to the Atlantic coast.

This variety of the Piping Plover is found between the Missouri River and the Rocky Mountains and as far eastward as Lake Koskonong, in southern Wisconsin and occasionally along the Atlantic coast. Its habits are the same as those of *meloda*. The eggs measure 1.27 x .93.

278. *Ægialitis nivosa* CASS. [521.]**Snowy Plover.**

Hab. Western North America, south to Mexico in winter, both coasts of Central America and in Western South America to Chili.

The Snowy Ring Plover inhabits the United States chiefly west of the Rocky Mountains. It is a constant resident along the California coast, and a specimen has been taken on the coast of Texas in the latter part of June. Mr. Emerson, of Haywards, California, informs me that it nests along the sandy beaches of the ocean coast, and says he has no doubt that it breeds along the bay beach, as he shot the young there in June. Mr. Shields states that it is abundant along the sandy beaches in the vicinity of Los Angeles, nesting in the first week of April; fresh eggs often being found as late as May 15. Mr. N. S. Goss found the Snowy Plover breeding on the salt plains along the Cimarron River, in the Indian Territory, the northern limits of which extend into south-western Comanche County, Kansas; he also took two specimens within the State limits. The birds are described as being very much lighter in color than the California specimens.* The eggs are three in number, in ground color, pale buff or clay color, and the markings very much resemble Wilson's Plover, but are more numerous and scratchy; about the size of the eggs of the Piping Plover, *meloda*, 1.20 x .90

[279.] *Ægialitis mongola* (PALL).**Mongolian Plover.**

Hab. Northern Asia, south in winter to Malay Archipelago and Australia, Choris Peninsula, Alaska, accidental.

A bird of wide distribution. Found throughout Northern Asia in general, west to St. Petersburg, Palestine and Northeastern Africa. In winter it is found throughout Southern Asia and as far south as the Philippines, Malay Archipelago, etc., to Australia. Breeds commonly in Northern portions of Asia, nesting on the ground like others of its tribe. The eggs are four in number; pale dull olive or buff sparsely marked with brownish-black; size, 1.43 x 1.05.

280. *Ægialitis wilsonia* (ORD.) [522.]**Wilson's Plover.**

Hab. Atlantic and Gulf coasts of North America, north to Long Island. Casually to Nova Scotia. South in winter to Brazil and Peru and West Indies.

Wilson's Plover, named in honor of the immortal Wilson, is common along the sea-coast of the South Atlantic and Gulf States. It is found along the Eastern coast, but rarely north beyond New Jersey. One of the "beach birds" and may be found in company with others of the genus *Ægialitis*. On some of the islands on the coast of Georgia Mr. Perry found them breeding in great numbers in company with the

*Auk. III. p. 409.

Least Tern, nesting very much in the same manner. The eggs are deposited in a cavity of the loose pebbles or shells of the beach; they are usually three in number. The ground color is a pale olive-drab or clay-colored, some having a greenish tint, marked all over with blackish-brown, well defined spots, small splashes and fine dots. Sizes from 1.30 to 1.45 long by 1.00 to 1.05 broad. A set in Mr. Perry's cabinet measures as follows: 1.37 x .99, 1.82 x .98, 1.40 x 1.00.

281. *Ægialitis montana* (TOWNS.) [523.]

Mountain Plover.

Hab. Western North America, east to the Great Plains; accidental in Florida.

More properly called Prairie Plover, but it seems to have been badly named, for it certainly is a prairie bird, inhabiting the most barren prairies, as well as the watered regions of the United States, from the plains to the Pacific. It can readily be recognized by its large size, the lack of rings on the breast, with the uniform pale, yellowish-brown above. It is quite independent of water, and is said to be not the least aquatic, even on the Pacific coast; it frequents the plain, never the marsh or beach. Nests anywhere on the open prairie in June and July.

The eggs are usually three in number, olive-drab, with a brown shade, finely and thickly dotted with very dark brown and black, the markings not larger than a pin's head; sizes from 1.40 to 1.50 long by 1.10 to 1.12 broad.

283. *Arenaria interpres* (LINN.) [509.]

Turnstone.

Hab. Entirely cosmopolitan, chiefly along the sea-coasts. Breeds in high northern latitudes.

The common Turnstone is widely distributed in the breeding season throughout the northern portions of both continents, and wanders southward along the sea-coasts of all countries. In America it breeds commonly in the Barren Lands of the Arctic coasts and the Anderson River districts, on the islands of Franklin and Liverpool Bays, nesting in July. In the Hudson's Bay country the eggs are laid in June; the nest is nothing but a hollow scratched in the earth, lined with bits of grass. It is known by various names, "Brant Bird," "Bead Bird," "Horse-foot Snipe," and from its variegated colors, "Calico-back."

The eggs are greenish-ash, spotted, blotched and dotted irregularly and thickly with yellowish and umber brown; two to four; abruptly pyriform in shape, and average 1.58 x 1.15.

A set of four eggs of this species is in the cabinet of Captain B. F. Goss. These were taken on the Yukon River, in Alaska. The nest was a slight depression on the ground. The eggs are greenish-drab,

spotted all over with brown; sizes, 1.68 x 1.13, 1.60 x 1.17, 1.60 x 1.17, 1.68 x 1.13.

284. *Arenaria melanocephala* (VIG.) [510.]

Black Turnstone.

Hab. Pacific coast of North America, from Alaska to Santa Cruz and San Minguel Island.

The Black-headed Turnstone is common along the Pacific coast of North America. It has been found nesting in Alaska at the mouth of the Yukon. In all respects its habits, nesting, eggs, etc., are said to be similar to those of *A. interpres*. The eggs average 1.62 x 1.12.

[285.] *Hæmatopus ostralegus* LINN. [506.]

Oyster-catcher.

Hab. Sea-coasts of Europe, portions of Asia and Africa; occasional in Greenland.

The Oyster-catcher of Europe claims a place in the North American fauna from its occasional occurrence in Greenland. It appears to be common in all suitable places on the coasts and islands of Europe, extending northward to the northern shores of Russia and Siberia, where it breeds on the great Arctic flats. Common throughout the summer months in Denmark, Sweden and on the west shores of Norway. In Great Britain the Oyster-catcher is a well known species, nesting on the shores and islands as far north as Orkney and Shetland. The bird breeds generally in pairs, but in some instances a large number are found nesting in one place. Four eggs are usually laid in some cavity in the sand or shingle. Nests have been found on the top of rocks, ten to fifteen feet above the ground. The eggs are of a dull creamy buff, spotted and blotched with brownish-black, generally over the entire egg. Six eggs in my cabinet from England measure 2.15 x 1.57, 2.35 x 1.53, 2.16 x 1.56, 2.17 x 1.54, 2.32 x 1.50, 2.19 x 1.56.

286. *Hæmatopus palliatus* TEMM. [507.]

American Oyster-catcher.

Hab. Sea-coasts of America from Nova Scotia and Southern California, south to Patagonia.

The Brown-backed Oyster-catcher breeds along the Atlantic coast from New Jersey southward, where it becomes more common. It breeds abundantly, but irregularly, in different localities. There are extensive breeding resorts along the coast of Virginia. On Cobb's Island it was formerly quite common during the breeding season, where now only a few pair are said to be found nesting. It is common along the coast of Florida, nesting on the beaches and depositing three, sometimes only two, eggs. The American Oyster-catcher is an abundant resident throughout the Bahamas, nesting wherever there are sandy beaches. It has been found breeding in Galveston Bay, Texas, in June, and on islands at the mouth of the Rio Grande. The eggs are creamy or white, spotted and blotched irregularly with varying shades of

brown; rather oval in shape; sizes range from 2.12 to 2.30 in length by 1.50 to 1.62 in breadth. Six eggs from the coast of Virginia measure 2.22 x 1.57, 2.23 x 1.58, 2.19 x 1.52, 2.15 x 1.52, 2.25 x 1.60, 2.21 x 1.57.

287. *Hæmatopus bachmani* AUD. [508.]

Black Oyster-catcher.

Hab. Pacific coast of North America from lower California north to the Aleutian Islands and across to the Kurilas.

Bachman's Oyster-catcher is a characteristic bird of the Pacific coast, being more common to the north than to the south. It is said to be partial to rocky coasts and islands and not always met with on sand beaches.

I am informed that it is common on Santa Cruz Island and that it breeds on the outlying rocks. At these places it is by no means shy as is the case in other localities. Breeds on all suitable islands along the Pacific coast from Santa Barbara northward. Mr. Bryant in his Farallon paper,* remarks: "Flocks of five to ten were seen in May and June, 1887. They were very tame, feeding slowly and quietly along the water's edge in compact flocks. Upon higher ground they moved more rapidly and spread out more. Individuals were seen as late as August, but they do not, Mr. Emerson states, breed on the island. A female was taken July 26th, 1886." A few are known to breed on the Aleutian Islands. When disturbed the birds utter a peculiar low whistle, calling to one another for hours at a time. The eggs are two or three in number, light olive-buff, speckled or spotted with brownish black and purplish-gray. Average size 2.18 x 1.52. They are deposited in a slight cavity in the gravel or on the bare rock.

[288.] *Jacana gymnostoma* (WAGL.) [568.]

Mexican Jacana.

Hab. Valley of the Lower Rio Grande, Texas, south into Central America, Panama, Cuba, Hayti.

A bird which combines the characters of the Plover and the Rail but outwardly distinguished from either by the excessive development of the toes and particularly the claws. These are slender, compressed, nearly or quite straight, that of the hallux much longer than its digit. The spread of feet thus acquired enables the bird to run quite easily over floating vegetation in the marshes. Dr. James C. Merrill met with the present species near Fort Brown, in Southwestern Texas, in the early part of August, 1876. The bird is common throughout the whole of Middle America, Mexico and Central America to Panama, inhabiting the dense marshes of these regions, nesting like the Rails.

The eggs are of a rounded-oval shape, ground color, bright drab or tawny olive, marked over the surface with a confused net-work of

*Birds and Eggs from the Farallon Islands.

black, or dark brown wavy stripes, blotches and lines. Average size, 1.22 x .94.

289. *Colinus virginianus* (LINN.) [480.]

Bob-white.

Hab. Eastern United States; west to Dakota, Kansas, Indian Territory and Eastern Texas. North to Southern Maine and Southern Canada; south to the Atlantic and Gulf States.

The celebrated game bird of Eastern United States. In the two southern extremes of its habitat it is found in two light and dark climatic varieties, as below. Found throughout the greater portion of the year in coveys; in the early spring pairing, each pair selecting a particular locality where they remain during the summer months. Where mating has taken place the male's well-known mellow notes,—*Bob-white*, *Bob-white*, may be heard at short intervals echoing throughout the woodland. The favorite nesting places of this bird are on the ground in corners of rail fences, at the foot of stumps surrounded by a thick growth of vegetation, in gardens or cultivated fields where there are bunches of tall grass or weeds. Two and sometimes three broods are reared in a season and nesting begins as early as May 1st. The nest is often made in close proximity to the farm house. It is rarely built in thick woods. Dr. Jones mentions a nest which he found alongside a railroad track.* It is usually constructed of dry grasses, straws, leaves or weeds. The complement of eggs is from fifteen to twenty-five, often only twelve, but usually about eighteen. They are pure white unless stained by the bed of grass upon which they lay. At one end they are quite pointed, at the other obtusely rounded; size 1.20 x .95.

289a. *Colinus virginianus floridanus* (COUES.) [480a.]

Florida Bob-white.

Hab. Florida.

A darker colored bird than *C. virginianus*. General habits, nesting and eggs the same. Eggs, 1.19 x .92.

289b. *Colinus virginianus texanus* (LAWR.) [480b.]

Texan Bob-white.

Hab. Texas and Northern Mexico, north to Western Kansas.

A bird of paler color than the *C. v. floridanus*. Eggs smaller than *C. virginianus*, 1.17 x .91.

292. *Oreortyx pictus* (DOUGL.) [481.]

Mountain Partridge.

Hab. Pacific coast from San Francisco north to Washington Territory.

The beautiful Mountain or Plumed Partridge is a much larger and handsomer bird than the Bob-white. The head is adorned with two arrow-like plumes three or four inches in length; these are noticeable in

*Illustrations of the Nests and Egg of Birds of Ohio.

the chick just from the egg, in the form of a little tuft of down. The general slate and olive color of the adult is beautifully marked with white along the sides, inner secondaries of the wings, sides of the neck, etc. The bird is found breeding along the Pacific coast region from California north into Washington Territory. Mr. Emerson informs me that it breeds in the higher mountain ranges, not below 4,000 feet. In some portions of Oregon it is very abundant. The eggs are deposited on the ground, on a bed of dead leaves, under a bush or tuft of grass or weeds. Six to twelve are usually laid, of a cream color with a reddish tint. Dr. Coues describes the eggs as miniatures of the Ruffed Grouse's, only distinguishable by their smaller size, 1.36 x 1.02.

292a. *Oreortyx pictus plumiferus* (GOULD.) [481a.]

Plumed Partridge.

Sierra Nevada ranges from Oregon southward; coast ranges of California to Cape St. Lucas.

This sub-species, which very much resembles *O. pictus*, inhabits both sides of the Sierra Nevada Mountains from Eastern Oregon southward, through the coast ranges of California. Its general habits, nesting, eggs, etc., are the same as those of the Mountain Partridge. The eggs are creamy-buff, of varying shades, and their average size is 1.40 x 1.02.

293. *Callipepla squamata* (VIG.) [484.]

Scaled Partridge.

Hab. Northwestern Mexico and border of the United States, from Western Texas to New Mexico and Southern Arizona.

This handsome Partridge, called Blue Quail, is distributed throughout Northwestern Mexico, Western Texas, New Mexico and Arizona, but is said to be less numerous than the crested Partridges or Quails. In Arizona they are found in flocks of from six to ten, sometimes more in the most barren places, miles away from any water. Mr. W. E. D. Scott found this Quail as abundant on the dry mesas of the San Pedro slope of the Santa Catalina Mountains, up to an altitude of 3,500 feet, as its congener *C. gambeli*. At this altitude Mr. Scott found a nest, May 20, containing eleven eggs.* It inhabits a more open country than *gambeli* and in other localities large flocks of both species were often seen together. A slight depression under a bush serves as a nest, it is generally lined with a few coarse grasses. In Western Texas complete sets of eggs may be found as early as April 25. The eggs are extremely thick-shelled; the number laid ranges from eight to sixteen, twelve being the more common number. Their color is buffy-white or of a cream color, irregularly dotted with specks of light brown; size 1.24 x .94.

*Auk. III, pp. 387-388.

293 a. *Callipepla squamata castanogastris* BREWST.**Chestnut-bellied Scaled Partridge.**

Hab. Eastern Mexico and Lower Rio Grande of Texas.

This bird is like the last but the general coloring is deeper and richer. The bird appears to inhabit the low lands along the lower Rio Grande Valley, while *C. squamata* inhabits the table lands of Northwestern Mexico, Western Texas, New Mexico and Arizona.

Mr. George H. Ragsdale, of Gainesville, Texas, kindly sent me four eggs of this bird for inspection; these have a ground color varying from white to a buff with the surface marked with minute specks of reddish-brown. In a specimen having a white ground the markings have a purplish tint. The shape of the eggs is characteristic of all eggs of the Partridges. The sizes of the four specimens are, 1.17 x .94, 1.13 x .92, 1.15 x .94, 1.16 x .93.

Capt. B. F. Goss has a set of ten eggs of this Partridge taken May 14, 1886, in Western Texas. They are dull white speckled all over with fine dots of different shades of brown. Some of the eggs have a few small brown spots on them more than a sixteenth of an inch in diameter; they resemble the eggs of the Scaled Partridge, but are more thinly speckled and much lighter in color. Sizes, 1.25 x .99, 1.17 x 1.00, 1.24 x 1.06, 1.26 x 1.05, 1.26 x .99, 1.24 x 1.05, 1.25 x .99, 1.27 x 1.00, 1.27 x .99, 1.28 x 1.00. The nest from which these eggs were taken was on the ground and made of leaves and dry grass.

294. *Callipepla californica* (SHAW.) [482.]**California Partridge.**

Hab. Coast valleys from California to Washington Territory.

The Californian Partridge or Valley Quail inhabits the lower portions of California and Oregon, where it is very abundant, and also Eastward nearly to the Colorado River. The nest is made on the ground, and is often found in curious places. Mr. Emerson says it is sometimes placed in the garden, within twenty feet of the doorway; he saw eggs of this Quail laid in the nest of chickens that had hidden their nests in the barn-yard, and it is commonly found under hedges, bushes, brush-heaps; even in the grass by the wayside. Mr. Bryant mentions several cases of this bird's nesting in trees upon the end of a broken or decayed limb, or at the intersection of two large branches. One case he cites of a brood being hatched in a vine-covered trellis at the front door of a popular seminary.*

Mr. H. R. Taylor, of Alameda, California, records a nest of the Spurred Towhee on the ground in which were four eggs of the Towhee and two of the California Quail.†

* Unusual Nesting Sites, I. Bull. Cal. Acad. Sci. II, 451.

† Ornithologist and Oologist, Vol. X, p. 142.

The eggs of this species are most beautifully marked on a creamy-white ground with scattered spots and blotches of old gold, and sometimes light drab and chestnut-red. In a large series of specimens sent me by Mr. Arnold Boyle, collected in the vicinity of Banning, California, there is a striking variation in this respect. In some specimens the gold coloring is so pronounced that it strongly suggests to the imagination that this Quail feeds upon the grains of the precious metal which characterizes its home, and that the pigment thereof is imparted to the eggs. The number laid ranges from eight to twenty-four. In shape they are like those of the Bob-white. Ten selected eggs measure 1.13 x .90, 1.18 x .93, 1.19 x .93, 1.19 x .94, 1.23 x .90, 1.27 x .96, 1.30 x .95, 1.32 x .95, 1.33 x .97, 1.35 x .94. The average size is 1.23 x .94.

294a. *Callipepla californica vallicola* RIDGW.

Valley Partridge.

Hab. Interior regions of California and Oregon, south to Cape St. Lucas.

This variety, which is very similar to the last species, is common to the interior valleys and foot-hills of the Pacific Province. There is essentially no difference between the eggs of this bird and those of *C. californica*.

295. *Callipepla gambeli* (NUTT.) [483.]

Gambel's Partridge.

Hab. Northwestern Mexico, Arizona, New Mexico, Southern Utah and Western Texas.

A characteristic game bird of Arizona and New Mexico; abundant on mountains and in valleys. It is found as far east as Western Texas, west to the Colorado River, north to Southern Utah. In Texas it is replaced by the Massena Quail. Mr. W. E. D. Scott found it distributed throughout the entire Catalina region in Arizona below an altitude of 5,000 feet. By the middle of April, on the San Pedro slope of the Catalina mountains most of the birds are paired, and breeding has fairly begun. About Tucson the breeding season begins from three weeks to one month earlier.* This bird is also known as the Arizona Quail.

The nest is like that of any other partridge, placed on the ground, sometimes without any lining. The eggs are from eight to sixteen in number and they do not differ from those of the *C. californica*. The average size of thirty specimens is 1.27 x .98.

296. *Cyrtonyx montezumæ* (VIG.) [485.]

Massena Partridge.

Hab. Western and Central Mexico, from Mazatlan and Valley of Mexico north to Western Texas, New Mexico and Arizona.

In Arizona this bird is known as "Fool Quail" or "Fool Hen." Mr. Scott mentions finding it common in the evergreen oak region of

*Auk. Vol. III, p. 388-389.

the Pinal Mountains, near the head of Mineral Creek in Arizona and about as abundant in the same localities on the San Pedro slope of the Catalina Mountains, ranging up as high as 5,700 feet and as low as 4,000 feet throughout the year. It was generally met with in coveys of six to a dozen birds. Prof. Ridgway describes an egg as plain white, size, 1.21 x .90, and states that identification is very doubtful.*

297. *Dendragapus obscurus* (SAY.) [471.]

Dusky Grouse.

Hab. Rocky Mountains, west to Wahsatch, north to Central Montana, south to New Mexico and Arizona.

The Dusky Grouse in its several geographical garbs is distributed chiefly throughout the wooded and especially the evergreen regions of the United States, from the Rocky Mountains to the Pacific and northward into British America. In the mountains of Colorado this species is found on the border of timber line throughout the year, going above in the fall for their principal food — grasshoppers. In summer its flesh is said to be excellent, but when frost has cut short their diet of insects and berries they feed on spruce needles and their flesh acquires a strong flavor. In its habits it resembles the Ruffed Grouse. It nests on the the ground, often under shelter of a hollow log or projecting rock, with merely a few pine needles scratched together on which the eggs are laid. The eggs are buff or cream color, marked all over with small round spots of umber-brown, but generally more numerous toward the greater end; eight to fifteen are laid; average size 1.98 x 1.42.

297a. *Dendragapus obscurus fuliginosus* RIDGW. [471a.]

Sooty Grouse.

Hab. Mountains near the Pacific coast from Sitka, south to California.

A darker colored bird than *D. obscurus*.

Mr. A. W. Anthony records this Grouse as abundant in Washington county, in the northern part of Oregon.† He states that in the winter the bird remains high up in the firs and is very seldom seen. At the first indication of spring the males begin to “hoot.” This is not dissimilar to the “booming” of the Prairie Hen, and when uttering these love notes the bird may usually be seen about fifty or seventy-five feet from the ground in a thick fir. The note is repeated from five to seven times. Mr. Anthony says: “This Grouse is an accomplished ventriloquist; I have often looked for an hour for one supposed to be fifty yards in front of me to find it as far in the rear. Nests found in May contained from five to seven eggs. A set of seven eggs of this bird in the collection of Capt. B. F. Goss, was taken June 1st, 1887, at

* Manual of North American Birds, p. 194.

† Auk., Vol. III, p. 164. Field notes on the Birds of Washington County, Oregon.

Oakland, Oregon. The nest was placed on the ground. The eggs are creamy buff, spotted and speckled with reddish brown; the spots are small and scattered, most of them sharply defined; the measurements of the seven eggs are as follows: 1.87 x 1.38, 1.81 x 1.33, 1.78 x 1.33, 1.86 x 1.37, 1.88 x 1.36, 1.80 x 1.34, 1.83 x 1.35.

297*b*. *Dendragapus obscurus richardsonii* (SAB.) [471*b*.]

Richardson's Grouse.

Hab. Northern Rocky Mountains of the United States—Central Montana northward into British America.

This race is more or less common in the various mountain ranges of Montana. Its general habits do not appear to be different from those of *D. obscurus*. The birds prefer rough and rocky ledges with only a moderate growth of fir to the denser forests. Occasionally they are found away from the mountains in scattered clumps of fir growing on the high bluffs or growing on some of the streams. Their "tooting" is a low, muffled sort of cooing, uttered without vigor or any apparent effort on the bird's part, which may be squatting on some rock at the time.

The eggs are cream color, marked with small dots of reddish-brown; average size 1.84 x 1.30. They are not distinguishable from those of *D. obscurus*, and the nesting habits are the same.

298. *Dendragapus canadensis* (LINN.) [472.]

Canada Grouse.

Hab. Northern North America, east of Rocky Mountains, from the Northern portions of New England, New York, Michigan and Minnesota to Alaska.

Known as the Spruce or Wood Partridge, Canada, Black or Spotted Grouse, and found in all favorable localities, especially the spruce forests and swamp regions from Northern United States northward, as far as the woods extend in the Arctic regions, and it has been found breeding in Northern Alaska. Audubon found it breeding in the vicinity of Eastport, Maine, in the interior recesses of almost impenetrable woods of hackmatack or larches. He was informed that the birds breed in the neighborhood about the middle of May, which is a month earlier than they do in Labrador. In the nesting season the males produce the same well-known and peculiar drumming as does the Ruffed Grouse. The female constructs a nest of a bed of dry twigs, leaves and mosses, and is usually carefully hidden, on the ground, under low horizontal branches of fir trees; it is generally placed in quiet and swampy localities.

The eggs are of a buffy or reddish brown color, irregularly splashed, dotted and spotted with different tints of brown; eight to

fourteen in number; average size of ten eggs is 1.70 x 1.20. The shape is characteristic, being like those of the Ptarmigan in form.

Mr. J. Parker Norris has sent me the following interesting account of the breeding of the Canada Grouse in captivity. It forms the basis of an article which is shortly to appear in *The Ornithologist and Oologist*:

"Mr. Watson Bishop, of Kentville, N. S., wrote me that it is almost impossible to find the nest of this species in its wild state, and being desirous of obtaining some of their eggs, he built an enclosure about thirty feet square, and high enough to walk about in, out of strips of board three inches wide, leaving spaces of about two inches between them to let in light and air. He then caught six hens and one cock. They became very tame in the course of time, and seemed perfectly satisfied with their new home. They did not appear frightened when Mr. Bishop went in to feed them, and came around him just like domestic fowls.

"The male bird strutted before the hens after the manner of birds of this family, and in course of time the hens began to lay. Separate compartments were furnished them, and the clutches were one of sixteen, one of fifteen, two of thirteen, one of eleven and one of eight eggs.

"Mr. Bishop very kindly presented me the set of eight eggs, and they are now in my cabinet. They closely resemble the eggs figured by Mr. Capen in his *Oology of New England*, but the ground color is of a more reddish tint. Regarding the other sets Mr. Bishop says:

"The set of sixteen are more rounded. The largest egg measures 1.71 x 1.26, the next largest, 1.67 x 1.26, and the smallest, 1.60 x 1.24. The ground color is of a deep cream tint, thickly spotted. The set of fifteen have a much deeper ground color, inclining to buffy red, and are also thickly spotted with deep red. The largest is 1.75 x 1.24, the smallest, 1.73 x 1.24, and they are more pointed at the smaller end than the preceding set. One set of thirteen was laid by a young hen, and measure: Largest, 1.71 x 1.23; smallest, 1.60 x 1.28. They are very even in size, and ground color, which is of a deep cream; but the spotting varies in intensity. The other set of thirteen measure: Largest, 1.85 x 1.22; smallest, 1.78 x 1.21, and are quite pointed. Ground color not as dark as the set of eight, and they are finely dotted all over. When first laid the colors are easily rubbed off.

"They are very handsome eggs, and Mr. Bishop is certainly to be congratulated on the success of his experiment."

299. *Dendragapus franklinii* (DOUGL.) [472a.]**Franklin's Grouse.**

Hab. Northern Rocky Mountains, west to the Pacific coast; chiefly north to the United States.

This bird is held by some authorities as a mere variety of *D. canadensis*. It is confined to the territory between the Rocky Mountains and the Pacific coast, chiefly in British America. Its habits in all respects are identical with those of *canadensis*. The nest is made on the ground, of dry leaves and grass, often at the foot of decayed stumps, or by the side of fallen timber in dense mountain woods. The eggs average in size 1.68 x 1.24.

300. *Bonasa umbellus* (LINN.) [473.]**Ruffed Grouse.**

Hab. Eastern United States, south to North Carolina, Georgia, Mississippi and Arkansas.

The Ruffed Grouse, "Pheasant" or "Partridge," is a noted game bird distributed in wooded districts throughout Eastern United States. At the limits of its habitat it is found in several geographical races as given below.

Its habits in many respects differ from those of the Prairie Hen; the latter is found on open plains, while the Grouse is rarely met with there. The food of the two species is very similar, making the difference in their respective abodes quite striking. The well-known drumming of the male birds is made during the love season, which commences in March. The sound is produced by the bird while standing on a fallen log or elevated rock in the most retired portion of the woods; the wings are lowered, tail expanded, the neck contracted, and the entire body seems inflated. The tufts of neck feathers are elevated, the bird all the while strutting about in the most pompous manner possible to imagine, striking the sides of his body with rapid strokes of his wings. These become so rapid that the sound thus produced resembles the runblings of remote thunder, and the sounds always seem nearer than they really are.

Under favorable circumstances this Grouse not infrequently rears two broods between the first of April and the middle of October. The nest is usually situated at the border of a large woods in the midst of dense undergrowth, often in a thicket, not far from the road-side, and very frequently the birds venture to construct it in a small woods adjoining a farm house. The position of the nest is on the ground beside a log or stump, or in a brush-heap, or under the branches of a fallen tree. It is constructed of decayed leaves, a few feathers, roots, etc. From six to fifteen eggs are deposited, usually ten or twelve; they are of a cream color of various shades, sometimes

so dark as to be nearly brownish, and in others the surface is almost milk-white. They are often stained in wet weather by the leaves upon which they lie, and are sometimes faintly blotched or speckled with shades of brown.

Mr. L. Jones, of Grinnell, Iowa, writes that the eggs in that vicinity are deposited about May first.

Ten eggs measure 1.64 x 1.10, 1.51 x 1.13, 1.54 x 1.13, 1.54 x 1.14, 1.51 x 1.12, 1.56 x 1.13, 1.53 x 1.13, 1.55 x 1.14, 1.53 x 1.12, 1.57 x 1.14.

300a. *Bonasa umbellus togata* (LINN.)

Canadian Ruffed Grouse.

Hab. Eastern Oregon and Washington Territory, east to Moose Factory, Nova Scotia, Maine, etc.

Eggs supposed to belong to this darker colored variety of Ruffed Grouse in my collection from Northern Maine do not differ from those of *B. umbellus*.

300b. *Bonasa umbellus umbelloides* (DOUGL.) [473a.]

Gray Ruffed Grouse.

Hab. Rocky Mountain Region north to Alaska, east to Manitoba.

The upper parts of this bird are mostly or entirely grayish, and the tail is always of a gray color. It is found in the wooded districts of the Rocky Mountain region of the United States, and as far north as the Yukon Valley in Alaska, in British America, east to Manitoba.

Captain Goss has a set of five eggs of this bird taken at Estes Park, Colorado, May 28, 1884. They are creamy buff; some of the specimens are almost or quite immaculate, others are faintly and sparingly spotted with lilac brown. The eggs in this set are smaller in size and less spotted than the usual spotted examples of *B. umbellus*, and unless closely examined the markings would scarcely be noticed. These eggs were taken from a nest on the ground; the sizes are as follows: 1.47 x 1.11, 1.45 x 1.12, 1.44 x 1.12, 1.42 x 1.15.

300c. *Bonasa umbellus sabini* (DOUGL.) [473b.]

Oregon Ruffed Grouse.

Hab. Northwest coast, from Northern California to British Columbia.

This sub-species resembles *B. umbellus*, but the upper parts are darker rusty-brown; the tail is also usually deep rusty color, rarely grayish. It is known as the Red Ruffed Grouse.

Mr. Norris has a set of eggs of this bird which are spotted. Six eggs collected in Coos county, Oregon, April 28, 1880, are in my collection. Their color is a rich creamy-white, unspotted. The nest was a hollow of the ground, made by the bird, and lined with leaves; it was situated partly under a fallen tree, and quite hidden by a growth of bushes. The inside diameter of the nest was about six inches, and

the depth about four. The eggs exhibit the following dimensions: 1.55 x 1.16, 1.55 x 1.16, 1.55 x 1.15, 1.56 x 1.16, 1.57 x 1.17.

301. *Lagopus lagopus* (LINN.) [474.]

Willow Ptarmigan.

Hab. Northern portions of Northern Hemisphere; in North America south in winter to Sitka, northern New York, etc.

This Ptarmigan is distributed in summer throughout Arctic America. It breeds abundantly in the valleys of the Rocky Mountains on the Barren Grounds and along the Arctic coasts. The winter dress of the bird is snow white, with the central tail feathers black, tipped with white. In summer, the head and neck are yellowish-red, back black, barred rather finely with yellowish-brown and chestnut; most of the wings and under parts remain white as in winter. Large numbers of the Willow Ptarmigan are said in the winter to shelter in willow thickets and dwarf birches on the banks of lakes and rivers, where they feed on the buds of the smaller shrubs which form their principal food at that season. Their favorite resorts in daytime are barren, sandy tracts of land, but they pass the nights in holes in the snow. When pursued by sportsmen or birds of prey they are said to often dive into the loose snow and work their way beneath its surface.

Mr. MacFarlane found nests of this species in the Anderson River region early in June, and as late as June 24th. Others were found on the banks of the Swan River as late as June 27th, containing large embryos. A nest observed July 10th contained ten perfectly fresh eggs, and another set of eggs was examined July 22, the contents of which were slightly developed. The nests made on the ground were mere depressions, generally lined with leaves, hay, and a few feathers from the birds themselves. The same nest is often occupied in successive seasons. The largest number of eggs taken by Mr. MacFarlane was ten, but the female is said to lay as many as sixteen. A few of this species breed in various parts of Alaska. Mr. Dall took eggs near the mouth of the Yukon in the latter part of June. The eggs have a ground color varying from pale yellowish-buff to deep chestnut-brown, more or less sprinkled, speckled, spotted or marbled with rich brown or black. Average size 1.78 x 1.25.

302. *Lagopus rupestris* (GMEL.) [475.]

Rock Ptarmigan.

Hab. Arctic America in general, except northern extremity of Peninsula of Labrador and region thence northward, Greenland and the Aleutian Islands; southeastward to Gulf of St. Lawrence, Island of Anticosti.

The Rock Ptarmigan is somewhat smaller than the foregoing and

the summer and winter dress is similar. The general mode of living is said to be the same, but it does not retire very far into wooded districts in winter, frequenting the more open woodland on the border of lakes, especially on the skirts of the Barren Lands. Mr. MacFarlane found this species breeding in the vicinity of Fort Anderson, incubating in June, and young birds of goodly size were observed June 30. The nests were placed on the ground and were of the same composition as those of *L. lagopus*. The eggs with certainty cannot be distinguished from those of the Willow Ptarmigan, but are described as usually less heavily spotted or less densely marked — averaging lighter in color and less in size, 1.70 x 1.18.

302a. *Lagopus rupestris reinhardti* (BREHM.)

Reinhardt's Ptarmigan.

Hab. Greenland and western shores of Cumberland Gulf, and northern extremity of Labrador.

The general appearance, summer dress, etc., of the Greenland Ptarmigan is similar to that of the foregoing. It is found in Greenland and the islands on the western side of Cumberland Gulf and Northern Labrador. The eggs are described as being similar to those of *L. rupestris*, averaging 1.65 x 1.17.

304. *Lagopus leucurus* SWAINS. [476.]

White-tailed Ptarmigan.

Hab. Alpine summits of the Rocky Mountains, south to New Mexico, north into British Provinces; west to the higher ranges of Oregon, Washington Territory, and British Columbia.

The Rocky Mountain Snow Grouse inhabits the Alpine regions of Western North America from British America south to New Mexico. In summer it is found on the mountain ranges from the timber line to the highest peaks; at this season, the upper parts of the plumage of this species are minutely marked with black, white, grayish-brown and tawny, with the tail, wing and lower parts white. In winter the plumage is entirely white. Mr. Dille informs me that it breeds commonly in Lamar county, Colorado, making the nest in some cavity among rocks above high timber line. The nest is scantily made of a few grasses. The eggs are from eight to fifteen in number, generally eight or nine, creamy-ground color, marked very finely over the entire surface with umber-brown. The surface is often almost entirely hidden by the heavy markings. Average size 1.68 x 1.15. Mr. Dille states that the eggs are deposited early in June.

305. *Tympanuchus americanus* (REICH.) [477.]

Prairie Hen.*

Hab. Prairies of the Mississippi Valley, south to Louisiana and Texas, west to Middle Kansas, Nebraska and Dakota; north to Wisconsin, east to Indiana, Ohio and Kentucky.

The Prairie Hen or Pinnated Grouse is a well known game bird,

* The Lesser Prairie Hen, *Tympanuchus pallidicinctus* (Ridgw.) inhabits the warmer and dryer regions of the Southwestern Prairies—border of the Great Plains, from Texas northward.

once dispersed throughout the United States; at present it is found especially common in Indiana, Illinois, Iowa, Missouri, Arkansas, Texas and Louisiana, Middle and Eastern Kansas and Nebraska. It is a rare resident in Northwestern Ohio, and probably breeds. In Kansas the birds begin laying the last of April. The nest is placed on the ground in the thick prairie grass, and at the foot of bushes on the barren ground; a hollow is scratched in the soil and sparingly lined with grasses and a few feathers. The eggs are usually eight to twelve in number, but frequently more are laid. Mr. L. Jones states that in Iowa high or low lands are resorted to for breeding grounds, and little or no attempt is made at concealing the nest.

The eggs are deposited by May 1st. In Nebraska the eggs are laid in the latter part of April. These are light drab or dull buffy, sometimes with an olive hue, and occasionally sprinkled with brown; their form is rather oval; average size 1.68 x 1.25.

306. *Tympanuchus cupido* (LINN.) [477, *part.*]

Heath Hen.

Hab. Island of Martha's Vineyard, Mass.

The light colored Prairie Hen of the Western prairies formerly had a smaller, darker, and redder eastern representative, which was originally distributed throughout Long Island, New Jersey, Eastern Pennsylvania and Virginia. Perhaps the last of this race still linger at Martha's Vineyard, Massachusetts, and a wide range of territory now separates it from its Western cousins.

Mr. Brewster states that it is common on Martha's Vineyard, where it is confined to the woods, haunting oak scrub by preference, feeding largely on acorns. Being strictly protected by law, there is, according to the best evidence at hand, no present danger of the colony being exterminated.*

The eggs are described by Mr. Capen from a manuscript by Mr. Maynard: "They are regularly oval in form, all the specimens being quite uniform in this respect. The color is a yellowish-green of a peculiar shade, quite different from the more decided greenish-brown seen in the Western species, from which the eggs now at hand also differ in being unspotted. There is little variation in the dimensions of all six, the average measurements being 1.72 by 1.27 inches." Mr. Capen, in his beautiful work, also figures an egg from this set.†

* See William Brewster's article on The Heath Hen in Massachusetts: *Auk*, II, 80-84.

† *Oology of New England*: Page 82, Plate XXIV, Fig. 4.

308. *Pediocætes phasianellus* (LINN.) [478.]**Sharp-tailed Grouse.**

Hab. British America, north to Fort Simpson, Fort Resolution and the regions about Great Slave Lake, south to Moose Factory, Lake Winnipeg and northern shore of Lake Superior.

The Sharp-tailed Grouse, in its various forms, inhabits the western and northwestern plains of the United States and the northern portions of North America, frequenting the grassy prairies and the wooded districts. It is commonly called Pin-tail Grouse.

The present species is said to be especially abundant in the territory between Great Bear Lake, Fort Simpson, and the country bordering Great Slave Lake.

It is found in the open glades or low thickets on the borders of streams and large bodies of water, this being the case where the forests are partially cleared. At all seasons it is found in small flocks, in the winter perching on trees, but keeping to the ground in the summer.

In winter it often hides in the deep snow, and works its way under the surface with ease, feeding as it progresses on the buds of the willows, larches, aspens, etc. Its food in the summer and autumn is principally berries. The eggs are deposited in the first part of June in a nest on the ground, made of coarse grasses and lined with feathers. The eggs are of a dark, tawny brown, minutely dotted or speckled with darker spots of brown.

The number laid ranges from six to fourteen, usually twelve. The average size is 1.75 x 1.25.

308a. *Pediocætes phasianellus columbianus* (ORD.) [478a.]**Columbian Sharp-tailed Grouse.**

Hab. Plains of Northwestern United States.

Dr. Coues says: The Pin-tail Chicken inhabits the western portions of Minnesota, a small part of Iowa, all of Dakota, thence diagonally across Nebraska and Kansas to Colorado in the Laramine and Upper Platte regions; from thence westward in suitable localities to the Sierra Nevada and Cascade ranges; northern limit to be conventionally established along the northern border of the United States, beyond which it shades into the true *phasianellus*. In fine, this is the prairie chicken of the whole Northwest; usually occurring where *C. cupido* does not, the two overlap to some extent.*

In some portions of Manitoba it is said to be very abundant, living exclusively on the open prairie in summer, and exclusively in the wooded districts in winter. The nest is placed on the ground, composed of a few dry grasses arranged in a circular form. The bird is esteemed as highly for the table as the Prairie Hen.

* Key to North American Birds, pp. 582-583.

The eggs are light clay to a dark rusty-brown, uniformly speckled with fine dottings of darker brown; from six to twelve in number; average size 1.70 x 1.25.

308*b*. *Pediocætes phasianellus campestris* RIDGW.

Prairie Sharp-tailed Grouse.

Hab. Plains and prairies of the United States east of the Rocky Mountains, south to eastern New Mexico.

Another variety of the Sharp-tailed Grouse, inhabiting the great plains of the United States east to Wisconsin and northern Illinois, west to eastern Colorado and south to eastern New Mexico. The ground color of the plumage in this bird is more rusty, or ochraceous, than in *P. p. columbianus*, that of the latter species being buffy-grayish or pale grayish-clay color above, with little or no rusty tinge. Professor Ridgway gives the average measurements of the eggs as 1.66 x 1.23.

309. *Centrocercus urophasianus* (BONAP.) [479.]

Sage Grouse.

Hab. Sage-bush plains of the Rocky Mountain plateau, north into British America, south to New Mexico, Nevada, Eastern California and Washington Territory.

The Sage Cock, Sage Grouse, Sage Hen, or Cock of the Plains, as it is variously called in the west, is principally found in what are known as the sage-bush regions of Montana, Wyoming, Colorado, Utah, Nevada, Oregon, Idaho, Arizona, eastern California and other western States and Territories, where the march of civilization has not exterminated their favorite food, the leaves of the wild sage-bush, which cover large tracts of western country. This is the natural home of the bird. It is the largest of American grouse. The color of the bird is so nearly like that of the ground and sage-bush that it is difficult to detect its presence. In summer their food is sage leaves, berries and insects, but their sole food in winter seems to be sage leaves. The male is a little larger than the female; their weight is about ten pounds, and that of the female seven, live weight. They roam everywhere in winter in large flocks, the snow quenching their thirst instead of the water of the streams which supply them in the summer, and along which they scatter in small bands at this season. The males flock together during the season of incubation; the females always remaining by themselves to rear their young.

Mr. G. G. Mead states that the eggs in Wyoming are deposited about the 15th of May. W. S. Rougis reports them in the same Territory as being laid as early as the latter part of April or in May, and that the nests are mere hollows scratched in the ground under sage-bushes. Mr. Rougis found the Sage nest complement to vary from ten to

fourteen eggs, and varying in shape from oval to that of the usual shape of hen's eggs, and some specimens taper to a smaller point at the smaller end than do those of the domestic fowl. They are of a light greenish-drab or pale olive-buff or a drab shaded with buff, thickly freckled with small rounded spots of reddish-brown and dark chestnut, occasionally with large blotches and spots. Mr. Rougis gives the measurements of six specimens as follows: 1.75 x 1.33, 1.63 x 1.17, 1.69 x 1.18, 1.63 x 1.17, 2.25 x 1.51, 2.23 x 1.48.*

A set of eggs in the cabinet of J. Parker Norris were taken May 26, 1881, near Fort Steele, Wyoming Territory. The nest was on the ground, under a sage bush. The eggs are of a greenish-brown, speckled and spotted with Vandyke brown. They are of an elongate-ovate shape, and measure 2.28 x 1.58, 2.25 x 1.48, 2.18 x 1.52, 2.14 x 1.51, 2.23 x 1.50, 2.16 x 1.54, 2.29 x 1.53, 2.18 x 1.52, 2.13 x 1.50, 2.12 x 1.48.

310. *Meleagris gallopavo* LINN. [470a].

Wild Turkey.

Hab. Eastern United States, north to southern Canada, south to Florida and eastern Texas, west to the Great Plains.

This is the bird which so very much resembles the domestic turkey, but is more brilliant in color. It is a constant resident in suitable localities throughout Eastern United States. It occurs as far north as Canada; is probably extinct in New England, and is found as far northwest as the Missouri river, and southwest as Texas. But this grand bird is rapidly becoming exterminated, not only as it is in New England, but in other sections of the country. In Ohio it was formerly an abundant resident, breeding throughout the State; now quite unknown in the more thickly settled portions, but still common in some of the northwestern counties. Dr. Kirtland (1850) mentions the time when Wild Turkeys were more common than tame ones are now.

Mr. Thomas McIlwraith, in his admirable work on the Birds of Ontario, says that within the recollection of people still living, Wild Turkeys were comparatively common along the southwestern border of Ontario, and that the day is not far distant when this bird will be sought for in vain in the province.†

Mr. Edwin C. Davis reports the Wild Turkey to be very common in the vicinity of Gainesville, Texas, hundreds being brought to market and sold during the winter months. The nests of this bird, he says, are very difficult to discover, as they are made on the ground, midst tall, thick weeds or tangled briars. The female will not leave the nest

* Young Oologist, Vol. I, pp. 76-77.

† The Birds of Ontario: pp. 130-130.

until almost trodden upon. Mr. Davis states that when the eggs are once touched the female will abandon her nest.

The eggs are rich, dark cream color, thickly sprinkled with rounded spots of rusty-brown or umber. The number laid varies from nine to eighteen, commonly nine to twelve. Some writers say ten to twenty and twenty-four, but I have never seen this number in a set. Four typical specimens collected in Morrow county, Ohio, May 10, 1884, measure 2.54×2 , 2.56×1.95 , 2.56×1.97 , 2.69×1.94 . The average size of a large series, 2.55×1.80 .

Mr. J. Parker Norris has two sets of eggs of this bird in his cabinet. One set was taken May 22, 1888, in Manatee county, Florida. The nest was under a pile of brush, near a swamp. It was made of grass and leaves, and there were also a few feathers. The eggs were twelve in number, and the incubation very slight. They are of a deep cream color, thickly speckled with russet. They measure 2.45×1.79 , 2.55×1.86 , 2.55×1.86 , 2.38×1.80 , 2.57×1.86 , 2.54×1.80 , 2.53×1.90 , 2.55×1.83 , 2.50×1.91 , 2.36×1.81 , 2.34×1.75 , 2.52×1.78 .

The other set were collected in Ripemokee Swamp, Georgia, on April 25, 1886. The nest was in a brush heap, and was constructed of grass, leaves and twigs. The eggs were twelve, and were fresh. They are of a deep cream color, faintly speckled and spotted with clay color. The whole effect is much lighter than in the other set. They measure 2.58×1.85 , 2.61×1.86 , 2.64×1.87 , 2.50×1.87 , 2.61×1.93 , 2.55×1.91 , 2.64×1.90 , 2.55×1.90 , 2.66×1.90 , 2.63×1.90 , 2.78×1.92 , 2.62×1.91 .

Both sets are quite pointed.

310a. *Meleagris gallopavo mexicana* (GOULD.) [470.]

Mexican Turkey.

Hab. Table-land of Mexico, north to the southern border of the United States; western Texas to Arizona.

This Turkey is found in western Texas, New Mexico, Arizona, and southward; in suitable localities it is abundant. In various mountain ranges throughout New Mexico it is very common. On the approach of winter they leave their summer haunts and travel down the foot hills and the mesas, where they remain until the snow disappears, when, like the deer, they return. Mr. Scott states that in the pine woods of the Catalina mountains of Arizona this Turkey was very common late in November, 1885, though snow covered the ground. The bird, however, from what he could learn, has already decreased in number in most localities, and to have become exterminated in others where it was formerly abundant.*

Mr. George B. Sennett found this Turkey common on the Lower

* Auk, Vol. III, p. 389.

Rio Grande of Texas, nesting in the dense woods. The first set of eggs, twelve in number, were taken April 24, contained young chicks peeping in the shell. A set of fifteen obtained April 26 were fresh.*

The nesting habits are the same as the common wild turkey. The eggs are described as resembling those of the domestic turkey in ground color and markings; dark buff or creamy-white, more or less thickly sprinkled with spots of light and dark umber-brown; they measure 2.40 x 1.80. The average size of twenty-eight eggs, as given by Mr. Sennett, is 2.43 x 1.86; the largest, 2.50 x 1.90; the smallest 2.33 x 1.72.

311. *Ortalis vetula maccalli* BAIRD. [469]

Chachalaca.

Hab. Valley of the Rio Grande, southward into Mexico.

The Texas Guan, or Chachalaca, is a remarkable bird, inhabiting the warm tropical regions of America. It measures from twenty-two to twenty-four inches in length, of which the tail measures from nine to eleven. Dr. Merrill states that this is one of the most characteristic birds of the Lower Rio Grande region. "Rarely seen at any distance from woods or dense chaparral, they are abundant in those places, and their hoarse cries are the first thing heard by the traveler on awaking in the morning. During the day, unless rainy or cloudy, the birds are rarely seen or heard; but shortly before sunrise and sunset, they mount the topmost branch of a dead tree, and make the woods ring with their discordant notes. Contrary to almost every description of their cry I have seen, it consists of three syllables, though occasionally a fourth is added. When one bird begins to cry, the nearest bird joins in at the second note, and in this way the fourth syllable is made; but they keep such good time that it is often very difficult to satisfy one's self that this is the fact."† The Mexican name, Chachalac, means a noisy person or bird, is derived from the discordant cries of this species. The quality of these notes may be imitated by putting the most stress upon the last two syllables. The compass and harshness of the cries are said to be almost equal to that of the guinea fowl. The birds are said to be easily tamed, and to cross with the domestic fowl. Dr. Merrill remarks that they are much hunted for the Brownsville market, but the flesh is not particularly good, and when domesticated the birds become troublesomely familiar, and are decided nuisances when kept about the house.

* Further notes on the Ornithology of the Lower Rio Grande of Texas, from observations made during the spring of 1878. By George B. Sennett. Edited, with annotations, by Dr. Elliott Coues, U. S. A.; pp. 247-248. Extracted from the Bulletin of the Geographical Survey, Vol V, No. 3; Washington, November 30, 1879. Author's edition.

† Notes on the Ornithology of southern Texas.

Mr. Sennett states that this bird does not breed in communities, but in isolated pairs, and from all accounts, raises but one brood in a season, unless the nest is despoiled, when the female will lay another clutch, which almost invariably consists of three, rarely less. Mr. Norris has a set of four eggs, and reports that Mr. Thos. H. Jackson has received several sets of the same number from southern Texas. Mr. Sennett obtained fresh eggs on the Rio Grande, April 10th, and on the 20th sets were generally full and fresh, after which time they contained embryos. The nests are shallow structures, often made entirely of Spanish moss, and are placed on horizontal limbs, a few feet from the ground. The eggs are of a buffy-white, thick-shelled and roughly granulated; they are large for the bird; sizes range from 2.18 to 2.35 long by 1.55 to 1.60 broad. The set of four eggs in Mr. Norris' collection was taken June 2, 1886, in Camargo county, Mexico. They are of a dull, yellowish-white, and measure 2.30 x 1.61, 2.30 x 1.61, 2.21 x 1.56, 2.33 x 1.57. The small ends of these specimens are quite pointed.

312. *Columba fasciata* SAY. [456.]

Band-tailed Pigeon.

Hab. Western United States, from the Rocky Mountains to the Pacific coast, from Washington Territory and New Mexico south, through Mexico to the highlands of Guatemala.

The Band-tailed, or White-collared Pigeon, is found from the Rocky Mountains westward to the Pacific. It is common, but irregular in distribution. In Washington county, Oregon, Mr. Anthony records this Pigeon as a common summer resident, and that south of Beaverton is a large spring, whose waters contain some mineral which has a great attraction for these birds, and here they are always to be found in large numbers. Mr. Scott states that this species is common in the Santa Catalina mountains in Arizona, breeding in July. He met with it commonly in May and June, as low down as 3,500 feet, feeding on wild mulberries. It was not uncommon in the pine region about the middle of April.*

This is an attractive bird, about the size and possessing many habits of the domestic pigeon. It sometimes congregates together in flocks, even while breeding, and nests in trees and bushes along the banks of streams, or in the thick forests near water. The nest is a mere platform of sticks, and the eggs are also placed on the ground without any nest, which is sometimes the case with the Mourning Dove (*Z. macroura*).

The eggs are two in number, equal-ended, glistening-white, with an average size of 1.50 x 1.20.

* Auk, Vol. III, p. 421.

313. *Columba flavirostris* WAGL. [457.]**Red-billed Pigeon.**

Hab. Southern border of the United States from the Rio Grande Valley, Arizona, Mexico and Lower California south to Costa Rica.

This large and handsome Pigeon is common in the valley of the Rio Grande and southward. In some localities on the Rio Grande in Texas it is abundant during the summer months. Dr. Merrill found it not uncommon about Fort Brown, but more plentiful higher up the river. It loves the deep, dense woods, where it can dwell in quiet and retirement. The nests are frail platforms of twigs and grasses, such as are usually built by other pigeons, placed in trees and bushes.

Mr. George B. Sennett describes a nest which he found April 9th, near Hidalgo, on the Rio Grande. It was placed in a thicket, about eight feet from the ground, made of twigs, was frail and saucer-shaped and contained a single young, nearly fledged. He states that this bird lays several times in a season. Nests were found containing eggs and young in all stages of development, but in no case did a nest contain more than one egg or young. Mr. Sennett gives the average size, taken from a large series, as 1.55 x 1.10, the length varying from 1.60 to 1.45, and the breadth from 1.18 to 1.03*. The eggs are pearly white.

314. *Columba leucocephala* LINN. [458.]**White-crowned Pigeon.**

Hab. Greater Antilles, Bahamas and Florida Keys.

The White-crowned Pigeon occurs in summer on the Florida Keys, and it breeds abundantly on some of the smaller islands; it is an abundant resident species in the Bahamas and West Indies. This Pigeon, according to Audubon, arrives on the southern Florida Keys about April 20th, or not until May first. The birds were shy and wary on account of the war waged against them, their flesh being esteemed for its fine flavor. Their shyness only partially abated during the breeding season and they would silently slide from their nest when sitting, and retreat to the dark shades of the mangroves. The nest is built in low trees and bushes, composed of twigs carefully arranged, with little or no lining of grasses. It is, on the whole, a bulky structure for a pigeon. These birds often breed in numbers, nesting in trees, some at high elevations, others in low mangrove bushes and the nests resemble that of the Passenger Pigeon, but are said to be more compact and better lined. The eggs are two in number, oval in form, and opaque-white with a very smooth surface; the average size is 1.41 x 1.02.

* Further notes on the Ornithology of the Rio Grande of Texas.

315. *Ectopistes migratorius* (LINN.). [459.]**Passenger Pigeon.**

Hab. Deciduous forest-region of Eastern North America, west casually to Washington Territory and Nevada.

The Wild Pigeon wanders in search of food throughout all parts of North America, but chiefly temperate North America east of the Rocky Mountains. At times it is abundant in particular districts. The greatest roosts and flights are now said to be seen in the Upper Mississippi Valley. Of late years it has become rather scarce in localities where it was once formerly abundant; and, in fact, in many places it is now seen only occasionally in small flocks of a dozen or fifteen. Wilson's and Audubon's graphic accounts of the "congregated millions" which they saw in Ohio, Indiana and Kentucky seem hardly credible to those who have not seen them. The extensive forests which once served as breeding and feeding grounds have been partially or wholly destroyed, and we are no longer favored with the sublime sights of immense, unbroken, and apparently limitless flocks. Until about 1855, these Pigeons were extremely abundant in Central Ohio, having at that time a roost and breeding place near Kirkersville, Licking county, and large numbers were to be seen from sunrise till nine o'clock and after, flying westward from the roost, and in the afternoon about four o'clock till sundown returning. At these hours they were never out of sight, and often dozens of flocks were in sight at once. Dr. Kirtland states that near Circleville, in 1850, one thousand two hundred and eighty-five were caught in a single net in one day, and the average price for the birds in Columbus was five or six cents per dozen. The Wild Pigeon congregates in vast communities for the purpose of breeding, nesting in trees and bushes, frequently at a considerable height from the ground, and often as many as fifty and a hundred nests have been observed in a single tree. The nest is a mere platform of sticks. The eggs are usually one, never more than two in number, pure white, and broadly elliptical in shape; average size, 1.50 x 1.03.

A set of two eggs of this bird, taken in 1874, in Iowa, are in the collection of J. Parker Norris. They are dull white, and measure 1.50 x 1.01, 1.40 x .98.

316. *Zenaidura macroura* (LINN.). [460].**Mourning Dove.**

Hab. Whole of temperate North America from Southern Maine, Canada and Oregon, south to Panama and the West Indies.

The Carolina Dove, also called Turtle Dove, is one of our best known and familiar birds. Its gentle disposition, its sweet but mournful cooing, have made it the typical sad-toned singer in poetry and song.

The Turtle Dove is distributed throughout temperate North America; it is to be met with everywhere, both in woodland and in open places. It is particularly fond of feeding in country roadways. During the breeding season they are found in pairs, but at other times are highly gregarious, though flocks of them never attain the size of those of the Wild Pigeon. The nest is placed on the horizontal branches of trees, on stumps, on the top rail of old snake fences, on rocks, in bushes, and in treeless regions the nest is placed on the ground. It varies in construction with its location. When found in small branches of trees it is made of a few sticks, somewhat after the style of the Cuckoo's nest, but if on a large limb or stump, it is often but a rim of twigs sufficient to retain the eggs; when on the ground, a few straws and twigs are used to indicate the nest. The Carolina Dove rears two, sometimes three broods in a season. It begins to nest early. I have taken eggs April 10th; the late Dr. Wheaton found the nest with young as early as the middle of April. Breeding usually continues until September. Dr. Jones states that he had seen Doves sitting on fresh eggs in every month except December and January, and he has no doubt that they occasionally build nests and lay eggs in these months in mild winters.*

Two white eggs are laid; there are exceptional cases, however, where more are deposited. Mr. Norris has a set of three; Mr. L. Jones, of Grinnell, Iowa, writes that he has in his collection a set of four. Mr. P. W. Smith, of Greenville, Ill., records several sets of three and four; two sets taken from old robins' nests. He also found a Brown Thrasher's nest containing one egg of the Thrasher and two of the Doves.† The eggs are elliptical in shape and average 1.12 x .82.

317. *Zenaida zenaida* (BONAP.) [462.]

Zenaida Dove.

Hab. Florida Keys, Bahamas, Cuba, Jamaica, Porto Rico, Santa Cruz, Sombrero and coast of Yucatan.

According to Audubon's observations, this species makes its appearance on the islands around Indian Key, Fla., about April 15, increasing in numbers until October, when they all departed for the West Indies, where they are the most numerous. Egg laying is begun about the first of May. In Jamaica this species is known as the Pea Dove and in Santa Cruz as Mountain Dove. Its general habits are similar to those of the Mourning or the Ground Dove, and like the latter species it is more terrestrial in its habits. It nests indiscriminately on the ground, in trees or in low bushes. In trees or bushes the nest is a slight platform of twigs. Audubon states that this species breeds in

* Illustrations of the Nests and Eggs of Birds of Ohio, p. 97.

† Ornithologist and Oologist, XI, p. 28.

various keys east of Florida, which are covered with grass and low shrubs, placing the nest between tufts of grass or on the ground with little concealment. It is built of dry leaves and grass imbedded in a hollow scooped in the sand. It is said to be more compact than the nest of any other pigeon. The eggs are one or two in number, white, with a very smooth surface; size, 1.19 x .94.

318. *Egyptila albifrons* (BONAP.) [463.]

White-fronted Dove.

Hab. Valley of the Lower Rio Grande in Texas, southward through Mexico to Guatemala.

Mr. George B. Sennett added this Dove as a new species to the fauna of the United States in 1877; the first specimens being taken in the vicinity of Hidalgo, on the Rio Grande in Texas. Dr. Merrill notes it as not rare in the vicinity of Fort Brown, being shy and not very often seen. Mr. Sennett states that in its general habits this bird is quiet and not easily alarmed; it frequents the high branches of tall trees, associating with the white-winged dove and is less numerous than the red-billed pigeon. By its peculiar note—a low, short cooing—it is easily distinguished from all other species. A nest was found situated in the forks of bushes, about five feet from the ground, was flat and quite large for a pigeon's nest, and composed of the dead branches, twigs and bark of pithy weeds.

Dr. Merrill found a nest on June 8, 1878, which was about seven feet from the ground, supported by the dense interlacing tendrils of a hanging vine, growing on the edge of a thicket. This nest contained two eggs which were quite fresh; sizes 1.16 x .86 and 1.19 x .89, respectively. These are described as a strong olive-buff color. Mr. Sennett describes them as of a light drab, or light olive drab, and gives the measurements of four specimens as follows: 1.14 x .89, 1.12 x .88, 1.16 x .83, 1.15 x .85; averaging 1.14 x .86.

319. *Melopelia leucoptera* (LINN). [464.]

White-winged Dove.

Hab. Southern border of the United States (Texas to Arizona) and Lower California, southward to Costa Rica and the West Indies.

Dr. James C. Merrill mentions this as a very common species during the summer months in the vicinity of Fort Brown, Texas. The nests, he states, are, "as a rule, smaller and more frail than those of the Carolina dove, and the eggs have a decided creamy tinge, which is rarely lost after blowing, at least not for months. Thirty-four eggs average 1.17 x .88; extremes 1.30 x .95 and 1.05 x .80. The note is a deep sonorous *coo*, frequently repeated and heard at a great distance."

At Lomita Ranch on the Rio Grande, in Texas, Mr. Sennett found

this species to be more abundant than all the other pigeons combined, and when they have begun breeding, all day long the air is filled with the music of their cooing, drowning out the notes of most other birds. They are the last of the doves to come in the spring and leave about November. By the first of May eggs were found. Their color, Mr. Sennett describes, as varying from white to cream, the latter prevailing, and two is the number laid. From a large series the size averages 1.14 x .88; the largest, 1.22 x .93, the smallest, 1.05 x .88.

Two sets of the eggs of this Dove are in the cabinet of J. Parker Norris. One of two sets of eggs taken May 1, 1884, in Neuces county, Texas, measure 1.10 x .82, 1.10 x .81. The second set collected near Catulla, Texas, May 11, 1887, measure 1.05 x .78, 1.08 x .79, respectively.

320. *Columbigallina passerina* (LINN.) [465]

Ground Dove.

Hab. South Atlantic and Gulf States; Texas, New Mexico, Arizona and California, south to the West Indies and the northern portion of South America.

A diminutive Dove, measuring only six or seven inches in length. Abundant in Mexico, Yucatan, Central America and the West Indies. In the South Atlantic and Gulf States it is a common and familiar species, nesting indiscriminately on the ground, on stumps, on vines, bushes and young saplings. The nest is elevated sometimes as high as twenty feet, but usually from two to six feet above the ground, and is simply a frail structure of twigs, often containing pine needles. The breeding season in Georgia begins early in April, and fresh eggs may be found in May, June, and sometimes in July. Mr. Perry informs me that in the vicinity of Savannah he has taken fresh eggs as late as July 9th. Mr. Arthur T. Wayne took a set of two eggs near Charleston, S. C., October 19th, 1886; these contained small embryos and the parent bird was incubating.* This date, however, is exceptional. Mr. Walter Hoxie, of Frogmore, S. C., states that this species is called Mourning Dove by the natives, who used to have a superstition that any one who molested their nest would be "mourned to death" by the grief-stricken owners. The eggs are two in number, white or creamy in color; a large series averages .85 x .65.

321. *Scardafella inca* (LESS.) [466.]

Inca Dove.

Hab. Southern border of the United States (Texas to Southern Arizona) south to Mexico and Guatemala.

This species is known as the Scaled Dove; nearly all the plumage is marked with black crescentic-edged feathers, producing a scaly appearance. In various places in Southern Arizona, New Mexico, and

* Ornithologist and Oologist: Vol. XII, p. 7.

along the Rio Grande valley in Texas, this species is quite common during the summer months. Throughout Mexico and Yucatan it is very abundant, and is known as the Long-tailed Ground Dove. It is very tame and familiar, frequenting cultivated gardens about houses, and is said to live more on the ground than the so-called Ground Dove. Its cooing is coarse and tolerably loud. The nest of this species is built in bushes, vines and small trees similar to that of *Columbigallina passerina*; it is a mere platform of twigs. The eggs are invariably two in number, white, oval in shape, both ends being nearly equal; average size, .82 x .65.

[322.] *Geotrygon martinica* (GMEL.). [467].

Key West Quail-dove.

Hab. Key West, Florida, Hayti, Cuba, Bahamas.

A constant resident of the Bahamas, Cuba and Hayti. Audubon met with a few of this species on the island of Key West, Florida, but it is said not to have been observed there lately. According to Audubon, the movements and general habits of this species are similar to those of the Carolina Dove. The nest is described as formed of light, dry twigs; it is built in the branches of trees or in bushes, occasionally it is placed on the ground.

According to Mr. Audubon the eggs are two in number, pure white, and about the size of those of the White-crowned Pigeon.

[323.] *Starnœnas cyanocephala* (LINN.) [468]

Blue-headed Quail-dove.

Hab. Cuba and Florida Keys.

It appears that the Blue-headed Quail-dove has been found only by Audubon on the Florida Keys; it is resident in the Island of Cuba. It is a singular Dove, with the crown rich blue, bounded by black; a white stripe under the eye, extending under the chin; the throat is black, bordered with white. Length of bird about eleven inches.

The nest is described as being placed on trees and bushes, and composed of sticks carelessly arranged. The eggs are one or two in number, pure white; size about 1.40 x 1.05.

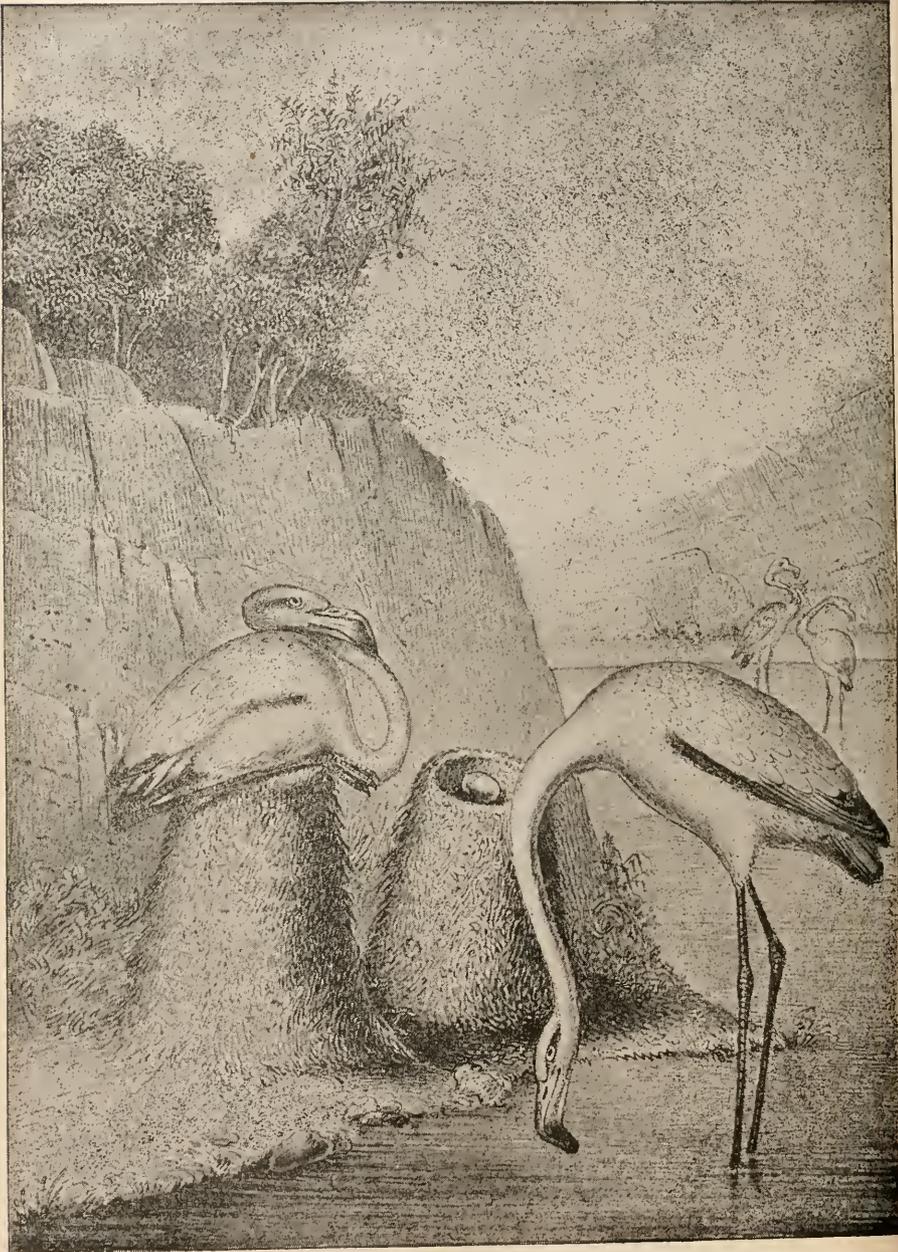
324. *Pseudogryphus californianus* (SHAW.) [453.]

California Vulture.

Hab. Pacific coast region of the United States, from Oregon southward, to the mouth of the Colorado River.

Concerning the California Condor or Vulture, Dr. Brewer remarks as follows: "The single species composing this very distinct genus belongs to Western North America, and so far as known, has the most restricted distribution of any large raptorial bird in the world. It is





FLAMINGOS AND NESTS.

(*Phenicopterus ruber.*)

remarkable for its very large size, all its dimensions nearly, if not quite, equaling those of the famed Condor of the Andes (*Sarcorhamphus gryphus*¹¹). This great bird has already become very much reduced in numbers and extinct in localities where it was formerly abundant; this is doubtless due to the indiscriminate use of poison which is placed on carcasses for the purpose of killing wolves and other obnoxious animals. Upon these poisoned remains the birds feed and perish. It is at present restricted to the area of the Pacific coast region as far north as the Columbia River in Oregon. South of this it is more common, and especially in the warm valleys of California. Here it is associated with the Turkey Buzzard, and the habits of both species are alike, often feeding together on the same carcass. Like the Turkey Vulture its flight is easy and graceful, sailing majestically with almost motionless wings, in wide circles at great heights, over a large space of territory, in search of food. The eggs are laid on the ground between old logs, in hollow stumps, in recesses or crevices among rocks, with little or no attempt at nest building. One or two eggs are laid, elongate-ovate in shape, and their color is described as plain, pale greenish-blue or grayish-white; average size 4.50 x 2.50.

325. *Cathartes aura* (LINN.) [454.]

Turkey Vulture.

Hab. Nearly all of temperate and tropical America from New Jersey, Ohio Valley, Washington Territory, Saskatchewan region, southward to Patagonia.

The common Turkey Buzzard inhabits the United States and adjoining British Provinces from the Atlantic to the Pacific, south through Central and most of South America, and is resident north to about 40°. Every farmer knows it to be an industrious scavenger, devouring at all times the putrid or decomposing flesh of carcasses. It is essentially gregarious, not only flying and feeding in company, but resorting to the same spot to roost; breeding also in communities and sometimes by single pairs; depositing its eggs on the ground, on rocks, or in hollow logs and stumps, usually in thick woods or in a sycamore grove, in the bend or fork of a stream. The nest is frequently built in a tree or in the cavity of a sycamore stump.

In the vicinity of Tampa, Florida, Mr. Stuart says the eggs of this bird are laid in February and March; in Indian Territory they are deposited in March, April and May. In Arizona and Colorado it nests in the latter part of April and in May. Mr. Shields states that in the region of Los Angeles, Cal., this bird begins laying about April 15. He observes that although the usual nesting sites are chosen, the favorite place for depositing the eggs is a little depression under a

small bush or overhanging rock on a steep hillside. In Ohio and other eastern States fresh eggs may be found in April and May.

Notwithstanding the arguments set forth by renowned naturalists that this bird is not possessed of an extraordinary power of smell, it has been proven recently by the most satisfactory experiments that the Turkey Buzzard *does possess* a keen sense of smell by which it can distinguish the odor of flesh at an immense distance. The flight of this Vulture is truly beautiful, and no landscape with its patches of green woods and grassy fields, is perfect without its dignified figure, high in air, moving in round circles; so steady, graceful and easy, and apparently without any effort. It is a very silent bird, only uttering a hiss of defiance or warning to its neighbors when feeding, or a low guttural croak of alarm when flying low overhead.

The eggs are creamy or yellowish-white, variously blotched and splashed with different shades of brown and usually showing other spots of lavender and purplish-drab; two in number, sometimes only one; average size about 2.73×1.87 . Six specimens measure 2.80×1.89 , 2.73×1.89 , 2.79×1.97 , 2.80×1.91 , 2.84×1.88 , 2.87×1.90 . Mr. H. R. Taylor, of Alameda, Cal., records finding early in April a set of immaculate eggs of this species.*

Mr. J. Parker Norris has a series of thirteen sets in his cabinet, and they show great variation in size and coloring. They all contain two eggs each. The ground color on nearly all of them is creamy or yellowish-white, and, as a rule, they can readily be distinguished from eggs of *C. atrata*, as the ground color of the latter is usually of a bluish-white. The spots on the eggs of *aura* are more in number, but as a rule not as large as those on *atrata*.

326. *Catharista atrata* (BARTR.) [455.]

Black Vulture.

Hab. Whole of tropical and warm-temperate America, south to Argentine Republic and Chili, north regularly to the Carolinas and Lower Mississippi Valley, irregularly or casually to Maine, New York, Ohio, Indiana, Illinois, etc.

This Vulture, called Carrion Crow, is very common along our South Atlantic and Gulf States, and is resident from South Carolina southward; in many places it is more numerous than the Turkey Buzzard, and its general traits, nesting habits, etc., are the same, breeding in hollow logs, decayed trunks of trees, stumps, and on the ground. In the Southern Atlantic cities the Black Vulture is said to be a semi-domestic bird, and even protected by law. Their services as scavengers in removing offal render them valuable and almost a necessity in Southern cities.

* Ornithologist and Oologist, Vol. XIII, p. 102.

On an island near Beaufort, South Carolina, Mr. Walter Hoxie found the Black Vulture nesting under a dense growth of yucca. No attempt was made at forming a nest, or even excavating a hollow. The eggs are laid far in under the intertwining stems of the yucca and in the semi-shadows were quite hard to be seen. Mr. Hoxie states that the parent birds have the habit of always following the same path in leaving and approaching the nesting place. By these paths, which were often winding, he was able to discover the eggs.* Both sexes assist in incubation and two eggs constitute the nest complement. Mr. Hoxie never observed a bird sitting on a single egg, and so far as he was able to determine the period of incubation is nearly thirty days; eggs were taken from May 2 to May 26. He states that Mr. Alfred Cuthbert took a set of three eggs in 1884.

The eggs are generally broadly elliptical-ovate in shape and similar in color to those of the Turkey Vulture—bluish-white, blotched and spotted with very dark brown and umber—not so densely marked as those of *Cathartes aura*; average size 3.10 x 2.04.

Mr. Norris has a series of fourteen sets in his cabinet which show very great variations in size and coloring. The ground color of the eggs of this species is, however, generally of a bluish-white, and this enables one to separate their eggs from those of *C. aura*. The spots are also, as a rule, larger and bolder, though fewer in number than on the eggs of *C. aura*.

327. *Elanoides forficatus* (LINN.) [426.]

Swallow-tailed Kite.

Hab. Tropical and warm-temperate parts of continental America, north regularly up the Mississippi Valley to Illinois, Iowa, Minnesota, etc. Casually east to Pennsylvania and southern New England.

This beautiful species, noted for its graceful and elegant flight, is an abundant summer resident of the Southern United States as far north as Virginia, occasionally straying to the Middle States, and regularly far up the Mississippi Valley. Skins of this Kite are in my collection which were taken in Ohio, August 22, 1878, and July 10, 1883. Previous to these records it has not been heard of in the State since 1858.

The favorite resorts of this bird are bottom woodlands near prairies or fields. Its food consists of small reptiles and insects; it is particularly fond of small snakes and lizards, grasshoppers, crickets, and various beetles. The nest of this Kite is built at the extremity of small branches near the tops of the tallest trees. The one represented in our illustration is taken from a sketch made on the spot by Mr. J.

* Breeding Habits of the Black Vulture. By Walter Hoxie. Auk, III, pp. 245-247.

A. Singley, of Giddings, Lee county, Texas. This nest, as represented, is placed in the top branches of a pecan tree; it is composed of sticks and pieces of green moss, some of the moss hanging over the sides, giving it a beautiful appearance when seen from the ground. Outwardly it measures eighteen inches in diameter; depth twelve inches. Two eggs from this nest measure 1.77×1.43 , 1.81×1.45 . In other localities the materials for the nest differ, no moss being used. Mr. Singley states that the birds are very vicious while nesting; he has seen them attack and drive off Owls, Turkey Buzzards, Florida Red-shouldered Hawk, *Buteo lineatus alleni*, Black Vultures and Crows. On April 25, 1885, while his collector, Mr. Theodore Thassler, was climbing to the nest represented in the engraving, he was almost knocked out of the tree by the birds; and before he could secure the eggs was compelled to kill the most pugnacious one, which proved to be the male. Unlike the White-tailed Kite, when the nest is disturbed the birds will desert it.

Mr. J. Parker Norris was the first to notice the error in the statement made by Audubon and subsequent ornithologists that this species lays from four to six eggs. All early ornithological writers have followed Audubon with this statement. Some of our best field-workers have received reports, seemingly from good sources, to the effect that as many as four and six eggs have been taken from a single nest, but as far as I am aware none of these large sets have made their appearance in any of the well-known, reliable collections. Judging from the large amount of material at hand on the subject we shall accept the facts in the results of observations made by recent ornithologists, that the Swallow-tailed Kite deposits two and rarely three eggs. Mr. Singley took seven sets in the season of 1887, and was fortunate enough to find one containing three eggs, and a nest with three young. The color of the eggs is white, greenish or yellowish-white, spotted and blotched with brown and umber of varying shades; some are sparingly marked with specks of dark brown, in others the spots are clustered about the large end. The markings are often large and of a rich chestnut and mahogany color. A set of two eggs in the collection of Mr. Norris measure 1.80×1.50 , 1.88×1.48 . These were taken in Lavaca county, Texas, April 20, 1885.

During a trip to Texas, in 1888, Mr. G. B. Benners and Mr. Thos. Gillin collected six sets of eggs of this bird in that State. One set contained three eggs, another only one, while the other four nests had two eggs each.

328. *Elanus leucurus* (VIEILL.) [427.]**White-tailed Kite.**

Hab. Southern portion of the United States, from South Carolina, Southern Illinois, and California, southward into South America.

The Black-shouldered or White-tailed Kite is distributed throughout Southern United States from the Atlantic to Pacific, and southward into tropical America. In the East it is found as far north as Southern Illinois; in the West as far north as Indian Territory and Middle California. The flight of this bird is said to be easy and graceful, but not rapid. Sometimes it stops for a few moments, descends with great velocity to the ground to capture a lizard or snake. The nest of this species, like that of the Swallow-tailed Kite, is always placed just as high in the tree as possible. Prof. B. W. Evermann informs me that of all the nests he examined he did not notice an exception in this respect. It is not a very substantial structure, composed of sticks, forming scarcely more than a mere platform, the cavity being quite shallow; it is very sparingly lined with the inner bark of the cottonwood, sometimes with straw. When robbed of a first set of eggs another is likely to be laid. Prof. Evermann states that the usual time of nesting in the Santa Clara Valley is from April 1 to May 1. Nests of this Kite have been found in Southern Texas which were placed in bushes only seven or eight feet from the ground.

Mr. Samuel C. Evans took six sets of the eggs of this species in San Jose Valley between May 1 and 22, 1886; one of two eggs on the 1st was far advanced in incubation; one of four on the 8th was fresh; another of two on the 19th was fresh; two sets of two each, taken on the 20th, in which incubation had begun, and on the 22d a set of five fresh eggs was taken. The nests were placed in sycamores, oaks and maple trees; one was situated forty feet from the ground, and the heights of the others ranged about fifteen feet. Mr. Evans, in several cases, placed small painted hen eggs in the Kites' nests, and the birds did not detect the difference, but continued laying. The eggs are of a dull, creamy-white, thickly blotched, dotted and tinged with deep chestnut, in some almost completely covering the whole ground; nearly spherical; four to six; this is the number usually stated, but four is almost invariably the number of eggs laid. A set of four eggs collected by Prof. Evermann in the Santa Clara Valley, California, measure 1.64 x 1.27, 1.62 x 1.27, 1.69 x 1.27, 1.62 x 1.27.

Mr. J. Parker Norris has two sets of eggs of this species in his cabinet, both collected in California. One set, containing three eggs, have the markings much lighter than the other set, which consists of

four eggs. These latter are of the dark type, which appears to be the commoner form of markings.

329. *Ictinia mississippiensis* (WILS.) [428.]

Mississippi Kite.

Hab. Southern United States, east of the Rocky Mountains, southward from South Carolina on the coast, and casually or irregularly to Kansas, Iowa, Wisconsin on the interior; south to Mexico.

The Mississippi Kite is a summer resident in the southern portion of the United States. It is irregular in its distribution, and its occurrence in particular localities is uncertain, often being found common in regions where it was formerly rare. It is generally found in the same localities with the Swallow-tailed Kite, and, like the latter species, its extremely beautiful flight is one of the bird's characteristics. It often soars so high in the air as to be almost invisible. Like the Swallow-tail species, its food consists of insects, small snakes and lizards.

The nests of the Mississippi Kite are built in the tops of gigantic pines, pin oaks, sycamores, cottonwood, elm, and lofty cypress trees.

Mr. J. A. Singley has a nest which he took in Lee county, Texas, which was placed in the forks of a live oak twenty-two feet from the ground. The foundation and sides of the nest is built entirely of small sticks, the interior portion of small, green oak twigs in leaf, and leaves of the mesquite tree; the lining is of green moss, on top of which are placed green leaves of the pecan tree. The outer diameter from the ends of the longest twigs is seventeen inches, the most compact portion eleven inches; interior diameter five inches; outer depth seven inches, inside one and a half inches. Mr. Singley states that the measurements of two eggs taken May 22, 1886, now in the cabinet of Mr. J. Parker Norris, is 1.65×1.40 , 1.63×1.34 ; they are bluish-white unmarked, one of them having light brown stains on it. They were taken from a nest placed in the slender forks of a small post oak about thirty feet from the ground; it was made of sticks and weed stems, lined with willow twigs in leaf.

Mr. Singley has given me the sizes of the eggs of four sets which he collected in the season of 1887. Three of these sets were of two eggs each and one of three; their color was invariably bluish-white, unmarked, and their sizes are as follows: 1.53×1.34 , 1.64×1.36 , 1.71×1.32 , 1.63×1.34 , 1.60×1.35 , 1.67×1.32 , 1.65×1.34 , 1.59×1.35 , 1.62×1.33 . Considerable variation will be noticed in the length of these specimens, while their diameter is very uniform.

Col. N. S. Goss found this species breeding in company with the Swallow-tailed Kite in the vicinity of Neosho Falls, Kansas. An egg was taken July 5, from an old crow's nest, fitted up with a few extra

sticks and green twigs in leaf for lining. It was placed in a medium-sized oak about forty feet from the ground. The egg, which was advanced in incubation, he describes a pure white, size 1.70 x 1.35.*

Col. Goss also observed the Mississippi Kite nesting in the timber lands bordering Medicine River, near Sun City, Barber county, Kansas, and found seven nests on the 22d of May; on the 31st he collected four sets of eggs containing two each, and one nest contained a single egg. June 10th, two more sets of two eggs each were taken. Col. Goss describes the eggs as "white or bluish-white;" the last two sets were stained by the wet leaves in the nests. The eggs measure by sets as follows: First, 1.55 x 1.33, 1.52 x 1.36; second, 1.76 x 1.48, 1.65 x 1.35; third, 1.70 x 1.39, 1.56 x 1.35; fourth, 1.70 x 1.37, 1.68 x 1.30; fifth, 1.75 x 1.30; sixth, 1.54 x 1.31, 1.45 x 1.24; seventh, 1.70 x 1.38, 1.68 x 1.43. The nests were all built either in the forks from the main body, or in the forks of the larger limbs of the cottonwood and elm trees, and when old would be taken for the nests of the common Crow. Their height from the ground ranged from twenty-five to fifty feet. †

Mr. R. E. Rachford informs me that he took two sets of the eggs of this species in Texas from nests situated about thirty feet from the ground in oak trees. The color of the eggs he describes as white, with a slight greenish tinge.

330. *Rostrhamus sociabilis* (VIEILL). [429.]

Everglade Kite.

Hab. Florida, Atlantic coast of Mexico, part of West Indies, Central America, Eastern portion of South America to the Argentine Republic.

This slate-colored Kite is a resident of the Everglades of Florida, and also occurs in the fresh water marshes and lakes of the middle and southern portions of the State.

Mr. W. E. D. Scott found it abundant at Panasofkee Lake, about February first, where it was feeding on a kind of fresh-water snail, which was very abundant, and the local name given the bird is "Snail Hawk." The birds fish over shallow water, after the manner of gulls; securing a snail by diving, they carry it to the most available perch, when the animal is dexterously taken from the shell without injury to the latter. At many places where a particularly convenient tree or stub rises out of the saw-grass, the ground is literally heaped with the empty shells of the snails. †

The nesting season of this species in the Everglades of Florida is in March, some pairs breeding later than others, and two or three eggs

* Auk, Vol. II, p. 21.

† Auk, Vol. IV, pp. 344-345.

‡ Bull. Nutt. Club, Vol. VI, p. 16.

are deposited. The nests are built in tall, rank grass and bushes; especially in the saw-grasses, about a foot below the tops, just so as to be out of sight, and the nests are usually composed of the same material; they measure about a foot in diameter, with a cavity three inches deep.

Mr. H. B. Bailey describes a set of three eggs, taken in the Everglades, March 16, by E. W. Montreuil; their sizes are 1.91 x 1.50, 1.80 x 1.51, 1.80 x 1.45; the color of one is light brown, nearly obscured by large blotches of dark and reddish-brown; another has a dirty-white ground color, with spots and blotches of various shades of brown, which become smaller and fewer at the smaller end. It resembles the common varieties of eggs of the European Sparrow Hawk, *Accipiter nisus*. The third is of a greenish-white, over the smaller end are scrawls, lines and a few spots of light and dark brown.*

331. *Circus hudsonius* (LINN). [430.]

Marsh Hawk.

Hab. Whole of North America, south in winter to Panama, the Bahamas and Cuba.

The Marsh Hawk, Blue Hawk, or Harrier, is distributed throughout the whole of North America. It is one of the most abundant and widely-diffused of our birds, and breeds from the fur country of Hudson's Bay to Texas, and from Nova Scotia to Oregon and California. It is found especially in regions covered by bushes, small trees, rank grass, swamp prairies or marshy places. Here the nest may be found, placed on the ground, which is only a collection of twigs and hay, but from three to seven inches in height and a foot or more in diameter. Sometimes the nests are of large proportions, which is the result of nesting in the same spot for a number of years. The eggs are frequently laid on a bed of green moss, with the material arranged in a circular form. The bird may often be seen during the spring and summer months sweeping slowly over meadows and bottom lands in pursuit of gophers, mice, birds, grasshoppers and large insects. It can readily be recognized by the entirely pure white upper tail-coverts; the male above bluish-ash, whitening below; the female above dark umber-brown.

Mr. S. F. Rathbun records a set of seven eggs taken June 14, at Dunnville, Ontario, and Mr. Norris has a finely marked set of seven in his cabinet.

Marsh Hawks frequently begin to incubate with the first egg and the young are hatched at intervals, after the manner of the cuckoos. Fresh eggs may be found from the first of May to the 15th or 20th of June, according to locality.

* Auk, I, p. 95.

The eggs are greenish-white, either immaculate or faintly spotted with pale brown or lilac, rather oval in shape; three to six in number, often four or five, and measure from 1.80 to 1.90 in length by 1.38 to 1.45 in breadth. Mr. Norris has sets of Marsh Hawk eggs that are as heavily marked as many eggs of *Buteo lineatus*. They were taken by the famous collector, "J. M. W." (C. L. Rawson), and fully identified.

332. *Accipiter velox* (WILS). [432.]

Sharp-shinned Hawk.

Hab. Whole of North America, south to Panama.

This spirited little Hawk is distributed at large throughout North America and it is considered an abundant species, although in some localities it is quite rare. Known as Pigeon Hawk, but it should not be confounded with *Falco columbarius*.

The Sharp-shinned Hawk is swift, irregular and nervous in its flight; is one of the most daring of the family, often successfully attacking birds of its own weight; failing sometimes to do so either from over-confidence in its own abilities, or under-estimation of the powers of its victim. The smaller birds and quadrupeds, young chickens, pigeons, small reptiles and various insects constitute this bird's food. The nests of this species are built in trees in dense woods, preferably pine groves; frequently a scrubby oak or a birch offers a favorite site, and the height from the ground may range from ten to sixty feet; the nests generally rest against the trunk of the tree at the base of a limb. The composition of the nests are small sticks forming a platform with a slight hollow, usually without lining. Occasionally nests are placed in cavities similar to those of the Sparrow Hawk, or upon a ledge of rock overhanging a lake or river.

Mr. O. C. Poling informs me that in Western Illinois this Hawk selects for the site of its nest the top branches of an almost limbless tree, usually an oak, which is situated in dense woods; it is generally composed of oak twigs and leaves. Mr. Poling states that nesting begins by the middle of April; all the nests he has observed contained five eggs, although others were found in that region containing three and four.

Mr. Charles F. Morrison, of Fort Lewis, Colorado, took a set of three eggs June 22 from a dilapidated Magpie's nest, the arched roof of which had fallen in, and formed a hollow, which was lined with a few feathers upon some dead leaves. The Marsh Hawk and the present species deposit their eggs when other Hawks are nearly through breeding. The Sharp-shinned Hawk's eggs may be found in the first week of

April and as late as the last week of June; the birds seldom occupy a nest the second time.

Mr. J. Parker Norris has a large series of these eggs in his collection, consisting of seventeen sets, ranging in number from three to five, and one containing the unusual number of seven eggs; the dates on which they were taken is from April 11 to June 26. Most of these eggs were collected by the experienced oologist, "J. M. W.," Mr. C. L. Rawson, of Norwich, Conn. Mr. Norris also describes seventeen eggs which were laid in succession by a single bird between May 23 and June 25.*

The eggs of the Sharp-shinned Hawk, Mr. Norris states, are subject to great variation in markings, and yet, as a rule, they can be identified at a glance. With the exception of the Sparrow Hawk, *Tinnunculus sparverius*, they are the smallest laid by any of the hawks found in North America, and among the most beautiful eggs of any of the *Raptores*. Their ground color varies from bluish-white to grayish-white, spotted, blotched, speckled, streaked and clouded with light fawn color, burnt umber, chestnut, lavender-gray, chocolate, russet-brown and cinnamon, exhibiting an endless variety of bold and indistinct patterns of coloration and design. The usual form of the egg is spherical, of nearly equal size at both ends. The average size is 1.50 x 1.16.

333. *Accipiter cooperi* (BONAP.) [431.]

Cooper's Hawk.

Hab. North America at large; greater portion of Mexico.

Distributed throughout temperate North America at large as a summer resident, and well known to the farmers by the name of Chicken Hawk. Its flight is easy and usually slow, but the bird is quick in its movements; its long tail serving the purpose of a rudder as it suddenly pounces upon the object of its pursuit or quickly ascends into the air. This and the last species are perhaps the boldest predators of the family. They are shy and difficult of approach, yet their imprudence often proves fatal to them. They do not hesitate to attack chickens in the presence of their owners; they also feed largely upon small quadrupeds, weasles, squirrels and young rabbits; snakes and reptiles are among their victims.

A specimen of this bird is in my collection which was killed by a weasel in mid air; the weasel sucking the blood of the hawk, while the bird was struggling with its intended victim, which escaped unharmed.

The nests of Cooper's Hawk are usually placed in tall trees, from

* For a complete description of this series of eggs see Ornithologist and Oologist, Vol. XIII, pp. 34-37.

ten to fifty feet from the ground ; frequently an old Crow's or some other Hawk's nest is fitted up for the purpose, which is occupied for a succession of years, and the nests are often so augmented by the continuous adding of brush and rubbish that they become huge structures. May 15, 1880, a collector brought me a set of four eggs taken from an old squirrel's nest. Mr. L. Jones, of Grinnell, Iowa, writes that this Hawk deposits its eggs in that region about the first of May. The number of eggs laid ranges from four to six, rarely the latter number, and they may be found in various sections between April 1 and May 20.

The eggs are of a pale-bluish or greenish-white, usually spotted with pale reddish-brown. Mr. Norris has sets of these eggs that are heavily marked. They measure from 1.80 to 2.10 long by 1.40 to 1.62 broad.

A set of four eggs from Southern Arizona, taken May 15, measure 1.90 x 1.40, 1.95 x 1.42, 1.92 x 1.40, 1.90 x 1.42 ; another set of four collected in Central Ohio, April 9, measure 1.89 x 1.40, 1.92 x 1.45, 1.93 x 1.40, 1.90 x 1.42.

334. *Accipiter atricapillus* (WILS.) [433.]

American Goshawk.

Hab. Northern and Eastern North America; the northern half of United States, a winter resident in some parts.

A large and handsome hawk—one of the most symmetrical in outline of the family ; known to breed mostly north of the United States. Its breeding places are usually in thick evergreen woods, the nest being placed in tall hemlock trees ; it is bulky and composed of sticks, twigs and weeds, lined with bark strips and grass. The eggs are two or three in number, bluish-white, sometimes faintly spotted with yellowish-brown. Mr. Norris has two sets of these eggs in his collection ; one of three taken at Kentville, Nova Scotia, April 26, 1888 ; they are bluish-white, unmarked, but nest stained ; sizes : 2.25 x 1.81, 2.36 x 1.71, 2.24 x 1.76 ; the other of two eggs taken in the same locality, May 5, 1888, are dull bluish-white and measure 2.14 x 1.79, 2.13 x 1.83. Average size 2.31 x 1.75.

334a. *Accipiter atricapillus striatulus*. RIDGW. [433a.]

Western Goshawk.

Hab. Western North America.

A darker colored race than the foregoing, inhabiting the Pacific coast region, north to Sitka, breeding in the Sierra Nevadas probably as far south as 30°. General habits, nesting, eggs, etc., the same as those of *atricapillus*. Average size of eggs 2.36 x 1.75.

335. *Parabuteo unicinctus harrisi* (AUD.) [434.]**Harris's Hawk.**

Hab. Southern border of the United States; Mississippi, Texas, Arizona, southward to Panama.

This bird is an inhabitant of the warmer parts of America, extending its range over our Mexican border. In Texas it is common, especially about the mouth of the Rio Grande. Its habits resemble those of the Caracara Eagle, but it is not so active, and the nests are hardly distinguishable in situation and construction. It is said, by some observers, to subsist entirely on carrion, and may be seen in company with the Turkey Buzzard, Black Vulture and Caracara Eagle.

Mr. Sennett found this species to be the most abundant of any other of the family on the Lower Rio Grande in Texas. In their crops he found mice, lizards, birds and often the Mexican striped gopher, indicating that they were active hunters instead of sluggish birds.

The eggs are white, with a yellowish tinge, sometimes marked with light dashes of yellowish-brown and dottings of purplish drab; commonly two or three in number, rarely four.

Four sets of these eggs are in the cabinet of Mr. J. Parker Norris, and show considerable variation in size and shape. One set of three taken near Corpus Christi, Texas, May 10, 1886, are entirely dull white; sizes, 2.19 x 1.61, 2.13 x 1.63, 2.14 x 1.58; another of two eggs taken in Cameron county, Texas, May 25, 1886, measure 2.08 x 1.65, 2.19 x 1.71; a set of three eggs from the same place, collected April 25, measure 2.00 x 1.65, 2.06 x 1.65, 2.13 x 1.69; one of the eggs of this set has a few faint cinnamon spots; the fourth set taken in Cameron county, Texas, May 3, 1886; two of these are faintly marked with lavender, but the third is distinctly spotted at the large end with cinnamon; sizes, 2.14 x 1.65, 1.94 x 1.61, 1.99 x 1.57.

[336.] *Buteo buteo* (LINN.) [435.]**European Buzzard.**

Hab. Northern portions of the Eastern Hemisphere. Accidental in Michigan?

The older ornithologists were doubtless mistaken in the identification of the specimens obtained in this country, which they described and figured as *Buteo vulgaris* of Europe.

This Hawk has been entirely excluded from our fauna by more recent authorities, and it is admitted only on the grounds of a single specimen taken near Paw Paw, Michigan, by J. D. Allen, and received in the skin by Mr. C. J. Maynard in the autumn of 1873. The bird is quite common in England, frequenting the more cultivated portions, as well as the very wildest parts of Scotland and tracts of Alpine

forests, where its favorite breeding place is on the edges of ravines. The nest is placed in some large tree or on a ledge of rock, and is built of sticks with a scanty lining of wool and hair. The eggs are three or four in number, of an oval form, bluish-white, with pale brown blotches and spots of yellowish-brown, chiefly at the larger end. A set of three eggs in my cabinet, from England, measure 2.30×1.75 , 2.28×1.72 , 2.30×1.68 .

337. *Buteo borealis* (GMEL.) [436.]

Red-tailed Hawk.

Hab. Eastern portions of North America, west to the Great Plains.

The Red-tailed Buzzard, in its light and dark geographical races, is distributed throughout the whole of North America. This species is abundant in the eastern portion. A large Hawk and a notorious visitor to barn-yards, though lacking much of the pluck and dash of the members of some of the preceding genera it has the equally successful quality of perseverance. The food of this species is chiefly small quadrupeds, red squirrels, gophers and ground moles, and the remains of these rodents may always be found in this bird's nest containing young. The Hawk will always be found common where these small animals are most abundant.

The nest is placed in high trees in deep woods; it is large and bulky, though comparatively shallow; made of sticks and twigs, mixed together with corn-husks, grass, moss, and on the inside may be found a few feathers. Sometimes the deserted nest of a crow or that of another hawk is fitted up and used. Mr. J. Parker Norris records a nest occupied first by the Great Horned Owl and afterwards by the Red-tailed Hawk, each year; the young owls leave the nest before the hawk is ready to occupy it.

The number of eggs laid by this species is two or three, rarely four. Mr. Norris has a series of twenty-seven sets collected in Connecticut, Pennsylvania, Iowa, Mississippi, and Texas; nineteen of these sets are of two eggs, six of three, and two of four.* The time of depositing the eggs in the United States varies according to locality and circumstances, but they are generally laid in March or April. Eggs are found in different stages of incubation as late as the middle or latter part of May. A large series of eggs present amazing differences in size and markings; their ground color is white or bluish-white; some are entirely unmarked, while others are very heavily blotched and splashed

*For a detailed description of this series see *Ornithologist and Oologist*, Vol. XI, pp. 67-69. Since the above was written Mr. Norris has increased his series to thirty-six sets.

with many shades of red and brown; some are faintly marked here and there with a light purplish tint, and again the colorings may form an almost confluent wreath at either end. The largest eggs in Mr. Norris' collection measure 2.41×1.84 , 2.37×2.00 ; the smallest, 2.17×1.80 , 2.20×1.78 . The average size is 2.36×1.80 .

337a. *Buteo borealis kriderii* HOOPES. [436a.]

Krider's Hawk.

Hab. Great Plains of the United States, from Minnesota to Texas.

This lighter colored variety of the Red-tailed Hawk occurs in the Great Plains, from Minnesota to Texas; east irregularly or casually to Iowa and Northern Illinois.

Mr. F. M. Dille writes that this bird nests in remote places on the plains and among the large cliffs of Colorado. He was unable to detect any difference between the nest and eggs of this bird and those of the Western Red-tail. He took a set of the eggs, three in number, in Weld county, May 24, 1886, from a nest in a cottonwood tree. They are now in the collection of J. Parker Norris. Two of these specimens are slightly spotted with Vandyke brown, but the third is quite heavily splashed and blotched at the smaller end with chestnut and cinnamon; their sizes are 2.34×1.82 , 2.30×1.84 , 2.28×1.83 .

Mr. Dille states that the nest contained cotton balls, from the tree in which it was placed; these had burst and made excellent soft lining for the nest.

337b. *Buteo borealis calurus* (CASS.) [436b.]

Western Red-tail.

Hab. Western North America, especially in the United States, from the Rocky Mountains to the Pacific, south into Mexico.

A blackish or sometimes an almost entirely sooty variety inhabiting Western North America. In all respects its breeding habits are the same as those of the Eastern representative, nesting in the branches of lofty oaks, pines, sycamores, etc. In mountainous regions the nests are often placed on the narrow ledges of cliffs. The eggs can not be distinguished from those of *B. borealis*.

339. *Buteo lineatus* (GMEL.) [439.]

Red-shouldered Hawk.

Hab. Eastern North America, north to Nova Scotia; west to the edge of the Great Plains.

This large species is one of the commonest hawks in the United States, and it is especially abundant in winter, from which it receives the name of Winter Falcon, but it is not more hardy than the Red-tail. It also shares the name of Chicken Hawk, commonly applied to all the larger hawks. Only occasionally it visits the barnyard, its diet is of a more humble kind, such as frogs, rats, mice and small snakes.

The nesting of the Red-shouldered Hawk is very much the same as that of the Red-tail, but in many sections it seems to have a preference for lower woods, in bottom lands. The nest is said not to be so long re-occupied by the birds. The eggs are usually deposited in April or May. The number of eggs is three or four, sometimes only two. The ground color is bluish, yellowish-white, or brownish, spotted, blotched and dotted irregularly with many shades of reddish-brown; they are usually more highly colored than the eggs of the Red-tail. Some of them are exceedingly handsome.

A series of sixty-one sets are in Mr. Norris' cabinet, nearly all of which were collected by the celebrated oologist, "J. M. W.," (C. L. Rawson); they show a wonderful variation in size and markings, ranging from almost unmarked to very heavily spotted and blotched specimens. To describe all the shades of reds and browns, which comprise the variation, would be an almost endless task, and a large series like this must be seen in order to appreciate how much the eggs of this species vary. The sizes range from 2.00 to 2.30 long by 1.65 to 1.75 broad.

339*a*. *Buteo lineatus alleni* RIDGW.

Florida Red-shouldered Hawk.

Hab. Florida, Texas.

In Texas Mr. Singley found this bird breeding in the densely wooded bottom lands, in tall pin oaks that border the streams. He states that the nest is placed on the large limbs of the trees, and is constructed of large and small sticks, weeds and moss; sometimes it is beautifully decorated with Spanish moss. A few of the birds prefer the uplands for a breeding place, and select pin oaks and hickory trees in the neighborhood of streams. Mr. Singley says this Hawk has the peculiar habit of placing green leaves in the nest. Sometimes the leaves are bruised and often stain the eggs, and by the time incubation is well advanced the nest is half full of the leaves.

Nest building commences about the middle of March, and fresh sets of eggs may be found until the middle of April. Two or three eggs are laid. Mr. Norris has seven sets collected by Mr. Singley in Lee county, Texas. Their ground-color is dull white or bluish-white and they vary from almost entirely unmarked to heavily blotched, spotted and speckled with red, lilac and rich reddish-brown. They vary in size from 1.96 to 2.19 long by 1.67 to 1.73 broad.

339*b*. *Buteo lineatus elegans* (CASS.) [439*a*.]

Red-bellied Hawk.

Hab. Pacific coast of the United States, south into Mexico.

This western race, whose whole under plumage is of a rich dark

reddish color, is distributed from the Rocky Mountains to the Pacific. Nesting and eggs similar to those of *B. l. alleni*. Average size of the eggs is 2.19×1.71 . A set of two eggs in Mr. Norris' collection, taken May 2, 1887, in Los Angeles county, California, measure 2.12×1.75 , 2.04×1.77 . They are grayish-white spotted with russet.

340. *Buteo abbreviatus* CABAN. [440.]

Zone-tailed Hawk.

Hab. Texas, Arizona and Southern California, south into the northern portion of South America.

The Zone-tailed Hawk is a peculiar species, unlike any other of the United States. It is slenderly built with long wings and tail and in its various plumages is not yet well known. The bird is a Mexican and Guatamalian species and is of quite general distribution in Texas and Arizona where it frequents the wooded districts in the vicinity of streams. Its food is small birds, quadrupeds, beetles, locusts and grasshoppers. In Texas and Arizona this Hawk has been found nesting in May, fresh eggs being taken by the middle of the month. The nests are built on tall trees, such as cottonwood, ash, box-elders, sycamore and cypress that fringe the streams. It is placed from fifteen to forty feet from the ground, in the horizontal branches; is large and bulky, made of coarse sticks, lined with cottonwood leaves or Spanish moss. When disturbed while incubating the bird is said to fly off, uttering a loud whistling cry. The eggs are two to four in number; dull white, usually spotted, splashed or speckled, with rich chestnut or umber-brown, chiefly at the larger end; their average size is 2.15×1.70 .

341. *Buteo albicaudatus* VIEILL [441.]

White-tailed Hawk.

Hab. Rio Grande Valley of Texas, southward through Mexico, Central and most of South America.

This fine Hawk is a rather common resident on the Rio Grande of Southern Texas and southward. Dr. Merrill mentions two nests which he found May 2, 1878, placed in the top of a yucca growing in Palo Alto prairie, about seven miles from Fort Brown. The nests were not more than eight feet from the ground, and were good-sized platforms of twigs, with scarcely any lining. While examining these nests, the parents sailed in circles overhead, constantly uttering a cry resembling the bleating of a goat. Each nest contained one egg. The first was fresh; size 2.35×1.91 ; dirty-white, with a few reddish blotches at the smaller end. The second, partly incubated, was like the first, but the blotches were rather sparsely distributed over the entire egg; size, 2.35×1.85 .

Mr. Edwin C. Davis found a nest of this Hawk seven miles south of Fort Griffin, Texas, containing two slightly incubated eggs, on the

2d of June, 1886; it was in a mesquite bush, eight feet from the ground. This is doubtless late nesting, as all other nests found were empty.

Three sets of two eggs each are in Mr. Norris' collection; one taken May 2, 1884, near Corpus Christi, measures 2.20×1.80 , 2.19×1.80 ; their color is light grayish, faintly and sparingly spotted with light drab; another collected in the same locality March 24, 1886, one egg of which is unmarked, and the other faintly spotted with fawn color at the large end; sizes, 2.17×1.77 , 2.25×1.78 ; the third set was taken on the Arkansas river, Texas, April 2, 1888; they are dull grayish-white, faintly and sparingly marked with light fawn color; sizes, 2.33×1.65 , 2.30×1.73 .

342. *Buteo swainsoni* BONAP [442.]

Swainson's Hawk.

Hab. Western North America from the Mississippi Valley to the Pacific; north to the Arctic regions and south to Buenos Ayres. Casual in New England.

One of the commonest and most characteristic of the large Hawks in various places of the West. Many are killed, as they commit great depredations in the poultry yards; their food, however, consists largely of birds and the smaller quadrupeds—squirrels, gophers, rats, mice, etc. The flight of Swainson's Hawk is usually slow, but in pursuit of its prey its swiftness is said to remind one of the dash of *Accipiter velox*, Sharp-shinned Hawk. The sites which are chosen for nesting places by this Hawk are extremely variable; in some localities the nest is built on the ground, on bushes, small saplings and on the ledges of rocky cliffs. Old nests of hawks and crows are fitted up for the occasion; but usually it is built in the tallest trees and in an almost inaccessible position in the outer branches.

Mr. L. Jones states that in Iowa this bird, while breeding, is found principally in moderately timbered tracts, selecting less inaccessible places for its nests than *Buteo borealis*, but of the same position and composition. The eggs are deposited as late as May 15, usually May 1.

Mr. A. M. Shields took a set of two eggs of this Hawk, May 21, 1886, in the vicinity of Los Angeles, California, from a nest situated in the extremity of the branches of an oak tree, fully fifty feet from the ground; these are in my cabinet and measure 2.00×1.61 , 2.20×1.67 . The eggs of this Hawk are two to four in number, greenish-white, buffy-white or colorless, sometimes unmarked, but usually spotted, stained or blotched with reddish or rusty-brown. Their average size is 2.21×1.70 .

343. *Buteo latissimus* (WILS.) [443.]**Broad-winged Hawk.**

Hab. Eastern North America, from New Brunswick and the Saskatchewan country south to Texas, Mexico, Central America, northern portion of South America and West Indies.

The Broad-winged Hawk is of general distribution in eastern North America. It makes its summer home in the solitudes of dense woodlands, usually in the vicinity of a marsh, lake or river. The bird is of an unsuspecting and spiritless character, frequently permitting the intruder to approach within a few yards of it without exhibiting the least alarm. When the nest is approached this Hawk is said to utter a piercing cry of alarm. Its food consists of squirrels, weasels, frogs, mice and small birds. Not always are the highest trees selected as nesting sites; in some sections the crotches and branches of trees, ten to forty feet from the ground, are usually chosen, while in other regions the tallest oak and hickory trees, sixty to eighty feet from the ground, are preferred. Abandoned crows' nests are likewise made use of by this species.* The nests are coarsely constructed of sticks, lined with fibrous roots, bark strips, moss or feathers.

The eggs of the Broad-winged Hawk are usually deposited in May. In the forests of the Red River of the North in Minnesota, Mr. J. W. Preston found the eggs in the latter half of May; they have been taken near St. John, New Brunswick, as late as June 23; in Mouroe county, Pennsylvania, June 6; and Northhampton county, Pennsylvania, May 17 and 18; near Framingham, Massachusetts, May 25; in Lafayette county, Mississippi, April 9, May 17 and 18. Mr. O. C. Poling took sets of this Hawk's eggs near Quincy, Illinois, in May. A set of two eggs were brought to me which were taken in Knox county, Ohio, May 26, 1886.

The eggs are of a grayish, lavender-gray or yellowish-white ground color, variously marked with spots and blotches of fawn color and umber-brown and chestnut. Two or three are the usual number laid, and four are exceptional. The average size is 1.90×1.54 .†

*Many nests of the *Raptors* described by writers as resembling those of the Crow may safely be attributed to the latter as their architects, and wherever Crows breed abundantly it is almost an assurance that some species of Hawk or Owl may be found nesting in the immediate vicinity.

†This is the average size given by Mr. Norris, taken from a series of seventeen sets in his cabinet, nine of which came from Minnesota, three from Mississippi, one from Massachusetts, and four from Pennsylvania; forty-two eggs in all. Mr. Norris states that there are two types of coloration in the series; twenty-four of the eggs have markings of very subdued tints of pearl-gray, lavender-gray, lilac-gray and ecru-drab, on a faint yellowish or bluish-white ground; the tints in many instances have the appearance of being under the shell, and are present in specks, spots and blotches. The remaining eighteen eggs are marked with spots and blotches of fawn color, russet, walnut-brown, burnt umber and chestnut. Some of the sizes from this series are as follows: 1.74×1.52 , 1.76×1.50 , 1.85×1.46 , 1.87×1.53 , 1.90×1.43 , 1.90×1.54 , 1.99×1.53 , 2.01×1.62 , 2.06×1.52 . See Ornithologist and Oologist, Vol. XII, pp. 9-11, and Vol. XIII, p. 21.

345. *Urubitinga anthracina* (LICHT.) [444.]**Mexican Black Hawk.**

Hab. Arizona, southward to northern portions of South America.

A beautiful Hawk, known as the Mexican or Anthracite Buzzard, and found throughout tropical America, and north to Southern Arizona. The general color of the adult bird is coal-black; tail-coverts narrowly tipped with white; tail black, the tip and base white, and crossed at about the middle by a broad band of white.

Dr. Edgar A. Mearns met with this Hawk in the valley of the Rio Verde River, Arizona, in 1884-5. The birds were present throughout the summer months, but departed in autumn; they were extremely shy and were usually found hidden in the dense foliage of cottonwoods near water, in some low situation. Their flight he describes as swift and powerful. Occasionally one was seen eating a fish upon the sandy margin of the river. Their loudly whistled cry was rendered with great power, and different from that of any bird of prey with which he was acquainted.

A nest was found built in a cottonwood tree June 19. This had evidently been the birthplace of many generations of these Hawks, for it measured four feet in depth by two feet in width. It was lined with a layer of cottonwood leaves, several inches deep, was very slightly concave, and composed of large sticks, much decayed below, showing that they had been in position for a number of years. The nest was about thirty feet from the ground and contained a half-grown nestling. Upon approaching the nest the Hawk exhibited much uneasiness and screamed lustily.* The eggs, two or three in number, are described as plain white, average size 2.10 x 1.75.

346. *Asturina plagiata* SCHLEGEL. [445.]**Mexican Goshawk.**

Hab. Southern border of the United States, southward to Panama; accidental in Southern Illinois.

Captain Charles E. Bendire states that this, one of the handsomest of our *Raptores*, is not an uncommon summer resident of the southern portions of Arizona. The bird's peculiar call-notes he describes as resembling the piping of the Long-billed Curlew; their flight exceedingly graceful and swift, resembling in many respects that of the American Goshawk. They seem to prefer more open country than the latter species. In the timber bordering Rillitto creek, near Tucson, Captain Bendire found this Hawk breeding in 1872; on the dates May 17, June 6 and 19, and June 20, nests were found containing two and three eggs each. The nests were placed in cottonwood trees, fifty and seventy-five feet from the ground; one found May 17, located in the

* Auk, III, pp. 69-73.

topmost branches of a cottonwood was not a very substantial structure ; a shallow platform composed principally of small cottonwood twigs, a number of them broken off green by the birds themselves. The birds were seen, while flying, to grasp at a suitable twig with the talons, usually succeeding in breaking it off at the first trial. The nest was lined with dry cottonwood leaves and the tops of the willows, the latter taken while yet green.

Captain Bendire describes the eggs as white or pale bluish-white, unspotted, but always more or less stained with yellowish matter hard to clean off ; size 2.00×1.60 .* A set of two eggs, taken in Arizona, May 23, 1884, by Mr. F. Stephens, is in the collection of Captain B. F. Goss. The nest from which these were taken was in a cottonwood tree, seventy-five feet from the ground ; it was made of cottonwood and willow twigs, mostly green, lined with small twigs and green leaves. The eggs are white, with a few indistinct buffy-brown spots, sizes 1.96×1.54 , 1.96×1.58 .

[347.] *Archibuteo lagopus*. (BRUNN.).

Rough-legged Hawk.

Hab. Northern portions of the old world ; Alaska.

The European Rough-legged Buzzard very much resembles our American bird, *sancti-johannis*. In Europe it is said to be sparingly distributed over the northern parts, appearing occasionally in Northern Britain, and with regularity in the more southern portions. It is known to breed in the rugged mountain regions of Switzerland and various parts of France and Italy, placing the bulky nest of sticks in lofty trees or on precipitous rocks. The eggs, two to four in number, vary from dirty-white to grayish or cream-color, usually marked with numerous spots and blotches of umber and sepia-brown, and sometimes entirely unmarked ; average size 2.20×1.80 .

347a. *Archibuteo lagopus sancti-johannis* (GMEL.). [447.]

American Rough-legged Hawk.

Hab. Whole of North America, north of Mexican boundary breeding chiefly north of the United States.

The plumage of the "Black Hawk," as it is called, is subject to great variations. In general, the whole plumage is dark brown or blackish and light brown, gray or whitish. From these variegated stages the bird varies to more or less uniform blackish ; but in either plumage it is easily recognized by the feathered shank. The Rough-legged Buzzard frequents swamps, marshes and the vicinity of lakes and rivers. It appears to be more numerous near the coast than in the interior east of the Mississippi. It is less active than most Hawks,

*Ornithologist and Oologist, Vol. VI, pp. 87-88.

and approaches the Owls in the habit of hunting by twilight. Its food consists chiefly of mice and frogs.

The nest of this species is placed on large trees, frequently on ledges of rocks; it is a bulky structure, composed of sticks, grasses, weeds and various other materials which are soft and easily matted together. The eggs are two or three in number; they are white or buffy, sprinkled, spotted or blotched with brown; the average size given is 2.27×1.76 . Mr. Norris has a set of two eggs taken June 9, 1864, on the Anderson River, in Arctic America, by R. R. MacFarlane. These are of an ivory white, spotted, splashed and blotched with cinnamon; they measure, 2.20×1.76 , 2.22×1.81 .

348. *Archibuteo ferrugineus*. (LICHT.). [448.]

Ferruginous Rough-leg.

Hab. Western United States, across the great plains, north to the Saskatchewan region; south to Mexico. Occasionally to Illinois.

Known as the Ferruginous Rough-legged Buzzard or California Squirrel Hawk. A common species on the plains of the West, and one of the largest and handsomest of our American Hawks.

In some localities this species builds its large and bulky nests on trees, ranging from ten to fifty feet from the ground; it is composed of large sticks and lined with leaves, tufts of grass and roots. Mr. F. M. Dille, of Greeley, Colorado, states the birds are not shy, and made no demonstration when he approached the nest. He describes a nest as measuring three feet in diameter and two in depth. The eggs are two or three, rarely four, in number.

Capt. B. F. Goss informs me that he found this Hawk in Northern Dakota nesting on the ground, on rocky, precipitous hillsides; this, too, being the case seemingly from choice, for heavy timber was only a few miles away, and patches of brush and low trees were often in the immediate vicinity of the nest. May 4, 1884, Capt. Goss found a nest at the foot of a rock, on a steep bluff; it was composed of sticks, buffalo ribs, weed stalks and small pieces of turf, lined with dry grass. Four eggs, vary greatly in color, from finely spotted to heavily splashed with different shades of brown; sizes, 2.44×1.96 , 2.55×1.96 , 2.45×2.00 , 2.40×1.92 . Mr. Dille states that the usual date for depositing the eggs on the plains of Colorado is about May 20, but he has taken fresh eggs as early as April 20. A set of two in Mr. Norris' collection, taken in Comal county, Texas, March 30, 1873, are spotted, splashed with brown and burnt umber. They measure 2.33×1.88 , 2.34×1.86 .

349. *Aquila chrysaetos*. (LINN.). [449.]**Golden Eagle.**

Hab. Northern portions of the northern hemisphere, chiefly in mountainous regions.

The Golden Eagle inhabits North America at large, and also the northern parts of the Old World. It may be recognized by the tarsus being *wholly feathered to the toes*; the general color of its plumage is dark-brown throughout, and the tone of the color, in certain lights, is of a golden-brown. It is known to breed in mountainous portions of Northern New England and New York. In the Anderson River region Mr. MacFarlane found the Golden Eagle nesting as early as the last of April, and eggs containing large embryos were taken May 27. The bird is quite common in the mountainous regions of California. The nests are built usually on inaccessible rocks, and sometimes in trees, and two or three eggs are laid, generally two. Throughout California the Golden Eagle seems to nest in trees by preference. Mr. Samuel C. Evans found it breeding in March, in the wild, rugged mountains of Santa Clara county, in the vicinity of Mt. Day; the nests were placed in sycamores, pines and oaks—one in a large pine tree which overhung a deep and rocky canon. Mr. Norris has a set of two eggs which was taken February 26, 1886, near Tres Pinos, California, from a nest built in a solitary live oak standing in a wheat field, on the side of a gulch. This nest was very large, nearly four feet in depth and five feet in diameter; it was composed of sticks and lined with straw stubble, green grass and twigs in leaf. The eggs are whitish, heavily blotched with chestnut, and pale lavender under-shell markings; sizes, 2.86 x 2.21, 2.89 x 2.29. Mr. J. R. Chalker, in the seasons of 1886-7-8, collected ten sets of the eggs of this bird in San Benito county, California, nearly all of which were taken from nests placed in trees. The first set was found February 26, and the others at various dates in the month of March. Two eggs was the usual number laid, and one set of three was taken. A nest in a lofty red-wood tree, ninety-four feet from the ground, is described as being made of large sticks, lined with red-wood twigs and straw-stubble. Nests were also found placed on almost inaccessible cliffs. The eggs in colors varied from white, unmarked, to faintly and heavily marked specimens. One set was found which was densely blotched with reddish-brown all over. Mr. Norris has another set of two eggs taken in San Benito county, California, which is dull white, thickly spotted and sprinkled with chestnut red and under-shell markings of pale lavender; sizes, 3.05 x 2.17, 3.01 x 2.14.

[351.] *Haliaeetus albicilla* (LINN.) [452.]**Gray Sea Eagle.**

Hab. Northern portions of Europe and Asia; Greenland.

A large dusky-brown species known as the White-tailed or Gray Sea Eagle. Included in our North American fauna upon its occurrence in Southeastern Greenland. It is common to the sea coasts of Europe and is rarely found inland. Breeds on the coasts of Great Britain; its most favorite haunts being the shores and islands of the northern and western coasts of Scotland; the Hebrides, Orkney and Shetland Islands, where it nests on the rocky cliffs projecting over water. The nests are made of sticks or seaweed. Trees are also resorted to, though much less frequently. This Eagle also breeds on the coasts of Denmark, Norway and Sweden, and those of Russia.

The eggs are two or three in number, plain white, but occasionally with small faint spots of light brown. A set of two eggs is in Mr. Norris' collection, taken in Sweden, May 17, 1885. They are of a dull white, nest stained, and measure 2.89 x 2.21, 2.73 x 2.20.

352. *Haliaeetus leucocephalus* (LINN.) [451.]**Bald Eagle.**

Hab. Whole of North America, south to Mexico.

This great bird is common everywhere in North America. It passes through three stages of plumage; the first year the young are very dark-colored and are erroneously called "Black Eagles," the second they are "Gray Eagles," and are usually larger than the old birds. The residence of the White-headed Eagle is greatly influenced by the abundance of food, especially that of fish. It is found as far north as the Arctic Circle, and south as far as Florida and Texas. Breeds in the interior Arctic regions on the borders of lakes and rivers. Not an uncommon summer resident in Labrador, and breeds from thence southward along the Atlantic coast to Florida. Common resident of Oregon and Washington Territory. It is particularly common along the Columbia River, where the supply of fish is abundant. The eggs are deposited from December to April, according to locality. The Bald Eagle is not the sluggish, fish-eating bird that some writers state it to be, devoid of energy, obtaining its living by robbing the industrious Osprey. It has been known to swoop down upon flocks of Geese, Brant, Duck and Coot, select a particular bird, when the flocks scattered, and successfully carry off its victim to the nearest sand-bar. If it is a goose, and too heavy, both birds fall into the water, when the Eagle literally tows the prize along the surface until the shore is reached.* This bird also captures

* Wm. Brewster; Bull. Nutt. Club, Vol. V, pp. 57-58.

wounded ducks and other birds, and feeds on putrid fish and flesh. Florida seems to be a favorite breeding ground of the Bald Eagle, where they nest usually in January, but in the extreme southern portions—Cape Sable and the Keys in that region—they breed in December. The nests are massive structures, made of sticks, lined with roots or grass; they are placed in trees, and their distance from the ground ranges from twenty to ninety feet. On rocky coasts, destitute of suitable trees, this Eagle resorts to the cliff for nesting places, and the same eyrie is occupied for many years. The eggs are two, rarely three in number, and are white, or ivory-white, unmarked, usually with a granulated surface and nest-stained. Three sets of two eggs each are in Mr. Norris' collection; one from Merritt's Island, Florida, taken December 13, 1883, measure 2.79×2.21 , 2.74×2.09 ; another from Stone Island, Maine, collected April 21, 1887, measure 2.88×2.15 , 2.94×2.13 ; the third from Tampa, Florida, taken December 3, 1884, give the following dimensions: 2.70×2.12 , 2.70×2.10 . Four sets in my cabinet, collected by Mr. R. C. Stuart at Cape Sable, December 1, 4 and 16, exhibit the following sizes by sets: First, 2.57×2.12 , 2.98×2.22 ; second, 2.89×2.15 , 2.91×2.17 ; third, 2.73×2.09 , 2.63×2.02 ; fourth, 2.51×1.94 , 2.51×2.00 . These eggs were taken from huge nests, placed in mangrove trees, twenty to thirty-five feet from the ground.

353. *Falco islandus* BRUNN. [412.]

White Gyrfalcon.

Hab. Arctic regions, including Arctic America and Greenland.

The Gyrfalcons are large handsome birds and are found in various phases of plumage, being white, more or less barred and spotted with brownish and black. They are birds of boreal regions, and nest in trees or cliffs, preying upon the smaller quadrupeds, grouse, ducks, auks, etc. The adult of the present species averages as white as the Snowy Owl. It is called Greenland Gyrfalcon and breeds in Greenland and other portions of Arctic America.

Dr. Stejneger states that this species breeds on Bering Island. A pair had their nest in a steep and inaccessible rock, a couple of miles from the main village.

Mr. Norris has a set of three eggs collected in Southern Greenland, by G. N. Proctor, May 26, 1884; the eggs were taken from a nest on a ledge of rocks. They measure, respectively, 2.14×1.81 , 2.19×1.80 , 2.17×1.81 . The ground color is creamy-white, with the markings of reddish-brown distributed over the surface; in one specimen the specks and spots form an indistinct circle near the large end. The eggs are said to be two to four in number.

354. *Falco rusticolus* LINN [412a.]**Gray Gyrfalcon.**

Hab. Extreme northern portions of Europe, Asia and North America; Iceland, Southern Greenland; south in winter to the northern border of the United States.

The Gray Gyrfalcon is not uncommon in Iceland and Southern Greenland, and strays in winter into northeastern United States. Mr. Norris has a set of two eggs of this bird, collected by Mr. Proctor in Southern Greenland, on the 30th of May, 1884. Incubation was just begun, and the parent bird was shot. The nest was placed on a shelving rock. One of the eggs is marked, over a whitish ground, with small light reddish-brown spots sparingly sprinkled over the surface, confluent at the small end, where they almost obscure the ground color. The rest of the egg has a whitish appearance. The other specimen is heavily marked over the entire surface. Sizes, 2.26×1.82 , 2.25×1.86 .

354a. *Falco rusticolus gyrfalco*. (LINN.). [412b.]**Gyrfalcon.**

Hab. Northern Europe; interior of Arctic America, from Hudson's Bay to Alaska.

MacFarlane's Gyrfalcon breeds abundantly in the interior regions of Arctic America, where numerous skins and eggs are annually taken. It not infrequently visits the Northern United States in winter, and it is recorded as even reaching the Middle States. A set of two eggs, taken in the vicinity of Great Slave Lake, is in Mr. Norris' collection. These were taken with the parent bird, by M. D. Smith, June 4, 1884. The nest was placed on a shelf of a cliff. The ground-color of the eggs is of a light brownish-red, very faintly speckled in a few places with a dark color of umber-brown and red. The surface is much granulated. They measure 2.18×1.70 , 2.21×1.73 .

A single egg in the cabinet of Capt. B. F. Goss, taken at Fort Yukon, Arctic America, in June, 1865, is finely and evenly speckled with reddish-brown over the entire shell; the spots are partly confluent, giving the egg a reddish appearance; size 2.34×1.75 , which is unusually large.

354b. *Falco rusticolus obsoletus* (GMEL.) [412c.]**Black Gyrfalcon.**

Hab. Labrador; south in winter to Canada, Maine and New York.

This dusky form of the Gyrfalcon makes its home on the cliffs of the rugged coasts of Labrador. Its habits are said to be the same as those of any of the foregoing belonging to the genus, and the eggs are similar. All the eggs of the several forms of Gyrfalcons present common characteristics, and do not differ from each other more than eggs known to belong to the same species of hawk are found to vary. The average size of the Black Gyrfalcon's eggs is 2.26×1.77 .

355. *Falco mexicanus* SCHLEG. [413.]**Prairie Falcon.**

Hab. Western United States, from the Eastern border of the Plains to the Pacific Ocean. South into Mexico. Casual to Illinois.

The American Lanner or Prairie Falcon is an abundant species throughout the open country of Western United States. It is the representative of the two Lanners of the Old World. This Falcon is said to possess great strength and daring; it attacks and overpowers the great hares of the prairies, and other animals even larger and heavier than itself. It is very common in Wyoming and Washington Territories, Oregon and California.

The Prairie Falcon nests usually on cliffs and ledges of rocks, sometimes in cavities in trees. The composition of the nests is sticks with a lining of grasses. In some of the rocky canons of Colorado nests of this hawk have been found on the tops of those massive sandstone columns that stand solitary and alone like huge chimneys.

The eggs are two to five in number. Three sets of the eggs of this species are in the cabinet of J. Parker Norris. One of five eggs, collected by Walter E. Bryant, near Mt. Diablo, California, exhibit the following dimensions: 2.00 x 1.56, 1.99 x 1.56, 1.98 x 1.59, 2.11 x 1.57, 1.93 x 1.56. These were laid upon the sand in a cavity in a large boulder. They are handsome eggs, creamy ground color, almost wholly obscured with specks, spots and cloudings of cinnamon and vinaceous-cinnamon. The second set is of two eggs taken in Sweetwater county, Wyoming, May 1, 1887; the nest was on a rocky mound, along the Big Sandy River. The eggs are quite different from each other in appearance; in one the ground color is cinnamon, sprinkled all over with Mars brown; size, 2.13 x 1.66. The other has a ground color of russet, sprinkled all over with burnt umber; size, 2.14 x 1.68. The third set consists of three eggs. They were collected May 6, 1888, in Sweetwater county, Wyoming. The nest was on a rock on the bank of the Big Sandy River. The ground color varies from a deep cream to a hazel, and it is almost wholly obscured with cinnamon, rufous and light chestnut. They measure 2.28 x 1.68; 2.10 x 1.64; 2.20 x 1.67.

356. *Falco peregrinus anatum* (BONAP.) [414.]**Duck Hawk.**

Hab. Whole of North America.

The Peregrine Falcon, Great-footed Hawk, or Wandering Falcon, as this species is variously called, is distributed throughout North America at large, but it can hardly be considered common anywhere. The Duck Hawk breeds as far south as latitude 36°, and usually in

mountainous regions, or in the vicinity where water fowl are abundant. The nests are placed in natural cavities in trees, and on the sides of rocky cliffs.

Col. N. S. Goss states that this Hawk is not an uncommon resident of Kansas, and that it begins laying early in March. It is known to breed in many of the rocky regions and along the coasts of the New England States; in Pennsylvania, New York and in Michigan. It has been found nesting in the Anderson River regions in Arctic America, in Alaska, and on the coast of Labrador.

This species is often called Bullet Hawk, being the terror of ducks and other water fowl, pursuing and striking them down while on the wing, often seizing the bird which the hunter has killed, carrying it off when almost within his reach.

The eggs of the Duck Hawk are three or four in number, and measure 2.15×1.62 . They vary from creamy-white to reddish-brown, spotted, blotched and dotted with reddish-brown and chocolate of varying shades. Mr. Norris has a set of three eggs, taken April 14, 1876, at Michigumni, Mich. The nest was placed on a ledge of rock, on the face of a bluff; it was composed of a few twigs, some grass and a few feathers. The eggs are dull white, almost wholly obscured by innumerable specks and spots of vinaceous-cinnamon; sizes, 2.09×1.75 , 2.06×1.70 , 2.05×1.64 .

356a. *Falco peregrinus pealei* RIDGW. [414a.]

Peale's Falcon.

Hab. Aleutian and Commander Islands, south along the Pacific Coast to Oregon.

Dr. Leonard Stejneger states that the "Black Hawk," as it is called, is a common resident of Copper and Bering Islands, breeding in high and inaccessible cliffs. The eggs are not described, but are doubtless similar to those of *F. peregrinus*.

357. *Falco columbarius* LINN. [417.]

Pigeon Hawk.

Hab. North America in general, south in winter to West Indies and northern South America.

A handsome little Falcon, generally distributed throughout North America, and known to breed in various sections from latitude 40° northward, but the majority breed north of the United States. It subsists mostly on smaller birds, together with an occasional mouse or small squirrel, capturing them on the wing. When in pursuit of its prey the speed of its flight is something astonishing. Known to breed as far north as the Anderson and McKenzie River regions in Arctic America, and it is common in Alaska. During the breeding season it is found as far south as New Brunswick and Nova Scotia, in various

New England States, New York, Delaware, etc. It formerly bred in Ohio, but not of recent date. In the West it has been found breeding in Washington Territory, Oregon, Idaho and Utah.

Mr. Norris' cabinet contains two sets of four eggs each; one collected in the Wasatch Mountains, Utah, May 29, 1868. They have a cinnamon ground color, heavily spotted and blotched with burnt umber; sizes, 1.56 x 1.25, 1.59 x 1.25, 1.56 x 1.21, 1.59 x 1.23. Another set from Bingham county, Idaho, taken May 13, 1885, have a creamy-white ground color, sprinkled, spotted and blotched with chestnut; sizes, 1.44 x 1.22, 1.56 x 1.24, 1.52 x 1.25, 1.47 x 1.22.

The nests of this Hawk are variously situated; in the cavity of a cliff, in the hollow of a tree, on the branches of trees, and sometimes under the roofs or between the rafters of ruined or deserted buildings.

358. *Falco richardsonii* RIDGW. [418.]

Richardson's Merlin.

Hab. Interior of North America, northward to the Arctic regions, south in winter to Texas and Arizona; straggles west to the Pacific coast.

Richardson's Merlin is said to breed in the Rocky Mountains of Colorado, and from thence northward. Its habits in general are identical with those of *F. columbarus*. Professor Ridgway describes a single specimen of the egg of this bird as "buffy-white, handsomely marbled and irregularly spotted with madder-brown;" size, 1.52 x 1.22.*

359. *Falco fusco-cærulescens* VIEILL. [419.]

Aplomado Falcon.

Hab. Southern Texas, New Mexico and Arizona, south to Patagonia.

This beautiful bird, known as the Femoral Falcon, is common, and has a wide range in South and Central America; and specimens of the bird, its nests and eggs have been taken in Southern Texas, along the banks of the Rio Grande, and in Arizona. Dr. James C. Merrill found nests of this species on June 16, 1877, and May 7, 1878, near Fort Brown, Texas; they were placed on the tops of the low Spanish bayonet, and were simply slight platforms of twigs with depressions, lined with a little grass. Two nests contained three eggs each.

The eggs measure 1.78 x 1.34, 1.84 x 1.29, 1.73 x 1.32. Their ground color is white, but so thickly dotted with reddish as to appear of that color; over these are somewhat heavier markings of deeper shades of brown. The three others measure 1.80 x 1.29, 1.77 x 1.33, 1.88 x 1.33.

360. *Falco sparverius* LINN. [420, 420a.]

American Sparrow Hawk.

Hab. North America in general, South to Northern South America.

This beautiful little Hawk is abundant everywhere in North

* Manual of North American Birds; p. 251.

America, and is familiar to every boy who has been in the fields. Here it may be seen hovering almost motionless in mid air, then suddenly swooping down to the ground, arises again with perhaps a field-mouse in its talons. From this habit it receives the name of Mouse Hawk, although it also preys upon sparrows and other small birds. It is found almost everywhere, though most abundant along streams where the high sycamores whose natural cavities furnish suitable nesting places, but meadows and fields are its retreats when in search of food. It builds no nest, but deposits its eggs in the natural cavities of high trees, often in the deserted holes of woodpeckers, or in crevices in rocks or nooks about buildings. In the West it frequently occupies a deserted Magpie's nest. I have eggs of this Hawk taken from a crevice in a stone quarry on the Scioto River, where the birds have nested for years. Boxes on farm barns, provided for domestic pigeons, are often appropriated by the Sparrow Hawk, and it always proves to be a peaceable neighbor. The cavities where the eggs are deposited generally contain no lining. Dr. Merrill examined a number of nests in Montana, and the eggs were deposited in many cases on a slight bed of leaves or grasses or a few chips.

The eggs of the Sparrow Hawk are four or five, rarely six in number. A series of forty eggs before me exhibit the usual wide diversity of coloration that is to be found in eggs with spotted shells. Most of my eggs are from Ohio, Indiana and Kentucky, while two sets are from California. The ground color varies from a yellowish or creamy-white to reddish or pinkish-buff; the surface is sprinkled, splashed, blotched, spotted and clouded with shades of chestnut and cinnamon brown, and the markings may be more numerous and heavier at either end, and they may be so confluent as to conceal the ground color. Eight eggs collected near Banning, Cal., April 10, 1884, measure 1.28 x 1.05, 1.30 x 1.09, 1.30 x 1.07, 1.32 x 1.09, 1.36 x 1.07, 1.35 x 1.07; 1.36 x 1.11, 1.38 x 1.15. The largest eggs I have are from Ohio, taken by Robert Linton, April 20, four in number. Sizes, 1.37 x 1.15, 1.40 x 1.13, 1.38 x 1.12, 1.44 x 1.16. The average size of the Sparrow Hawk's eggs is 1.36 x 1.12. They are usually deposited in April or in the first half of May.

362. *Polyborus cheriway* (JACQ.) [423]

Audubon's Caracara.

Hab. Northern South America (Ecuador and Guiana) north to the Southern border of the United States, Florida, Texas and Arizona.

Common to the Southern border of the United States, and known as the Mexican Eagle or Buzzard—intermediate between the Eagles

and Buzzards, and resembling both in its habits. It catches some of its prey living, but feeds readily upon dead animals. Although sluggish at times, it is said to fly well, moving in a direct line, resembling the Black Vulture somewhat, flapping and sailing alternately, but when high in air, circles like a Hawk or Eagle.

Dr. Merrill records this bird as a common resident, but more abundant in winter than summer in the vicinity of Fort Brown, Texas, and Mr. George B. Sennett also mentions it as not uncommon in the region of Brownsville. It has been found breeding as far north as Comal, Hays and Lee counties, Texas, in the months of March and April, and in Jefferson county as late as March 30. Mr. Stuart informs me that he has always met with this bird breeding on the large prairies of Southern Florida in March and April. Eggs were taken April 4. The tops of the cabbage palmetto trees are their favorite nesting places in that region. The nests in Texas and Mexico are built in trees or bushes, and sometimes in cliffs; they are bulky platforms of branches, with a slight depression, lined with twigs, roots and grasses, and frequently altogether without lining. Both sexes incubate. Two or three eggs are laid, and they are noted for the beauty of their coloration. On a ground color varying from light and dark cinnamon to reddish and umber-brown, are specks, spots, blotches and cloudings of yellowish or reddish-brown, bright chestnut, umber or claret-brown. The markings are variously distributed over the surface; in some specimens they are dispersed over the entire egg, while in others scattering or more abundant at the smaller or greater half; occasional specimens are found almost entirely unmarked. The sizes vary from 2.10 to 2.92 in length by 1.37 to 1.90 in breadth.

Mr. Norris has a series of fifteen sets in his collection—eight sets of two eggs and seven sets of three.

364. *Pandion haliaetus carolinensis* (GMEL.). [425.]

American Osprey.

Hab. Nearly cosmopolitan. In America from Alaska and Hudson's Bay south to West Indies and Northern South America.

This winged fisher inhabits the entire temperate North America, breeding anywhere in suitable places throughout its range. Found about inland waters, and particularly along the sea coast. Mr. W. W. Worthington, of Shelter Island, N. Y., says they are exceedingly variable in the choice of a nesting place. On Gardiner's Island they all build in trees at distances varying from ten to seventy-five feet from the ground; on Plum Island, where a great many of them breed, a large number place their nests *on the ground*, some being built up to the

height of four or five feet, while others are simply a few sticks arranged in a circle, and the eggs laid *on the bare sand*. On Shelter Island they build on the chimneys of houses, and a pair has a nest on the cross-bar of a telegraph pole. Another pair has a nest on a large rock in Gardiner's Bay, near Gardiner's Island. They are made chiefly of coarse sticks and sea weed and anything that is handy, such as pieces of dry cow dung, bones, old shoes, straw, etc.

A curious nest of the Fish Hawk was found by Mr. S. C. Shick in May, 1888, on the coast of New Jersey. A set of three eggs was taken, and upon descending the tree, Mr. Shick observed a nest of the Purple Grackle, *Quiscalus quiscula*, securely imbedded in the loose material of the Osprey's nest; from this he took five eggs. At the bottom of the Osprey's nest was a thick, rotten limb, in which there was a Tree Swallow's nest containing seven eggs.

Mr. Worthington, who has collected hundreds of the eggs of this species, and to whom I am indebted for a large series, says the largest set of eggs he has ever taken or seen is four; the usual number, however, is three, though sets of two are common. They are subject to great variation; the ground color is of a yellowish or creamy-white, spotted, streaked and blotched with reddish-brown and umber, so thickly at the larger end as to completely obscure the ground, some are marked chiefly at the smaller end; in a series of two hundred eggs before me, there is a wonderful diversity of coloring; some are almost entirely unmarked. The shapes and sizes also exhibit great variations; Four selected specimens measure 2.05×1.65 , 2.21×1.76 , 2.42×1.76 , 2.54×1.87 . The average size is 2.40×1.75 .

365. *Strix pratineola* BONAP. [394.]

American Barn Owl.

Hab. United States in general, south into Mexico.

A beautiful ochraceous-yellow or amber-colored owl; sometimes called the "Monkey-faced Owl." A constant resident of the southern portions of the United States. Mr. Stuart says that in Florida the Barn Owl breeds most generally in March, usually in hollow trees, sometimes in deserted buildings or in the wrecks of boats left along the coast. I am informed by Mr. Shields that in the region of Los Angeles, California, this Owl nests almost anywhere; in church towers, hollow trees, holes in banks, in barns, pigeon houses, old crows' nests, and even in holes *in the ground*. He took a set of five eggs from a nest in a burrow far out upon the plains. The breeding season he states begins about the first of April, and continues until the last of June. Natural cavities of trees are this bird's usual nesting places.

Mr. Samuel C. Evans writes that along the Santa Ana River are high banks, perforated with holes, in which these owls nest. The eggs are often found in various stages of incubation in the same nest—some fresh and others nearly hatched. The nests are scantily supplied with a few sticks, straw, bones and other refuse of food. The number of eggs deposited by the Barn Owl ranges from five to eleven, rarely the latter number; some writers say three to ten. I know of several authentic sets of eleven. Their color is plain, dead white; their shape ovate. Six specimens measure 1.75×1.35 , 1.67×1.30 , 1.79×1.33 , 1.67×1.34 , 1.72×1.35 , 1.68×1.29 . Twenty-eight specimens have an average size of 1.74×1.30 . The largest egg of the Owl of which I have any record is in the collection of Joseph M. Wade, Boston, Massachusetts; it measures 1.97×1.40 .

366. *Asio wilsonianus* (LESS.) [395.]

American Long-eared Owl.

Hab. Temperate North America, south into Mexico.

The Long-eared Owl is a common resident and generally distributed throughout North America at large. It is of nocturnal habits, thus escaping observation, even where it is very common. Its food consists chiefly of mice and other small rodents. Breeds in suitable places wherever found. Forests of evergreens are favorite resorts of this species for breeding purposes. The nest is constructed with very little art; composed of a few sticks with a more or less complete lining of feathers. Various nesting places are selected; such as a hollow tree or stump, rift of rock, an old crow's or hawk's nest, which is repaired with a few sticks. In some localities the nest is made on the ground or on low bushes, and the same nest is occupied for several years. In the West where this Owl is very abundant it frequently deposits its eggs in old Magpies' nests. In California it begins nesting as early as the middle of February; in Kansas the eggs are deposited early in April.

The eggs are from three to six, and sometimes seven in number; they are white and oval in shape. Three eggs of this Owl are in my collection, taken from an old hawk's nest in Knox county, Ohio, April 20, 1884; they were so far advanced in incubation that they could hardly be preserved; these measure 1.62×1.32 , 1.57×1.28 , 1.59×1.35 . Three eggs from a set of five collected in Marion county, Ohio, April 9, 1884, measure 1.65×1.27 , 1.59×1.33 , 1.75×1.28 . A set of six eggs from an old Magpie's nest, collected in Douglas county, Colorado, April 20, 1885, measure 1.59×1.32 , 1.64×1.33 , 1.57×1.38 , 1.65×1.44 , 1.60×1.35 , 1.60×1.40 .

367. *Asio accipitrinus* (PALL.) [396.]**Short-eared Owl.**

Hab. Entire North America; nearly cosmopolitan.

The Marsh Owl, or Short-eared Owl, is found throughout North America at large, but is more abundant in the Arctic regions during the breeding season than it is in the United States. It frequents the marshes, the thickets of bottom lands, and it seems to be particularly common in the tall weeds and grass of fields and meadows. In the West it is found on the vast prairies, along sloughs, hiding in the daytime among the sage bushes and tall grass. This Owl is the species commonly shot by sportsmen, as it rises from a field, marsh or thicket. It is nocturnal, but often hunts its food on dark days; this consists of field mice, moles, shrews and other small rodents. The nest is made on the ground in the matted grass of marsh land; it may be found in a depression, at the foot of a bush, beside a log, or in a burrow made by a rabbit or a muskrat; a few sticks, soft grasses and a few of its own feathers usually comprise the nest proper; sometimes the eggs are laid on the bare ground. The complement of eggs ranges from four to seven. In Ohio they are deposited in the month of April, sometimes as early as the latter part of March, or as late as the middle of May. Within these dates it doubtless may be found breeding throughout the United States. A set of six eggs in my cabinet, with the parent bird, collected by A. Corwin, in Morrow county, Ohio, May 8, 1884, measure 1.60 x 1.20, 1.56 x 1.19, 1.50 x 1.21, 1.52 x 1.20, 1.64 x 1.18, 1.56 x 1.22. They are white and oval in shape. The nest was on the ground, between logs, at the edge of a blackberry patch. The average size of the eggs is 1.55 x 1.25.

368. *Syrnium nebulosum* (FORST.) [397.]**Barred Owl.**

Hab. Eastern United States, north to southern British Provinces; south to Georgia and Northern Texas.

Called the American Hoot Owl or Wood Owl, and Round-headed Owl. A large dark-eyed species, common to wooded lands of Eastern United States, especially bottom woods; those of swamps, along ravines and rivers where there is a heavy growth of tall timber. The loud, laughing notes of this Owl, heard in the night, are something terrible, and if heard about the farm-house or camp-fire will not soon be forgotten. Its flight is soft, as if on wings of down, noiseless, quick and easy. Nests in hollows of trees, in old nests of hawks and crows. In Ohio it is said to breed as early as the last of February, but I have always found it nesting in April and the first half of May. In New London county, Connecticut, Mr. C. L. Rawson has taken eggs

of this Owl in February, which were deposited on a solid cake of ice in a cavity or in the open nest; he states that of late years full clutches of eggs are deposited by the last of March. The usual time of nesting in Iowa is March and April. The same nesting place is occupied by the birds for years, even after being robbed many times.

The eggs are two or three in number, very rarely four; globular, white. Between the eggs of this species and those of the Great Horned Owl there is commonly considerable difference in dimensions in favor of the former, but sometimes they approach each other so closely that to identify them by size alone is impossible. The Barred Owls' eggs measure in long diameter from 1.87 to 2.20, and in short diameter from 1.50 to 1.75.

368a. *Syrnium nebulosum alleni* RIDGW. [397a.]

Florida Barred Owl.

Hab. Florida, Texas, Louisiana and adjoining regions.

A darker colored race found in Florida, Texas, etc. Mr. Singley states this is the commonest owl in Lee county, Texas, where it frequents almost exclusively the thick wooded bottom lands. He found seventeen nests in hollows of trees with eggs or young, and the number in each was invariably two. The sizes of a set of two eggs taken March 20, 1885, now in Mr. Norris' collection, are 1.89 x 1.58, 1.86 x 1.61; six other specimens measure 1.97 x 1.78, 1.90 x 1.61, 1.88 x 1.67, 1.89 x 1.60, 1.81 x 1.54, 1.87 x 1.63. The eggs are subspherical, pure white, smooth, without granulations.*

369. *Syrnium occidentale* XANTUS. [398.]

Spotted Owl.

Hab. Southwestern United States, California, Arizona, New Mexico, Lower California and Mexico.

By no means a common bird and comparatively little is known concerning its life history. The Western Barred Owl was first described in 1859 from a specimen which remained unique in collections until Captain Bendire rediscovered it in Arizona in the spring of 1872. A nest was found April 17, which appeared to have been built by the birds themselves, and was placed about thirty feet from the ground; composed of small sticks and twigs, lined with grasses, bark and a few feathers. It contained one white globular egg. Professor Ridgway gives the size of an egg as 2.05 x 1.80. Mr. Norris has a set of two eggs collected by E. M. Haight, near Riverside, California, May 19, 1885. They measure 2.11 x 1.67, 2.12 x 1.68; they were laid on the bare ground at the base of a large rock.

370. *Ulula cinerea* (GMEL.) [399.]

Great Gray Owl.

Hab. Arctic America, south in winter to the northern border of the United States.

An immense owl—one of the largest in North America,—round-

* Ornithologist and Oologist, XI, pp. 140-141.

headed and very much resembling the Barred Owl in appearance. It breeds far northward. Dr. Richardson met with this species in the fur regions and found it common on the borders of Great Bear Lake, keeping constantly in the woods, hunting hares and other smaller quadrupeds. May 23 a nest was found built on the top of a lofty balsam-poplar, composed of sticks with a lining of feathers. Mr. MacFarlane found this Owl abundant in the Anderson River region, and on July 19 discovered a nest built in the top of a pine tree, twenty feet from the ground; it was composed of sticks, mosses and thinly lined with down. The eggs are white, two or three in number, and the average size given is 2.16×1.71 .

371. *Nyctala tengmalmi richardsoni* (BONAP.) [400.]

Richardson's Owl.

Hab. Northern North America, south in winter to northern border of the United States.

The American Sparrow Owl, or Richardson's Owl, so far as known breeds in northern latitudes and is supposed to nest as far south as Nova Scotia. In Western Manitoba, in the Red River region, it is quite common in the wooded districts. Specimens of this Owl have been taken in various parts of the Arctic regions, as at Fort Simpson, Fort Resolution, etc., and in Alaska. Dr. Richardson states that it inhabits all the wooded country from Great Slave Lake to the United States. The nest is described as built in trees, composed of grass and leaves; the eggs two to four in number and their average size 1.35×1.14 . They are globular in shape and white in color.

372. *Nyctala acadica* (GMEL.) [401.]

Saw-whet Owl.

Hab. Whole of North America; breeding from Middle United States northward.

The Acadian Owl is the smallest member of the family found in Eastern North America, and it inhabits the United States from the Atlantic to the Pacific, ranging north into British America; southward in wooded, mountainous regions, into Mexico. Its shrill, harsh notes, resembling the filing of a saw, have occasioned its name.

The bird has been found breeding in Massachusetts, Maine, New York, etc., nesting in holes of trees, artificial nests, and in the old nests of herons. Mr. William Brewster records a set of four eggs taken April 5, near Tyngsboro, Massachusetts, by Mr. W. Perham; they were deposited in artificial nests made from sections of hollow trunks, nailed to trees in woods. The sizes of four eggs are given, as follows: $1.21 \times .95$, $1.21 \times .98$, $1.25 \times .96$, $1.25 \times .97$. Other eggs were taken from similar nests by Mr. Perham.

Near Utica, New York, Mr. Egbert Bagg, on the dates of April

7, 21 and 30, 1886, found four sets of the eggs of this species; two sets of five and two of seven eggs each. They were taken from deserted woodpeckers' excavations in tree stubs, ranging from twenty-two to fifty feet from the ground. The eggs were laid on the rotten chips in the cavities, and a few feathers of the Owl were present. The eggs are white, nearly elliptical; the average size is 1.20 x 1.02. The number ranges from four to seven.

373. *Megascops asio* (LINN.) [402.]

Screech Owl.

Hab. Eastern United States, north to British Provinces; west to the Great Plains, south to Georgia.

The Mottled Owl is resident throughout Eastern United States and Canada; west to the Rocky Mountains; on the limits of its range shades into several varieties. The eggs of the different varieties of *Megascops* are not distinguishable. The nest of the Little Horned or Red Owl, as it is often called, is made in a hollow tree or stump, sometimes in the topmost corner inside of an old barn or shed. I have found several nests between the broken siding of ice-houses along streams. The materials used are a few sticks, leaves, feathers, etc., on which the eggs are laid. In the month of April, 1885, a farmer brought me nine young, with the parent birds, which he had taken from a hollow tree. One of the old birds was gray, the other red, and some of the young were of the red, and some of the gray type of coloration, this being a common occurrence.

The eggs of this bird range usually from four to six, frequently eight, and rarely nine; they are white, nearly round and average 1.40 x 1.20.

373a. *Megascops asio floridanus* (RIDGW.) [402a.]

Florida Screech Owl.

Hab. Florida, Southern Georgia, occasional in Louisiana.

A smaller and much darker form in the red and gray phases of plumage inhabiting Florida and adjoining regions. Its habits are the same as those of *M. asio*, and eggs in my collection are not distinguishable except, perhaps, by their smaller size, 1.32 x 1.15.

373b. *Megascops asio mcallii* (CASS) [402b.]

Texas Screech Owl.

Hab. Rio Grande Valley of Texas, south to Guatemala.

This is a slightly darker bird than *asio*, of the same size as *floridanus*, and found in the red and gray plumage. Three eggs in my cabinet, collected near Corpus Christi, March 20, 1885, measure 1.36 x 1.17, 1.33 x 1.18, 1.36 x 1.15.

373c. *Megascops asio bendirei* (BREWST.)**California Screech Owl.**

Hab. California.

No red phase of plumage is known in this bird; it is grayish-brown or brownish-gray, and very much like *M. asio*, being of the same size. Eggs in my collection from Petaluma and Riverside, California, do not differ from those of the Eastern representative. Four specimens measure 1.38 x 1.18, 1.40 x 1.18, 1.47 x 1.19, 1.47 x 1.20. The average of ten eggs is 1.40 x 1.17.

373d. *Megascops asio kennicottii* (ELLIOT.) [402d.]**Kennicott's Screech Owl.**

Hab. Region of the Northwest coast, from Sitka to Oregon, east to Montana.

Kennicott's Screech Owl, in the red and gray phase of plumage, averages considerably larger than *asio* and *mccallii*. Length about eleven inches.

Its general habits are essentially the same as those of *M. asio*. Captain Bendire gives the sizes of a set of four eggs taken from a hole in a cottonwood in Washington Territory, April 7, as 1.47 x 1.28, 1.43 x 1.29, 1.45 x 1.30, 1.46 x 1.30. The cavity from which these eggs were taken was sixteen inches deep and twenty-five feet from the ground.

373e. *Megascops asio maxwelliæ* (RIDGW.) [402c.]**Rocky Mountain Screech Owl.**

Hab. Rocky Mountain region, from Colorado north to Montana.

This form of the Screech Owl has been named in honor of Mrs. M. A. Maxwell, of Boulder, Colorado, a noted huntress and taxidermist. No gray phase is observed in this form, but the whole plumage is very light colored. Mr. Norris has a set of four eggs, taken near Loveland, Colorado, April 20, 1888; they measure 1.49 x 1.19, 1.46 x 1.20, 1.46 x 1.21, 1.54 x 1.26.

373f. *Megascops asio trichopsis* (WAGL.) [403.]**Mexican Screech Owl.**

Hab. Northwestern Mexico into Arizona, New Mexico and northward to Colorado.

The plumage of this form is described as nearly ashy-gray above, with broad blackish streaks in strong contrast, blackish bars on lower parts numerous, black border on the face and black spots on the breast. Its general habits do not differ from those of its Northern and Eastern relatives. Average size of the eggs, 1.30 x 1.10.

374. *Megascops flammeolus* (KAUP.) [404.]**Flammulated Screech Owl.**

Hab. Northern California and Colorado, southward to Mexico and the highlands of Guatemala.

A small species whose general appearance is that of a young or rather an ungrown Mottled Owl, *M. asio*—the toes are entirely naked

to the extreme base. A nest of this Owl was found in Fremont county, Colorado, June 15, 1875, by Charles E. Akin; it was in a dead pine tree, and contained one egg, which was taken with the female bird. In color and shape the egg resembles those of other species of the genus, and measures 1.12 x .95.

375. *Bubo virginianus* (GMEL.) [405.]

Great Horned Owl.

Hab. Eastern North America, westward as far as the Mississippi Valley, and from Labrador south to Costa Rica.

Literature abounds with the observations of naturalists on the habits of the Great Horned Owl, and the pages of prose, poetry and song graphically depict its many characteristics.

It is known as the Hoot or Cat Owl, or "Hooter," and is the largest of all the owls with ear-tufts. A common bird throughout North America at large in its several geographical varieties, the present species being restricted to the region east of the Mississippi Valley. Barn-yards are its favorite hunting grounds, and its depredations done there among the poultry are well known. Rabbits, raccoons, weasels, mink and other quadrupeds, with an occasional quail or grouse, make up a large portion of this bird's food. The bones, fur and feathers of these animals, and other refuse of food may be found in their nests in greater or less abundance, and the nesting places are also frequently impregnated with the odor of the skunk. This bird does not migrate, but is resident wherever found. It generally breeds earlier than the Barred Owl. The time of nesting is usually in February and March, and I know of eggs comparatively fresh taken April 15, but through extensive research and information furnished by correspondents regarding the nesting, the greater portion of the eggs are deposited in the latter part of February or the first part of March; at least more eggs have been collected at that time than at any other period; and these dates will apply to the nesting of all other forms of this Owl.

Deep woods are its favorite haunts while breeding, where its bulky nests of sticks, bark, leaves, etc., may be found in the branches of trees ranging from twenty to one hundred feet from the ground, or the eggs may be deposited in a natural cavity of a tree. The deserted nests of crows or those of hawks are appropriated—the nests of the Red-tail, Red-shouldered and Cooper's Hawks being common receptacles. In Florida and some other sections the nests of the Bald Eagle, Osprey and Caracara Eagle are frequently taken possession of by this Owl, and the same pair of birds will occupy a nest for successive years, even after being annually molested and robbed. A rap on the trunk of the tree will generally cause the birds to leave the nest. Besides the mater

already mentioned, the cavities will often contain weed-stems, corn-stalks, corn-silk and feathers from the breast of the mother-bird, and again the eggs will be found laid upon the bare ground or decayed wood of the cavity in the presence of a few bones and skulls of animals.

This Owl deposits two or three white, globular eggs.* Five sets of two eggs each are in my cabinet from Florida, Indiana, Iowa and Ohio; the ten specimens measure, 2.18×1.72 , 2.20×1.78 , 2.24×1.80 , 2.26×1.88 , 2.26×1.79 , 2.29×1.82 , 2.31×1.88 , 2.30×1.89 , 2.28×1.74 , 2.32×1.80 .

A large series in Mr. Norris' collection show great variation in size.

375a. *Bubo virginianus subarcticus* (Hoy.). [405 a, part.]

Western Horned Owl.

Hab. Western United States, from the Great Plains westward (except the northwestern coast); east casually to Illinois, Wisconsin and western portion of Canada, north to Manitoba, south to Mexican table lands.

A lighter colored form inhabiting Western United States. Its nesting, eggs and other characteristics are the same as those of *B. virginianus*. Four eggs in my collection from Riverside, Cal., taken in March, 1884, measure, 2.16×1.78 , 2.20×1.74 , 2.25×1.76 , 2.16×1.78 .

Mr. Norris has three sets of two eggs each; one from Berkeley, Cal., taken April 10, 1880, sizes, 2.05×1.17 , 2.02×1.75 ; another from Los Angeles county, Cal., collected March 10, 1887, show the following measurements: 2.07×1.75 , 2.13×1.71 . The third set were also taken in Los Angeles county, California, on March 3, 1887, and measure 2.10×1.73 , 2.14×1.71 .

375b. *Bubo virginianus arcticus* (SWAINS.) [405 b.]*

Arctic Horned Owl.

Hab. Chiefly the interior of Arctic America (Fur Countries), south in winter to the Northern Rocky Mountains and Great Plains; Dakota, Montana and Wyoming.

This bird's general plumage is whitish through the fading of the ground color and restriction of the dark markings; beneath pure white, with dark markings. Prof. Ridgway gives the average size of the eggs as 2.19×1.91 .

375c. *Bubo virginianus saturatus*. RIDGW. [405 c.]

Dusky Horned Owl.

Hab. Northwest coast, from Oregon north to Alaska; Labrador.

An extremely dark colored race, with the face usually sooty-brownish or grayish-white. Mr. Norris has a set of two eggs of this bird taken near Fort Spokane, Washington Territory, on March 14, 1886. They measure 2.25×1.85 , 2.23×1.90 .

* In exceptional cases four eggs have been taken from a single nest, but I am not aware of an authentic set of five eggs or the extreme number of six of the Eastern Horned Owl as has been reported of *B. v. subarcticus* in Colorado. I have in several instances received sets of four eggs of *B. virginianus*, as stated in the last edition of this work.

376. *Nyctea nyctea* (LINN.) [406.]**Snowy Owl.**

Hab. Northern portions of the Northern Hemisphere; in North America, migrating southward in winter to the Middle States, straggling to Virginia, South Carolina, Texas, and even to the Bermudas.

This large and beautiful bird inhabits the boreal regions of both continents. It is commonly called White Owl, and is found with the plumage almost immaculate, or marked with bars and spots of black and slaty-brown. It is a bird of wide range, extending its migrations as far south as the sub-tropical regions. During some winters it is very abundant in the United States, especially in the Northern, Middle and Eastern States. The food of the Snowy Owl consists of hares, squirrels, muskrats, and other small animals, and, as the bird is not exclusively nocturnal, it catches these quadrupeds in daytime as readily as any hawk. It is said to probably breed in Northern Maine, Canada, Nova Scotia, and New Brunswick, as it does in Newfoundland and Labrador. Common during the summer months in the region of Hudson Bay and other portions of Arctic America, nesting on the ground in moss on the dry parts of marshes. It is recorded as a rare summer resident near Lake Winnipeg, Manitoba. A nest containing six eggs of this Owl was found in Manitoba by Mr. Le Grand T. Meyer, on the 26th of February, 1879. The measurements of the eggs are as follows: 2.59×1.93 , 2.58×1.93 , 2.56×1.91 , 2.55×1.91 , 2.55×1.90 , 2.53×1.90 . The nest from which these eggs were taken was about eighteen inches above the level of the prairie. It was made of hay, grass and sticks, warmly lined with feathers from the breast of the bird. The eggs were deposited at irregular intervals, as shown by the considerable difference in the size of the embryos which they contained. The eggs were oval-oblong in shape, with a remarkably smooth, glossy white surface. As many as ten eggs are said to be laid by this species, and in Arctic America they are usually deposited in May.

377a. *Surnia ulula caparoch* (MULL.) [407.]**American Hawk Owl.**

Hab. Northern North America; south in winter to Northern border of the United States; occasional in British Islands.

A bird hawk-like in appearance, but nevertheless a true owl, and being the least nocturnal of its tribe, it is called Day Owl. Its food is chiefly field-mice and other small rodents, hawked for in broad daylight. The Hawk Owl inhabits the northern portions of North America, and is said to breed from Maine northward.

Dr. Richardson notes this species as common throughout the Fur Countries from Hudson Bay to the Pacific. It was found in considerable numbers by Mr. MacFarlane in the Anderson River region, nest-

ing in top branches of pine trees. Dr. Brewer describes a nest containing six eggs taken by Mr. MacFarlane on the 28th of April, which was composed of dry sticks and lined with hay and a few feathers. Another, which contained six eggs, was lined with green mosses and deer's hair. One nest contained as many as seven eggs, and all but one had as many as six. Mr. R. B. Ross found this Owl breeding in the Great Slave Lake district as early as the last of March or first of April. A common species about Nulato, on the Yukon, Alaska, where Mr. W. H. Dall, on April 5th, obtained six eggs which were laid in a hollow, in the top of an old birch stump, fifteen feet from the ground. The eggs are said to range from two to six in number, dull white in color, rounded-oval in shape, and average in their long diameter 1.53, and in their short diameter 1.25.

The Hawk Owl of the northern portions of the Old World, *Surnia ulula*, is said to be an accidental visitant to Western Alaska.

378. *Speotyto cunicularia hypogæa* (BONAP.) [408.]

Burrowing Owl.

Hab. Western United States, from the Great Plains to the Pacific, south to Guatemala. Accidental in New England.

The Burrowing Owl, made famous by popular stories of its living in burrows and holes of the ground with rattlesnakes, gophers and prairie dogs, inhabits the treeless regions of Western North America, from the plains to the Pacific. It is found in all suitable places in Kansas, Colorado, Utah, Nevada, Nebraska, Indian Territory, Wyoming, Dakota, Montana, New Mexico, Arizona, Washington Territory, Oregon and California. They are usually abundant, and congregate in large communities, breeding in deserted burrows of quadrupeds, such as the prairie dog, badger or gopher, and there is no truth in the statements made by travelers that the owls, gophers and rattlesnakes dwell together in harmony. The Owls choose abandoned burrows, and if a snake or quadruped enters, it is only by accident or for the purpose of devouring the unsuspecting Owls. In Dakota and other regions as many as twenty of these birds may be found nestling together in one hole, at which time they are well supplied with food, such as mice, shore larks, etc. In some localities the nesting place is lined with fine weed-stalks, feathers, bits of skin, etc., as Mr. Fred. Corey informs me is the case in the vicinity of Santa Paula, Cal. Captain Charles E. Bendire says he never found any other material in the cavity occupied by the nest than broken pieces of horse or cow dung, in Washington Territory. Around the outside may be found bits of skins of gophers, rats, mice, and ears of small rabbits. The eggs are pure glossy white, nearly round,

although in a large series any shape may be found, from globular to pyriform. The number laid varies from four to ten, usually six or eight. Professor Evermann has a set of eleven which he collected near Santa Paula, Cal., April 14, 1881, and Captain Bendire records an extraordinary set of twelve, taken by Mr. Walter E. Bryant, near Carson, Nevada. The average size given by Captain Bendire in a series of two hundred and fifty specimens is 1.24×1.03 ; the smallest, $1.17 \times .97$, the largest 1.35×1.09 .

378a. *Speotyto cunicularia floridana* RIDGW. [408a.]

Florida Burrowing Owl.

Hab. Florida and adjacent Bahama Islands.

A smaller local race of Florida, having the lower parts of its plumage nearly pure white. In some places in Florida colonies of these birds are quite common, nesting in the same manner as *S. cunicularia hypogæa*. Four eggs from Southern Manatee county, Florida, taken April 10, 1885, measure, 1.24×1.05 , 1.23×1.02 , 1.22×1.02 , 1.25×1.05 .

379. *Glaucidium gnoma* WAGL. [409.]

Pygmy Owl.

Hab, Mexico; north to Colorado and Oregon.

The little Pigmy Owl, the true *G. gnoma*, belongs to Mexico, and is found in the United States as far north as Colorado and Oregon. The California Pigmy Owl, *P. g. californica*, is restricted to the Pacific coast region, from Santa Cruz northward to British Columbia. Considering the two birds under one heading they may be found quite uncommon in suitable places throughout the mountainous portions of the West, but from their very small size and unobtrusive habits they are likely to be overlooked. The Pigmy Owl feeds upon insects and the smaller rodents, which it hunts by day as well as by night. Its flight is described as short, quick and jerking, similar to that of the Sparrow Hawk. Comparatively little has been written regarding the nesting and eggs of this bird.

Mr. William A. Cooper describes a nest which was found by Mr. George H. Ready, near Santa Cruz, Cal., in a deserted woodpecker's excavation in the trunk of a tree seventy-five feet from the ground. The burrow was about nine inches deep and two inches across the mouth. The nest was found June 8, 1876, and contained three eggs, deposited upon a bed of twigs and a few feathers for a lining, three inches deep. One egg was accidentally broken. The two remaining eggs are described as dull white, with a scarcely perceptible yellowish tinge. The surface is quite smooth, and has the appearance of having been punctured with a fine point over the entire egg. They are oblong-

oval in shape, more pointed at one end; sizes 1.17 x .87, 1.18 x .90; the larger specimen is more pointed. Incubation was far advanced, and the embryos were extracted with difficulty.* These eggs belong to *P. g. californica*.

381. *Micrathene whitneyi* (COOPER.) [411.]

Elf Owl.

Hab. Southern Arizona, Southeastern California, Lower California, south to Southern Mexico.

One of the smallest of all raptorial birds, first discovered by Dr. J. G. Cooper, the type specimen being an adult male, taken near Fort Mohave, California, April 26, 1861. Others were afterwards taken by Col. Grayson on islands off the western coast of Mexico. Capt. Bendire took several specimens in the dense mesquite thickets, near Rillito Creek, about seven miles from Tucson, Arizona, in April, 1872. He also found one of their nests with fully fledged young in a hole of a mesquite stump.

This Owl was found to be common by Mr. F. Stephens in the desert region about Tucson and Camp Lowell. Mr. W. E. D. Scott states that it is decidedly the commonest Owl breeding in Southern Arizona (Pima, Pinal and Gila counties), and is very abundant during the breeding time, nesting in the woodpecker holes of the giant cactus. The eggs range from two to four in number, ordinarily three. Mr. Scott took a set of five from a nest. On one occasion, near Fuller's Ranch, about the last of May, 1883, Mr. Stephens and Mr. Scott collected a large number of the birds and their eggs in a few hours. Mr. Walter E. Bryant has a set of two eggs taken near Tucson, Arizona, May 28, 1885, by Mr. Herbert Brown. The nest was in an abandoned woodpecker's hole, in a cactus about twenty feet from the ground; the cavity was about eight or nine inches deep. The eggs measure 26.5 x 23.5, 26 x 22.5 mm. † Mr. Emerson has a set of three, taken by Mr. Stephens near Camp Lowell, May 24, 1884. They were found in a woodpecker's burrow in a giant cactus, ten feet from the ground. The sizes are 27 x 23, 26 x 23 mm. ‡ Mr. Norris has a set of three eggs collected near Camp Lowell. They are pure white and nearly globular, and measure 1.04 x .93, 1.09 x .91, 1.12 x .91. These were taken from a woodpecker's hole in a giant cactus twenty feet from the ground.

* Bull. Nutt Club, Vol. IV, pp. 86-87. An account of these eggs and this nest was also published by Capt. Charles Bendire in Proc. Bost. Soc. Nat. Hist., Vol. XIX, p. 232.

† 1.04 x .93, 1.02 x .89.

‡ 1.06 x .91, 1.02 x .91, 1.06 x .91.

382. *Conurus carolinensis* (LINN.) [392.]**Carolina Paroquet.**

Hab. Formerly South Atlantic and Gulf States; up the Mississippi to Missouri; up the Missouri River to the Platte. Colorado; regularly to Ohio, Indiana, Illinois, Iowa, Wisconsin, Nebraska, etc. Formerly north in the Eastern United States to Pennsylvania and the Lakes.

In the first part of the present century the beautiful Carolina Parakeet was very abundant in the South Atlantic and Gulf States, and its migrations extended far northward. It has continued to diminish in number until it is now nearly exterminated, existing only in remote localities of the lower Mississippi Valley and Gulf States. It is still abundant in some regions of Florida. Said to breed in companies in hollow trees, usually cypress and sycamores. In a collection of eggs made in Georgia between the years 1853 and 1865 is a set of two eggs of this species, taken April 26, 1855. Mr. H. B. Bailey describes them as creamy-white, and pointed at one end; sizes 1.44 x 1.14, 1.45 x 1.10. These were deposited in a hollow tree on chips at the bottom.* Prof. Ridgway describes the eggs of this bird as ovate, short ovate, or rounded-ovate, pure white, and gives the average size as 1.39 x 1.07.

[383.] *Crotophaga ani* LINN. [389.]**Ani.**

Hab. West Indies; eastern South America, rare or casual in Florida and Louisiana; accidental near Philadelphia.

The Ani, Black Witch or Savanna Blackbird, so grotesque in appearance is only of rare or accidental occurrence in the United States, as in Southern Florida, and in other regions as above cited. The bird is from thirteen to fifteen inches long; tail eight inches; the bill is exceedingly compressed and smooth, or with a few traverse wrinkles on the upper mandible; the color of the plumage is black, with steel-blue reflections. It is common throughout the West Indies and in Northeastern South America. Observers state that several of these birds will form sort of a community or colony to build an immense nest, which is used in common. It is a large mass of interwoven twigs, lined with leaves, and is built in trees or bushes, sometimes in marshes. From five to fourteen eggs, or even more, are deposited by the several birds. These are of a glaucous-blue in color, usually covered with a light chalky crust. Their average size is 1.38 x 1.00.

384. *Crotophaga sulcirostris* SWAINS. [390.]**Grooved-billed Ani.**

Hab. Lower Rio Grande Valley in Texas and Lower California southward to Peru.

The Grooved-billed Ani was formerly only known from Yucatan, Central and South America. Between the years 1865 and 1871 it was discovered in Western Mexico, and finally added to the fauna of the

* Bull. Nutt. Club., VIII, 40-41.

United States by Mr. George B. Sennett, who shot an adult male on May 19, 1878, at Lomita Ranch, on the Rio Grande, which is seven miles above Hidalgo.

The eggs of this species are said to range from five to eight, usually five in number, and of the same color as those of the last species. No peculiarity seems to be noted in the nesting of this species; no mention is made of eggs being laid in one nest by several females, as is the case with *C. ani*, and we would naturally expect the breeding habits of both species belonging to the same genus to be very much similar. Col. Grayson states that the nest is usually built in a thorny tree or bush, at a moderate height, and composed of thorns and dry twigs exteriorly, and lined with fibrous roots. He describes the eggs on the outside of the shell as rough and white, the inside green. The birds, he remarks, associate in small flocks of eight or ten, and are fond of picking ticks off the cattle.*

385. *Geococcyx californianus* (LESS.) [385.]

Road-runner.

Hab. Texas, New Mexico, north to Western Indian Territory and Kansas; Southern Colorado, westward to California; Lower California; south into Mexico.

The Ground Cuckoo, Snake Killer or Paisano, as it is differently called, is a curious long-tailed, chicken-like bird, noted for its swiftness of foot. It is found in Texas, New Mexico, Arizona and California southward. In Southern California, Mr. Shields states that this bird is abundant in the chapparal and sage bush regions. Its favorite food consists of small lizards and snakes. It nests in low trees, usually in the low branches of a cactus or in a thorny bush. A nest before me, collected in Lee county, Texas, by J. A. Singley, is a coarse structure made of sticks. It was placed in a haw bush about eight feet from the ground. The structure is thick and clumsy, with but a slight depression for the eggs. The latter are deposited at intervals of several days, and a perfectly fresh egg is often found with one on the point of hatching; or young birds of various sizes with partially incubated eggs in the same nest is of common occurrence. Mr. Shields found eggs as early as the last of March, and as late as the middle of June. Most of the eggs obtained by Mr. Sennett in Southern Texas were deposited in April. From two to twelve are laid, commonly five to nine; the general shape is ovate and the color white or buffy-white. Six selected specimens measure 1.56 x 1.20, 1.51 x 1.23, 1.60 x 1.18, 1.50 x 1.17, 1.57 x 1.14, 1.56 x 1.23, 1.58 x 1.19, 1.61 x 1.14.

* Lawrence's Birds of Western and Northwestern Mexico: p. 292.

386. *Coccyzus minor* (GMEL.) [386.]**Mangrove Cuckoo.**

Hab. West Indies (except Bahamas); Florida Keys; coast of Louisiana; Central to Northern and Eastern South America.

The Mangrove Cuckoo is very much like the yellow-billed species, *C. americanus*, with the lower parts of the plumage more deeply colored—deep ochraceous, often extending to the throat; bill similar to that of *C. americanus*.

This species occurs in nearly all of the West Indian Islands, except the Bahamas, and it is a rare summer resident of the Florida Keys. Audubon records it is a regular summer visitor to Key West and the other Keys. In the Island of Jamaica the Mangrove Cuckoo is said to breed from March to July, building in the low branches of trees and in bushes. The nest is described as a loosely made structure, composed of a few dry sticks. The eggs are three, rarely four, in number, of a glaucous-green color, oval-oblong in shape, and on the whole they are of the same size and general appearance as those of *C. americanus*.

387. *Coccyzus americanus* (LINN.) [387.]**Yellow-billed Cuckoo.**

Hab. Eastern North America, north to British Province, west to the edge of Great Plains, south in winter to tropical regions—West Indies, Eastern Mexico and Costa Rica.

This bird is known by several names, such as Rain Crow, Rain Dove and Chow-chow, which are likewise applied to the Black-billed species. Wherever woods and undergrowth abound in Eastern United States the Yellow-billed Cuckoo may be seen in the breeding season. Its peculiar, resounding notes resembling the syllables *kook-kook-kook* are probably uttered more frequently just before falling weather—hence the name, Rain Crow. Being somewhat nocturnal in their habits, the notes of both our Cuckoos are often heard at night. The nest will usually be found in a low tree or bush, sometimes it is placed in a brier patch close to the ground. Thickets along streams or upon islands are favorite nesting places. The usual distance of the nest from the ground is between five and ten feet. It is a slight structure of slender, dried sticks, sometimes twelve to fifteen inches long, but generally much shorter, bark-strips and catkins making up the fabric. Although near relatives of the notorious Cuckoo of Europe, which, like our Cowbird, lays its eggs in the nest of other birds; our Cuckoos generally respect the marriage tie, and are not altogether deserving of the stigma of the family name of Cuckoos of the Old World, although its eggs are sometimes laid in the nests of the Mourning Dove, Catbird, Cedar Waxwing, Cardinal Grosbeak, Robin, and others.

The eggs are deposited at intervals of two to five days, and frequently young are found in the nest with partially incubated eggs. Two to four are usually laid. Dr. Howard Jones, in "Nests and Eggs of the Birds of Ohio," says that when incubation does not begin until the complement is completed, as is commonly the case, four eggs, rarely six, make up the set. Mr. Norris has a set of six. The average size of twenty-eight specimens is 1.27 x .89. Fresh eggs may be found as early as the middle of May, in June, July and even August. Not infrequently are the eggs of the Yellow-billed and Black-billed Cuckoos found in the same nest. The color of the eggs is glaucous-green, of the same tint found in heron's eggs, which fades upon exposure to light, and when incubated, this color becomes several shades lighter than that in the fresh specimens.

* * *Coccyzus americanus occidentalis* RIDGW.

California Cuckoo.

Hab. Western United States, north to Oregon, east to New Mexico and Colorado, south over tablelands of Mexico.

Prof. Ridgway describes this western form as larger than *C. americanus*, with proportionately larger and stouter bill.* Mr. Norris has a set of three eggs taken with the parent bird June 4, 1888, near Salem, Oregon. The nest was the usual platform of sticks, which is characteristic of this family; situated in a cottonwood tree, on an island in a river. The eggs are of a bright pea green, and measure 1.11 x .83, 1.07 x .83, 1.12 x .84. Incubation had commenced, and the eggs in this case more nearly approach those of *C. erythrophthalmus* in color than those of *C. americanus*.

388. *Coccyzus erythrophthalmus* (WILS.) [388.]

Black-billed Cuckoo.

Hab. Eastern North America, north to Labrador and Manitoba, westward to the Rocky Mountains, south in winter to the West Indies and Tropical America.

The same names are given to this bird as are common to the Yellow-billed Cuckoo, *C. americanus*, and their general habits are similar. The nests 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. However, as a rule, the nest of the Black-bill 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 are of a darker green—deep glaucous-green or verd-

* For description see Manual of North American Birds: p. 273.

iter-blue. The nest complement varies from two to five, rarely six, usually four, and they are found in all stages of incubation, as is the case with the eggs of *C. americanus*. Ten specimens measure 1.13 x .79, 1.11 x .86, 1.15 x .84, 1.13 x .80, 1.17 x .82, 1.17 x .84, 1.19 x .80, 1.12 x .86, 1.13 x .82, 1.18 x .89, with an average size of 1.14 x .79.

390. *Ceryle alcyon* (LINN.) [382.]

Belted Kingfisher.

Hab. Entire North America, South Panama and West Indies.

This is the familiar bird whose loud, coarse, rattling notes are heard along our streams. It may be seen perched upon the lower branches of a tree overhanging the water, or on the top of a dead stump; these places furnish a favorite outlook, from which it plunges beneath the water to secure its prey, which is chiefly fish. It is a curious fact that Mr. W. E. D. Scott frequently met with this bird in the desert region of Southern Arizona, far from water, feeding on the large insects and lizards.

The nest of the Kingfisher is an excavation in the face of a perpendicular bank of a stream, or in the banks of gravel pits. The entrance is generally about two or three feet below the surface; the tunnel is usually straight, but sometimes an angle from three to six or eight feet, and is dug by the bird. The Kingfisher ejects from its mouth the bones, scales and other indigestible portions of its food, like a bird of prey. Thus are we able to account for the bones and other refuse of food found in the nesting cavities, in the midst of which the eggs are deposited. The eggs are of a clear shining white, nearly spherical in shape, usually six in number; when the full complement is laid it generally numbers seven or eight. Six eggs measure 1.34 x 1.07, 1.35 x 1.08, 1.37 x 1.04, 1.47 x 1.03, 1.37 x 1.05, 1.40 x 1.08.

391. *Ceryle cabanisi* (TSCHUDI.) [383.]

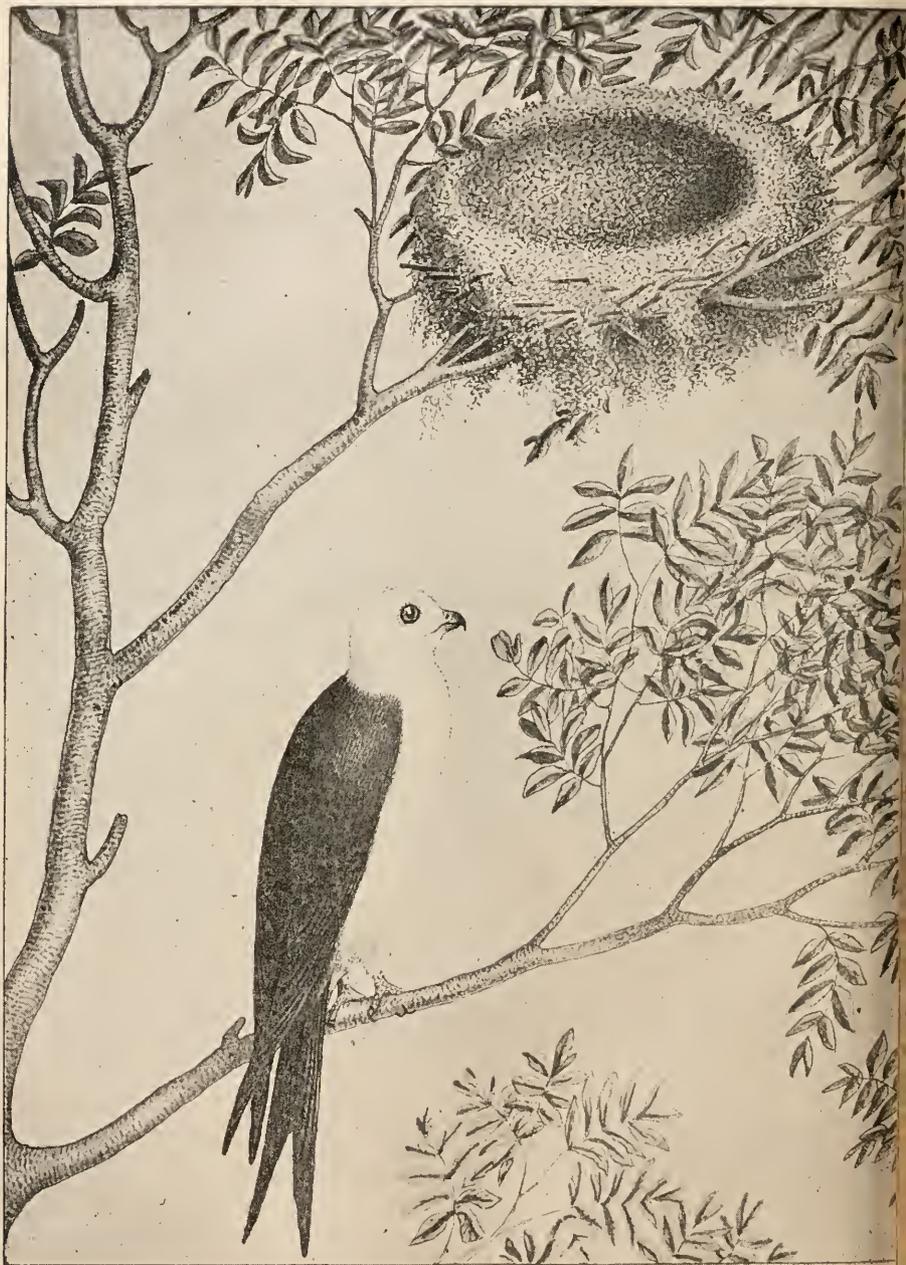
Texan Kingfisher.

Hab. Southern Texas to Arizona, south to Ecuador and Western Peru.

This beautiful little bird, known as Texan Green Kingfisher, is quite common in suitable places along the streams of Southern Texas—wherever the water is not too muddy for it to clearly see its prey. Like the Belted Kingfisher, this species nests in holes of banks, depositing the eggs on the bare floor of the cavity, or upon fish-bones and other extraneous matter.

Mr. Brewster describes the eggs of this species, taken in Comal county, Texas, April 25, as extremely thin-shelled, rounded-oval and nearly elliptical in shape, clear ivory-white, with a rather high polish; others creamy-white, with scarcely any polish. The sizes





SWALLOW-TAILED KITE AND NEST.

(*Elanoides forficatus.*)

of five eggs are given as 1.00 x .71, .94 x .69, .99 x .69, 1.00 x .71, 1.00 x .75, respectively.

Mr. Norris has a set of four eggs taken from a hole in the bank of a river in Comal county, Texas, May 25, 1878. These are dull white, and measure .92 x .73, .96 x .72, .92 x .71, and .95 x .70.

392. *Campephilus principalis* (LINN.) [359.]
Ivory-billed Woodpecker.

Hab. Formerly Southern Atlantic and Gulf States and Lower Mississippi Valley, north to North Carolina, Eastern Missouri, Southern Illinois and Indiana. Now restricted and only locally distributed in the Gulf States and Lower Mississippi Valley.

The largest of our North American Woodpeckers—in fact it is the prince of Woodpeckers. Its length ranges from nineteen to twenty-one inches.* The adult male has a long pointed crest of scarlet, the entire crown (with its elongated feathers) is black; the bill ivory-yellow or whitish. This bird is now rare, and is apparently restricted to the extreme Southern States, especially those bordering the Gulf of Mexico. It is of a wild and wary disposition, making its home in the dark, swampy woodlands. The dense cypress swamps of Florida are at present one of its favorite haunts.

A set of three eggs of this species is in the cabinet of Captain B. F. Goss. They were taken in Southern Texas in May, 1885, from a hole in a tree about forty feet from the ground; the cavity was excavated to the depth of nearly two feet, and was large enough to allow the collector to insert his arm and take out the eggs. These are pyriform in shape, and have the usual gloss of woodpeckers' eggs, and measure, respectively, 1.44 x 1.06, 1.45 x 1.06, 1.44 x 1.07.

Mr. W. E. D. Scott found a nest of this species in Hillsboro county, Florida, March 17, 1887, containing a young bird, one-third grown. The nest cavity was dug in a large cypress tree in the midst of a dense swamp, and was forty-one feet from the ground; the depth of the cavity was fourteen inches. Mr. Scott was told by old residents the bird was once very common in that region, but is now comparatively rare and shy. The day the nest was found eleven of the birds were counted in the swamp, sometimes four or five were in sight at once.†

393. *Dryobates villosus* (LINN.) [360.]
Hairy Woodpecker.

Eastern United States, except South Atlantic and Gulf States.

A ragged-looking black and white species, known as the large "Sapsucker," and one of the most noisy in the woods during the breed-

* The Imperial Woodpecker, *C. imperialis* (Gould,) measures twenty-three or twenty-four inches in length. This bird is found in Western Mexico, north along the Sierre Madre, and probably has not yet been observed or taken within our limits, but is likely to occur at any time within the United States boundary.

† Auk, V, p. 186.

ing season, which occurs in latter part of April, through May and the early part of June. It does not accept the society of other species like its miniature, the little "Sapsucker"—Downy Woodpecker, and always maintains a more dignified manner than this species when hunting insects in the trunks of trees.

The nest cavity is commonly dug in dead or partially dead tree-trunks, on the outskirts of woods or those in orchards; the distance from the ground usually ranges from ten to twenty feet, and the depth of the cavity eight to fifteen inches. No material is used for a nest lining; the eggs simply rest on the fine chips made during the excavating. Four, rarely five, glossy-white eggs are deposited. Five specimens measure .97 x .70, .98 x .70, .94 x .69, 1.00 x .70, 1.00 x .69. The northern form, *D. v. leucomelas* Bodd, is found from about the northern border of the United States northward. *D. v. audubonii* Swainson is the race of the Southern United States, east of the Plains.

393c. *Dryobates villosus harrisii* (AUD.) [360b.]

Harris's Woodpecker.

Hab. Western United States from the Rocky Mountains to the Pacific, south to the Table Lands of Mexico.

Harris's Woodpecker is exactly like *D. villosus*, except that it has fewer wing spots; the coverts and tertials are plain black, the lower parts are usually white, frequently pure white, rarely smoky-gray. In the mountainous regions of the West this bird is quite common, inhabiting all kinds of forests, especially those of the pine regions throughout the Sierra Nevada range, from Washington Territory southward—also in Arizona, New Mexico, Colorado, etc. Four eggs taken in Socorro county, New Mexico, exhibit the following sizes: .95 x .67, .98 x .69, .96 x .70, .97 x .70. They are glossy-white. These were taken May 5, 1887, from a hole in an oak tree forty feet from the ground. In all respects the nesting and eggs are similar to those of *D. villosus*.

Mr. Norris has three sets of the eggs of this bird, two taken at Fort Klamath, Oregon, May 10 and 19, 1888; the third was collected near Salem, Oregon, May 12; all are of four eggs each. The last set measures 1.01 x .78, 1.02 x .79, .95 x .76, 1.01 x .76 respectively.

394. *Dryobates pubescens* (LINN.) [361.]

Downy Woodpecker.

Hab. Northern and Eastern North America, and sporadically the western portions—Colorado, Utah, Nevada, California, etc.

Commonly called the Little or the Lesser "Sapsucker," but this is a misnomer, and a term which can only be applied with any propriety to woodpeckers of the genus *Sphyrapicus*.

This is perhaps the most social of all our Woodpeckers, and one

of the best known. It seems to enjoy the company of other birds, especially nuthatches, titmice and wrens, in whose society it is generally found, searching the branches of low trees or saplings, the hedges, the brush heaps and fences for insects and their larvæ. It is fond of drumming on the stub of a dead limb whose center is hollow, and whose shell is hard and resonant. Upon such places it will drum for an hour at a time, now and then stopping to listen for a response from its mate or of some rival. At all times it is unsuspecting of man, and when engaged in excavating the cavity for its nest it continues its busy chiseling, unheeding his near approach. The nest is constructed in the latter part of April, or early in May, and is excavated in the trunk of a small dead tree, often in the dead limb of an apple tree, in a post or rail of a fence, seldom more than twenty feet from the ground, usually between ten and fifteen feet.

The eggs are four or five, rarely six; they are pure glossy-white, and nearly elliptical in shape. There is considerable difference in the size of the eggs; a set of four measure, respectively, .75 x .62, .77 x .62, .73 x .61, .73 x .62; another set, containing four, .84 x .58, .78 x .59, .83 x .58, .82 x .56; a set of five, .80 x .57, .85 x .60, .84 x .60, .83 x .62, .84 x .63.

394a. *Dryobates pubescens gairdnerii* (AUD.) [361a.]

Gairdner's Woodpecker.

Hab. Western United States, from the Rocky Mountains to the Pacific, north to British Columbia, south to New Mexico.

The western representative or counterpart of the Downy Woodpecker of the East, resembling it in size, general habits, etc. In many places of the West it is an abundant bird, but is not generally so common as the Downy is in the Eastern States. Mr. Norris has a set of five eggs of this Woodpecker, collected June 1, 1876, near Santa Cruz, California. They are glossy-white, and measure .81 x .69, .80 x .58, .80 x .59, .77 x .58, .74 x .56.

395. *Dryobates borealis* (VIEILL) [362.]

Red-cockaded Woodpecker.

Hab. Southeastern States, north regularly to North Carolina, irregularly to New Jersey; west to Indian Territory and Eastern Texas.

The Red-cockaded Woodpecker has a restricted distribution in the Southeastern Atlantic States, and is found regularly as far north as the Carolinas, westward to Indian Territory and Eastern Texas, and only irregularly to New Jersey. Audubon speaks of it in his day as being found abundantly from Texas to New Jersey, and as far inland as Tennessee, and nowhere more numerous than in the pine regions of Florida, Georgia and the Carolinas. He found these birds mated in

Florida as early as January, and engaged in preparing a breeding place in February. The nest, he states, is not unfrequently bored in a decayed stump. In Georgia and other localities this bird excavates a nesting cavity in tall pine trees, living or dead.

The eggs are said to range from four to six in number, glossy-white; size .91 x .68.

396. *Dryobates scalaris* (WAGL.) [363.]

Texan Woodpecker.

Hab. Southern border of the United States, from Texas to Arizona south into Mexico.

This bird is called the Ladder-backed Woodpecker, from the black and white cross-bars on the back. It averages larger than the Downy, *D. pubescens*. Dr. Merrill found it a common resident in Southern Texas. He states that in its habits it is so like the Downy Woodpecker that there is little to be said about it. He gives the average size of eighteen eggs as .81 x .64.

Mr. Norris has a set of four eggs taken in Comal county, Texas, May 30, 1885. The nest was in a cavity of a fence rail. The eggs are white and very glossy; sizes .82 x .62, .83 x .60, .84 x .62, .80 x .60.

The form *D. s. lucasanus* (Xantus), belongs to the southern portion of Lower California.

397. *Dryobates nuttallii* (GAMB.) [364.]

Nuttall's Woodpecker.

Hab. California.

The habitat of Nuttall's Woodpecker is restricted to the limited area of the State of California, where it seems to be confined chiefly to the region west of the coast range and southward to the extreme southern portion of the State. It closely resembles the Texan Woodpecker, and may be easily recognized from the latter by the white or dull buff nasal tufts and the markings of the tail feathers. The bird is of the same size as the Downy Woodpecker of the Eastern States, and has many of its characteristics, familiarly searching the orchards, stumps of trees and fence rails for insects and their larvæ. Mr. Walter E. Bryant found a nest of this species on Mt. Diablo, California, May 29, 1880. It was in a cavity picked between the body and the bark of an oak stump, fifteen feet from the ground. The opening was very difficult to find. The male bird was sitting, and flew from the stump as Mr. Bryant approached, and he was obliged to wait for its return before the entrance could be located. The cavity was about twelve inches deep and four inches inside diameter; diameter of the entrance was about one inch and a half. The nest contained four glistening, white

eggs; their sizes being as follows: 24×17.5 , 23×17 , 23×17.5 , 23.5×17 millimeters.*

Mr. B. T. Gault on April 23, 1883, obtained a set of six eggs of this species from a cavity in the main trunk of an elder bush or tree in the San Bernardino Valley. Notwithstanding various loud demonstrations—tapping on the tree trunk and chopping into the cavity with a hatchet the female bird did not leave the nest, and when taken out appeared stupefied. The nest was about five and a half feet from the ground, was very near a foot deep and about five inches wide; the entrance was a little larger than a silver half dollar. The eggs were pretty well advanced in incubation; their sizes are $.85 \times .66$, $.87 \times .65$, $.82 \times .64$, $.85 \times .66$, $.85 \times .66$, $.84 \times .64$.† They are of a pearly white.

398. *Dryobates arizonæ* (HARGITT) [365.]

Arizona Woodpecker. †

Hab. Southern Arizona and adjacent portion of northwestern Mexico.

Mr. F. Stephens met with this species in the Santa Rita and Chiricahua Mountains in Southern Arizona. Although the birds were not uncommon he did not succeed in obtaining the eggs. A nest was found May 16 in a sycamore tree which contained young.

Mr. W. E. D. Scott found this Woodpecker in the oak region of the San Pedro slope of the Cataline Mountains where, except in midwinter, it is not uncommon. Mr. Brown found it common on the Santa Rita Mountains.

Mr. Scott rarely met with more than two in company; frequently in the fall a party was seen composed of Arizona Jays, California Woodpeckers, various Titmice and Warblers, and a pair of Strickland's Woodpeckers. They appeared mated late in January or early in February. A nest containing three young, found May 27, was in an oak about ten feet from the ground; it was much like that of the Hairy Woodpecker, but the opening was a little smaller. I have no description of the eggs of this species, but they probably do not differ from those of other Woodpeckers.

399. *Xenopicus albolarvatus* (CASS.) [366.]

White-headed Woodpecker.

Hab. Pacific coast region, including eastern and western slopes of the Sierra Nevada Mountains, from Washington Territory to Southern California.

This peculiarly-colored species is common in the pine regions of Washington Territory, Oregon and California. Dr. James C. Merrill,

* $.94 \times .69$, $.91 \times .67$, $.91 \times .69$, $.93 \times .67$.

† Bull. No. 2. Ridgway Ornithological Club, April, 1887: Chicago, Ill., pp. 78-81.

† No. 398, A. O. U. Check List, is *Dryobates stricklandi* Malh, but according to Mr. E. Hargitt, in the "Ibis" for April, 1886, *D. stricklandi* from Mexico is specifically distinct from the Arizona Woodpecker, which he names *Picus arizonæ*.

Assistant Surgeon, U. S. Army, states that this bird was first observed in the vicinity of Fort Klamath, Oregon, November 9; by December it became rather abundant, and so continued until the latter part of February, but after the middle of March none were seen. Careful search during the breeding season failed to reveal its presence near the Fort, nor was it found in the higher mountains in July and August. Dr. Merrill rarely heard this Woodpecker hammer, and even tapping is rather unusual with it. The bird uses its bill as a crowbar rather than a hammer, *prying* off the successive scales and layers of bark in a very characteristic way, which explains the fact of its being a quiet worker. As a result of the great abundance of food which these birds obtained, the specimens killed were loaded with fat—scarcely surpassed in this respect by some Sandpipers in autumn.*

Capt. B. F. Goss has a set of three eggs of this species, taken May 17, 1882, near Crockers, California. The nest cavity was in a small rotten stub, thirteen feet from the ground. The eggs are pure crystalline white, exhibiting the following sizes: .96 x .75, .98 x .74, .98 x .77. Set No. 253 (oological collection of Walter E. Bryant), consisting of four eggs, was taken at Blue Canon, Cal., by C. A. Allen, May 27, 1879. The nest was in an excavation of a pine stump, five feet from the ground. The eggs measure respectively 23 x 17.5, 23.5 x 18.5, 24 x 18, 24 x 18.5 mm.† Set No. 815 in Mr. Bryant's collection was taken at Big Trees, Cal., by Chas. W. Knox. This set contains five eggs; they were taken from a hole in a dead pine stump, eight feet from the ground. Their sizes are: 25 x 19, 23.5 x 18.5, 25 x 19, 24 x 19, 24 x 19.5 mm.‡

400. *Picoides arcticus* (SWAINS.) [367.]

Arctic Three-toed Woodpecker.

Hab. Northern North America, south to northern border of the United States, and farther on high mountain ranges. In the mountains of the West (Sierra Nevada, etc.,) south to about 39°, where it breeds.

The Black-backed Three-toed Woodpecker has an extended distribution from the Pacific to the Atlantic, and from the northern border of the United States northward to the Arctic regions. Its favorite haunts are the pine woods of mountainous country. In some portions of Northern New England it is a rare summer resident. Audubon says that it occurs in Northern Massachusetts and in all portions of Maine covered by tall trees, where it resides. It is found as far south as Northern New York, where Dr. Bachman was of the opinion that it nested. Dr. Merriam states that this bird is not an uncommon resi-

* Auk, V, p. 253.

† .91 x .69, .93 x .73, .94 x .71, .94 x .73.

‡ .98 x .75, .93 x .73, .98 x .75, .94 x .75, .94 x .77.

dent in those portions of Lewis county, New York, which pertain to the Canadian fauna; for they are found both in the Adirondack region and in the coniferous forests bordering Big Alder and Fish Creeks, in the Tug Hill range. Dr. J. G. Cooper found this Woodpecker quite numerous in September, in the vicinity of Lake Tahoe and the summits of the Sierra Nevada, above an altitude of 6,000 feet. Dr. Merrill mentions it as a rather common resident in the vicinity of Fort Klamath, Oregon; in summer more common in the mountains. Several nests were found early in July, but with young, fledged. The excavations were in dead young pines, not more than five or six feet from the ground, in this respect differing from those of the other Woodpeckers found there, all of which, so far as he had observed, make their holes at a greater height. The eggs range from four to six in number, pure ivory-white; average size, .95 x .71.

401. *Picoides americanus* BREHM. [368.]

American Three-toed Woodpecker.

Hab. Northern North America east of the Rocky Mountains, south in winter to the Northern United States.

The Banded or Ladder-backed Three-toed Woodpecker is found in the spruce and fir regions of Northern North America. It is often found associated with the last species, *P. arcticus*, whose characteristics are similar, and whose nesting is identical!

Dr. C. Hart Merriam met with a pair of these birds nesting in Northern New York, June 4, 1878. The cavity, which contained four nearly fresh eggs, was in a spruce tree about eight feet from the ground; the entrance of the hole was an inch and a half in diameter, and the cavity ten inches deep. The eggs are described as cream-white, and of a texture like those of other Woodpeckers; they are strongly ovate in outline, and measure respectively, 23.8 x 17.2, 23.6 x 17.8, 23.8 x 17.9, 23 x 17.8 millimeters.*

Dr. Merriam says that this species is found along the eastern border of Lewis county, in the Adirondack region, where it is a resident species, much less common, however, than its congener, the Black-backed Woodpecker, *Picoides arcticus*.

Picoides americanus dorsalis Baird, belongs to the Rocky Mountain region of the United States, and southward into Mexico. *P. a. alascensis* Nelson, is from Alaska and Northern British America.

402. *Sphyrapicus varius* (LINN.) [369.]

Yellow-bellied Sapsucker.

Hab. Northern and Eastern North America, south in winter to the West Indies, Mexico and Guatemala.

The Yellow-bellied Woodpecker is one of the most singularly

* .94 x .68, .93 x .70, .94 x .71, .91 x .70. Bull. Nutt. Club, III, 200.

marked and most attractive birds of the family. It breeds from the northern United States northward. A common bird in most of its United States range. The Woodpeckers of this genus are the only ones to which the term "Sapsucker" can with any propriety be applied. They lack the long extensile tongue which enables the other species to probe the winding galleries of wood-eating larvæ, and they are known to feed largely upon the green inner bark of trees. In some localities this species is said to destroy many trees by stripping off bark and girdling them with holes for the sap.

The following details are from Mr. William Brewster's account of this bird's nesting habits in New England. He states that throughout the White Mountains of new Hampshire, and in most sections of Northern Maine, the Yellow-bellied Woodpeckers outnumber all the other species in the summer season. Their favorite nesting sites are large, dead birches, and a decided preference is manifested for the vicinity of water, though some nests occur in the interior woods. The average height of the excavation from the ground is about forty feet. In nearly every tree examined by Mr. Brewster, which contained a nest, there were several newly-finished cavities, and others made in previous years, but in no case was more than one of the excavations inhabited. Many of the nests were gourd-like in shape, with the sides very smoothly and evenly chiseled; the average depth was about fourteen inches, by five in diameter at the widest point, while the diameter of the exterior hole varied from 1.25 to 1.60 inches. The labors of excavating the nest and those of incubation are shared alternately by both sexes. Mr. Brewster gives the eggs as numbering from five to seven in a set, and varying considerably in shape, some being oblong, others decidedly elliptical. They are pure white in color, and there is much less of that fine polish than in eggs of the other species of Woodpeckers he had examined. The size is given as .85 x .60.*

402a. *Sphyrapicus varius nuchalis* BAIRD. [369a.]

Red-naped Sapsucker.

Hab. Rocky Mountain region, west to the Sierra Nevada and Cascade ranges; south into Mexico.

Capt. Charles E. Bendire, U. S. A., met with this race of *S. varius* sparingly distributed in various portions of the Blue Mountains of Oregon, Washington Territory and Idaho, and as far west as the eastern slope of the Cascade Range in Southern Oregon, in the Klamath Lake region, where it was replaced by *Sphyrapicus ruber*, the two species overlapping each other, but not intergrading, and remaining perfectly distinct. He found it breeding in June, nesting in cavities of

* Bull. Nutt. Club. 1, pp. 63-70.

live aspen trees. Dr. James C. Merrill found a nest of this bird in a cavity of a dead young cottonwood, in Montana, June 12. The height of the hole from the ground was twenty-five feet, and near the top of the same tree were three similar holes, probably used by the same birds in previous years. Mr. Dennis Gale, an enthusiastic naturalist, has given Capt. Bendire the results of his observations on the nesting of this Woodpecker in the mountains of Colorado. According to him, its nesting sites are invariably in living aspen trees, along the gulches and hillsides, and the birds are seldom found above an altitude of 9000 or much below 8000 feet. In excavating the cavity the female bird does the work from beginning to end, and completes it in from six to ten days. The height of the nesting place from the ground varies from five to thirty feet.

The eggs are four or five, sometimes less in number. Fresh eggs may be found in Colorado from June 1 to 15, and should the first set be taken, a second may generally be found in from ten to fifteen days later; and as a rule, the second nesting-site will not be a great distance from the first one. Several nests of this species may be found within a short distance of one another in the same aspen grove. The cavities are roomy and gourd-shaped. Capt. Bendire gives the measurements of two sets of four eggs each, taken by Mr. Gale. The first set, collected June, 1884, measure as follows: .91 x .67, .90 x .68, .89 x .68, .88 x .64; second set taken June 1, 1887, .90 x .69, .90 x .69, .90 x .68, .89 x .65. A set of three eggs taken by himself in the Blue Mountains, Grant county, Oregon, exhibit the following sizes: .90 x .65, 90 x 64, 88 x 66. The average measurement is given as .88 x .66. The eggs are pure white after blowing, moderately glossy or lustrous, and generally ovate in shape.* The set of five taken by Dr. Merrill in Montana measure .91 x .72, .90 x .73, .93 x .71, .93 x .73, .91 x .73, respectively.

403. *Sphyrapicus ruber* (GMEL.) [369b.]

Red-breasted Sapsucker.

Hab. Pacific coast region, from California northward into Alaska.

This species is confined to the Pacific coast region, occurring as far east as the eastern slopes of the Sierra Nevada Mountains in Central and Northern California; in the Cascade Mountains of Oregon and Washington Territory, thence northward through British Columbia into Alaska: A handsome bird, with the whole head, neck and breast carmine-red in both sexes.

Captain Bendire states that this bird is an abundant summer resi-

* See Notes on the Habits, Nests, and Eggs of the Genus *Sphyrapicus* Baird. By Capt. Charles E. Bendire: In *The Auk*, V, pp. 225-240.

dent of the aspen groves on the mountains in the southwestern portion of Oregon—the region about Fort Klamath, etc. According to his observations its nesting is very similar to *S. v. nuchalis*—breeding in healthy live aspen trees, making a gourd-shaped nest cavity from six to ten inches deep, four or five inches wide at the bottom and three inches near the top. It is situated from fifteen to twenty-five feet from the ground, and usually excavated below the first limb of the tree. A sure sign of a nest was the chips scattered about the base of the tree.

Five or six eggs are laid, and fresh eggs may be looked for in the neighborhood of Fort Klamath from May 20 to June 5. Captain Bendire took the first set of eggs May 23, 1883, and he has taken nearly fresh eggs as late as June 13. When blown the eggs are of a pure delicate white, the shell showing a moderate amount of lustre. There is considerable variation in their shape, running through all the different ovates to an elongate-ovate. The average measurements of sixty specimens are .94 x .68; the largest egg 1.00 x .70; the smallest .86 x .78. A set of five eggs is in Mr. Norris' collection, taken with the female bird, near Salem, Oregon, April 13, 1888, from a cavity in a cottonwood, twenty-five feet from the ground. They measure 1.00 x .73, .91 x .71, .94 x .70, .90 x .71, .90 x .71.

404. *Sphyrapicus thyroideus* (CASS.) [370.]

Williamson's Sapsucker.

Hab. Western United States, from and inclusive of the Rocky Mountains to the Pacific.

This singular representative of the genus *Sphyrapicus*, has a distribution extending from the eastern slopes of the Rocky Mountains to the Pacific coast in Oregon and California. The male and female of this species are so different in coloration that they were for a long time considered separate species. Regions of coniferous trees seem to be the favorite haunts of Williamson's Woodpecker. Dr. Merrill notes it as not an uncommon resident in the vicinity of Fort Klamath, Oregon, but shy and very suspicious. Two nests containing young were found June 20 in large dead pines; each were at a height of about sixty feet, and inaccessible. Mr. Dennis Gale, who has given Capt. Bendire his observations on the habits of this species in the mountains of Colorado, says that the birds are as often met with in moderately thick woods as in more open clearings. The nesting sites are excavated in the trunks of pine trees, at heights ranging from five to sixty feet or more.

Fresh eggs may be looked for, according to altitude, from May 20 to June 15. At Fort Klamath, Capt. Bendire took the first set of eggs June 3, 1883. Five or six are laid. They are pure white, a trifle

less lustrous than those of *S. ruber*, a little more elongated and pointed in shape, some approaching a distinct ovate-pyriform or pear shape, a characteristic not apparently found in the eggs of other species of the same genus. Capt. Bendire gives the average size of seventeen specimens as .97 x .67; the largest, 1.02 x .68; the smallest, .94 x .67.

405. *Ceophlœus pileatus* (LINN.) [371.]

Pileated Woodpecker.

Hab. Entire North America in heavily-wooded districts.

Next in size to the Ivory-billed species is the Pileated Woodpecker, commonly called Logcock. It was formerly common to the whole wooded region of North America, but is now rare or absent in the thickly settled portions of the Eastern States. In southern districts, midst timbered swamps and heavy secluded woods it is still abundant. The nesting places are excavated usually in the main trunks of high trees, such as oaks, sycamores, elms, pines, etc. The height of the burrow from the ground ranges from twenty to eighty feet. If inhabited, and the bird is at home, a rap upon the trunk of the tree will generally bring this species to the entrance of the excavation. The eggs are from four to six in number. A set of five eggs in the collection of Mr. Norris, taken April 6, 1887, in Lee co., Texas, exhibit the following measurements: 1.27 x .95, 1.33 x .96, 1.29 x .97, 1.29 x .98, 1.29 x .96. They are pure white and very glossy.

406. *Melanerpes erythrocephalus* (LINN.) [375.]

Red-headed Woodpecker.

Hab. Eastern United States and British Provinces, west to the Rocky Mountains, occasionally farther. Rare or casual east of Hudson River.

One of the most familiar birds in Eastern United States. It is found almost everywhere—in deep forests and open woods, in groves, orchards and solitary trees in fields, or along the roadside, and on the open prairies. A bird of manifold tricks and manners—some are commendable, and some are not. It is known to rob and demolish the nests of the Cliff Swallows; oftentimes whole colonies of these nests are destroyed by this Woodpecker. It seems to have considerable foresight in “looking out for a rainy day ahead” by storing grasshoppers, acorns and beech nuts in the cracks and crevices of posts, in the cavities of partially decayed trees, and under patches of raised bark. Berries and various fruits are likewise a portion of its food. A cavity for the nest is dug in the decayed trunk of any kind of a tree of sufficient thickness, and in almost any situation. Telegraph poles are often resorted to. On the open, treeless prairies it has been known to nest in the angle formed by the shares of an upturned plow, and necessity often compels this bird to make its nest under the roofs or in any

dark hole it may find on the prairie farms. The eggs are five or six in number; when fresh and before blowing, like those of all Woodpeckers, show the yolk through the translucent shell, which gives them a beautiful pinkish appearance. After blowing they are of a clear, glossy-white. The average size is .99 x .78.

407. *Melanerpes formicivorus bairdi* RIDGW. [377.]

Californian Woodpecker.

Hab. Northern Mexico and Northern Lower California; Western Texas to California, north along the Pacific coast to British Columbia.

This handsome Woodpecker is common along the Pacific coast region, as in California, Oregon and in Washington Territory. It is said that this species in California has the habit of digging small holes in the trunks of trees, in which it stores acorns for its winter food. Mr. W. H. Henshaw met with it in the Rocky Mountain region of New Mexico, near Santa Fe, where it frequented the small oak groves. Mr. W. E. D. Scott states that this bird is a common resident of the Pinal and the Catalina Mountains of Arizona, both in pine and oak regions as low as 4,000 feet. July 30, 1884, a nest containing three half-grown young was found; it was in a natural cavity of a sycamore tree fifty feet from the ground. A set of five eggs of this species is in Mr. Norris' collection; they were taken April 30, 1880, near Shasta, California. They are white and very glossy; sizes 1.05 x .80, 1.10 x .77, 1.05 x .76, 1.06 x .82, 1.06 x .81. Mr. Bryant has a set of six eggs collected by Capt. Bendire near Camp Harney, Oregon, May 13, 1878. Their sizes are 29.5 x 22, 30.5 x 21.5, 30 x 21.5, 27.5 x 21, 29.5 x 21.5, 30 x 22 mm.* A set of four eggs taken by Mr. Bryant near Altaville, California, June, 1885, exhibit the following dimensions: 27 x 19, 24 x 18.5, 25.5 x 19, 24 x 18.5 mm.† These were found in a nest on the under side of a limb of a live oak, ten feet from the ground.

408. *Melanerpes torquatus* (WILS.) [376.]

Lewis's Woodpecker.

Hab. Western United States, from the Black Hills and the Rocky Mountains to the Pacific coast.

In most of the wooded, mountainous regions of the West, from the Rocky Mountains to the Pacific, Lewis's Woodpecker is a common bird. About Fort Klamath, Oregon, Dr. Merrill notes it as rather uncommon during the summer, nesting usually near the tops of tall dead pines, especially isolated ones, from which they can obtain a good view of passing insects, which they will often follow to a considerable distance. The general habits of this species are similar to those of the Red-headed Woodpecker. It is found in greater or less abundance in the pine and

* 1.16 x .87, 1.20 x .85, 1.18 x .85, 1.08 x .83, 1.16 x .85, 1.18 x .87.

† 1.06 x .75, 94 x .73, 1.00 x .75, .94 x .71.

oak districts of New Mexico, Arizona, California, Colorado, etc., where the nests are burrowed, preferredly in dead trees, at all heights from the ground. The eggs are four to six in number, and, like all those of the Woodpeckers, are white and glossy. Mr. Norris has a set of five eggs of this species in his collection taken near Yuma, Arizona, April 27, 1882. They measure, 1.00 x .81, 1.01 x .81, .95 x .81, .99 x .84, .99 x .82.

409. *Melanerpes carolinus* (LINN.) [372.]

Red-bellied Woodpecker.

Hab. Eastern United States, west to the Rocky Mountains, south to Florida and Central Texas.

This Woodpecker is regarded by some as the most beautiful of the smaller species of its tribe, and is known to many as the "Zebra Bird," from the back and wings being closely banded with black and white; the whole crown and nape are scarlet in the male, partly so in the female. Under parts grayish, mixed with yellowish-white, reddening on the belly. A bird generally of retired habits, seeking the deepest and most unfrequented forests to breed. When engaged in hammering for insects it frequently emits a short, singular note, which Wilson likens to the bark of a small dog. The note is repeated twice, and resembles the hoarse utterance of the syllables *chow, chow*.

Prof. D. E. Lantz states that this species in the vicinity of Manhattan, Kansas, exhibits the same familiarity as shown by the Flicker, the Red-headed and Downy Woodpeckers. About a dozen nests were observed, the excavations ranging usually less than twenty feet from the ground. One nest in a burrow of a large dead limb of an elm tree was found May 12, and contained five eggs. The earliest date for a full set was May 10. The birds were very much attached to their nests, so much so that in several cases it was necessary to remove them with the hand before the eggs could be secured. The eggs being taken, they almost immediately begin excavating another nest cavity for the second set, always in the vicinity of the first nest, often in the same tree.

In Ohio this bird is a common resident. Breeds in May. Four to six glossy-white eggs are laid, varying in length from .77 to 1.00 by .67 to .79 in breadth. Six eggs taken in Franklin county, Ohio, measure, 1.00 x .77, .98 x .78, 1.00 x .78, .99 x .74, 1.00 x .76, 1.00 x .74.

410. *Melanerpes aurifrons* (WAGL.) [373.]

Golden-fronted Woodpecker.

Hab. Southern Texas and Northeastern Mexico.

Dr. James C. Merrill records this species as abundant on the Lower Rio Grande in Texas, and Mr. George B. Sennett found it very common at Lomita, and as bold and noisy as the Red-headed Woodpecker of the North. Although breeding abundantly, the eggs were difficult to ob-

tain, as the nesting cavities were often situated in the heart of large hard-wood trees, and not very accessible. From four to six highly polished white eggs are laid. Mr. Sennett took the first set of eggs April 17, and a clutch of five fresh ones was taken May 1st. A set of three eggs is in Mr. Norris' cabinet which was taken in Comal county, Texas, April 21, 1885; they measure 1.00 x .73, 1.04 x .75, and 1.03 x .75. A set of five eggs in my collection, taken near the town of Camargo, Mexico, June 16, 1888, exhibit the following sizes: .94 x .75, 1.00 x .76, .98 x .73, 1.04 x .74, 1.02 x .74. The nest-cavity was in a broken stub of a mesquite tree, about twelve feet from the ground.

411. *Melanerpes uropygialis* (BAIRD). [374.]

Gila Woodpecker.

Hab. Southern Arizona, Southeastern portion of California, Lower California and Western Mexico.

This species was first discovered by Dr. Kennerly in his route along the 35th parallel, and described by Professor Baird in 1854. Dr. Hermann found it abundant along the Gila River among the mesquite trees and giant cactus. He met with it in California in considerable numbers on the banks of the Colorado. Mr. G. Frean Morcom, in his valuable paper on the birds of Southern California and Southwestern Arizona,* notes this as one of the species found by Mr. F. Stephens at Yuma, Arizona, where it was not common. A nest was found May 4, excavated in a growing willow on the edge of a slough. It contained three eggs, incubation commenced. In the region about Tucson, Arizona, Mr. W. E. D. Scott states that it is a common resident, especially in the giant cactus regions, occurring in numbers up to an altitude of 4,500 feet. Though breeding in mesquite and cottonwood trees, they show a great preference for groves of giant cactus, which afford nesting places for thousands of pairs about Tucson, Florence, and Riverside. Near Tucson, Mr. Scott took fresh eggs, three to five in number, from May 15 until the last of the month. The birds do not always excavate new nesting holes in the giant cactus, but more frequently take advantage of former excavations. The birds are very fond of the fruit of the giant and other cacti. The eggs are smooth, glossy white, and measure .99 x .72.

412. *Colaptes auratus* (LINN.) [378.]

Flicker.

Hab. Eastern North America, west to the Great Plains, north to Hudson Bay and Alaska.

This is the Golden-winged Woodpecker, Yellow-shafted Flicker, Pigeon Woodpecker, High-holder, Wake-up and Yellow-hammer of Eastern North America. Every country boy has a name for it. The

* Bulletin No. 2. The Ridgway Ornithological Club.

bird's ordinary notes are the familiar, oft-repeated *chuck-up*, *chuck-up*, *shuck-up*, the scythe-whetting note, *quit-tu*, *quit-tu*, *quit-tu*, and the peculiar *wake-up* call, preluded by rapid monosyllables. The Golden-winged Woodpecker is found everywhere in woodlands, nesting in the same manner as others of the family, most frequently in a dead trunk of a tree, at considerable height from the ground. The excavations are generally made by the birds, though not unfrequently the eggs are laid within a natural cavity. Curious breeding-places are sometimes selected. It has been found nesting in an old wagon hub far out on the treeless prairie; in barrels and in the crevices of deserted barns and out-houses. Ordinarily from six to eight or ten crystalline white eggs are deposited, but in exceptional cases this bird is known to lay a large number. Prof. Evermann took thirty-seven eggs from a single nest between May 4 and June 22, 1885. In this period of time the bird rested fourteen days.

The most remarkable instance of the laying capacity of the Flicker of which I am aware is that recorded by Charles L. Phillips, of Taunton, Mass. On May 6, 1883, he found a cavity in a large willow tree containing two eggs; he took one, leaving the other as a "nest egg," and continued to do so day after day until the female Flicker had laid seventy-one eggs in seventy-three days.* The average size of the eggs is 1.10 x .90, and in a large series a great variation in size and shape are noticeable.

413. *Colaptes cafer* (GMEL.) [378b.]

Red-shafted Flicker.

Hab. Western United States, from the Rocky Mountains to the Pacific coast; north to Sitka; south to Southern Mexico.

This species replaces the Yellow-shafted Flicker from the Rocky Mountains to the Pacific. In its habits, nesting and eggs the exact counterpart of *C. auratus*. The eggs average a trifle larger; 1.14 x .86 is the average of thirty specimens.

413a. *Colaptes cafer saturator* RIDGW.

Northwestern Flicker.

Hab. Northwest coast, from northern California north to Sitka.

The general habits, nesting, etc., of this darker colored race are the same as those of *C. auratus* or *C. cafer*. Mr. Norris has a set of seven eggs of this bird in his cabinet taken near Salem, Oregon, June 5, 1888. The nest-cavity was in an old balsam tree thirty feet from the ground. The eggs measure, 1.11 x .87, 1.11 x .86, 1.11 x .87, 1.16 x .85, 1.13 x .85, 1.16 x .85, 1.11 x .85.

* In the last edition of this work Mr. Phillips' record was credited to the *Ornithologist and Oologist* (Vol. XI, p. 16). Mention of it first appears in *The Young Oologist* (Vol. I, p. 26), and it has recently been recorded in *The Auk*, Vol. IV, p. 346.

414. *Colaptes chrysoides* (MALH.) [379.]**Gilded Flicker.**

Hab. Southern California, Lower California; Southern Arizona.

Mr. F. Stephens regards the distribution of this species in Arizona as coextensive with that of the giant cactus, for he never met with it except where this singular plant grows.* Mr. Scott states that it is common throughout the giant cactus region all about Tucson, and he occasionally saw single individuals in the mesquite timber. All that he ever met with breeding have been in giant cactus. The nesting time is from April 10 until the last of May. According to Mr. Scott, the number of eggs is small, varying from two to five; the latter number being the largest he ever found in a nest.† The eggs are glossy-white, and average 1.12 x .84.

415. *Colaptes rufipileus* RIDGW [380.]**Guadalupe Flicker.**

Hab. Guadalupe Island, Lower California.

Mr. Walter E. Bryant gives us the first knowledge we have concerning the nesting and eggs of this bird.‡ On Guadalupe Island he found it not rare in the restricted area of a large cypress grove, but apart from this locality less than a dozen were seen during his stay on the Island. For a portion of the year the food of this species consists largely of smooth-skinned caterpillars, with numerous beetles and ants. The nesting-cavities are found at heights varying from three to fifteen feet. The scarcity of decayed trees, with the exception of fallen ones, necessitates either work upon seasoned wood or the resort to dead palm stumps. A cavity was found April 7, which was dug to the depth of twenty inches, and contained six fresh eggs, upon which the female was sitting. They correspond exactly, both in color and general shape, with scores of other eggs of this genus, and offer the following measurements in millimeters: 28 x 22, 28 x 22, 28 x 22.5, 29 x 22, 29.5 x 22, 29.5 x 22.§

416. *Antrostomus carolinensis* (GMEL.) [353.]**Chuck-will's-widow.**

Hab. South Atlantic and Gulf States and Lower Mississippi Valley, north to the Carolinas and Illinois.

Perhaps the two best known North American species of this family (*Caprimulgidae*, the Goatsuckers), are the Whip-poor-will, *Antrostomus vociferus*, and the Nighthawk, *Chordeiles virginianus*. They are all more or less nocturnal, and fanciful imaginations have detected

* Wm. Brewster on a collection of Arizona birds. Bull. Nutt Club, Vol. VIII, 24.

† The Auk, III, 429.

‡ Addition to the Ornithology of Guadalupe Island; Bulletin 6, California Academy of Sciences, pp. 285-288.

§ 1.10 x .87, 1.10 x .87, 1.10 x .89, 1.14 x .87, 1.16 x .87, 1.16 x .87.

in many of their cries the syllables from which their common names are derived—such is the case with Chuck-will's-widow. It is nowhere a very abundant species, but more common in Florida than in any other State. It is found in Georgia, South Carolina, Alabama, Mississippi and Texas.

Mr. Stuart informs me that in Florida it nests in the months of May and June, depositing two eggs on the bare ground, or on leaves in the shadow of some dense thicket. According to Audubon, deep ravines, shady swamps, and extensive pine groves are the retreats of this species during the day, when the birds roost in hollow trees. When in search of food, the same places are resorted to at night, and their singular notes are only uttered for a brief period in the early evening, when on the wing. If either their eggs or young are disturbed, they are carried off in the capacious mouths of the birds to some distant part of the forest, in the same manner that a cat transports her kittens.

A set of two eggs in my cabinet, collected by Mr. Stuart near Tampa, Florida, May 20, 1886, measure 1.40×1.02 , 1.42×1.00 ; another set, from Manatee county, taken May 14, 1887, measure 1.39×1.00 , 1.41×1.02 . A set taken in Comal county, Texas, April 22, 1888, measure 1.41×1.02 , 1.42×1.04 . These are beautiful eggs, with a pinkish-buff ground, variously marbled with pale buff-brown and lilac-gray. They are moderately polished. Mr. Norris' cabinet contains a series of nine sets; some of these eggs are almost unmarked, except a few spots of gray, while others are boldly spotted with different shades of brown. The sizes of a set containing the largest eggs are as follows: 1.51×1.01 , 1.53×1.03 ; the set containing the smallest, $1.29 \times .94$, $1.30 \times .93$, respectively.

417. *Antrostomus vociferus* (WILS.) [354.]

Whip-poor-will.

Hab. Eastern United States to the Great Plains, south to Guatemala.

The well-known Whip-poor-will, which inhabits the Eastern United States, may be easily distinguished from *A. carolinensis* by its greatly inferior size; the colors of both birds are quite similar. In its habits the Whip-poor-will is very nearly the counterpart of the Chuck-will's-widow, keeping within the recesses of deep woods and undergrowth during the daytime, remaining perfectly silent. The name of this species is a pretty accurate rendering of its note, which is uttered when night comes on, both when the bird is on the wing in pursuit of nocturnal insects, or at rest. Rocky ravines shaded by trees, where the sun seldom penetrates the thick foliage, or beneath dense under-

brush, midst fallen logs, are the favorite nesting places of the Whip-poor-will.

The eggs are deposited on the ground, on decayed wood, or among fallen leaves. Two eggs constitute a set. They are elliptical, of moderate polish, with a ground color of white or cream color. They are handsomely marked with large and small spots of yellowish-brown distributed rather abundantly over the entire surface; occasionally a few blotches may be observed. Deep shell marks are about as numerous as the surface marks, and are of a lilac-gray or lavender tint. A set of two eggs which I took in Franklin county, Ohio, May 28, 1887, measure 1.18 x .90, 1.20 x .90; a set from Delaware county, Ohio, collected June 2, 1888, measure 1.14 x .87, 1.16 x .86. Dr. Jones gives a common size as 1.12 x .88. Like the Chuck-will's-widow this species removes in its mouth the eggs or young to a place of safety if they have been molested or handled.

417a. *Antrostomus vociferus arizonæ* BREWST.
Stephens's Whip-poor-will.

Hab. Table Lands of Central Mexico, north to Southern Arizona.

This is a larger bird than the last. Mr. F. Stephens met with it in the Chiracahua Mountains in Southern Arizona in 1880, and less numerous in the Santa Rita range in 1881. In the Chiracahua range by June 1st, they were as common as he ever knew them to be in the East; sometimes three or four were heard whistling at once. They were restless and rather shy. July 4 a female was shot as she flew from her nest, which, as usual, was only a very slight depression in the ground, but in this case overhung by a rock. Mr. Brewster describes the egg which this nest contained as white with a dull gloss, apparently immaculate, but upon close inspection reveals a few faint blotches of the palest purple, so faint that they might pass for superficial stains were it not for the fact that they underlie the external polish. This specimen measures 1.17 x .87.*

418. *Phalænoptilus nuttalli* (AUD.) [355.]
Poor-will.

Hab. Western United States, from the Great Plains to the Pacific, south to Southern Mexico.

Nuttall's Whip-poor-will, or the Poor-will, as it is called, is found to be more or less abundant throughout various States and Territories of the West—in the interior valleys and foot-hills of California, Oregon and Washington Territory, and in Arizona, New Mexico, Texas, Colorado, etc. Col. N. S. Goss mentions it as a common summer resident of Kansas, and may be looked for on the high prairies and rocky

* William Brewster's Notes on Some Birds from Arizona and New Mexico. Bull. Nutt. Club, VI, pp. 69-71; and Collection of Arizona Birds, Vol. VII, 211-212.

grounds along the banks of streams. Begins laying the last of May, depositing two white, unspotted eggs upon the bare ground, in the thick growth at the edge of timber; also at the roots of a bunch of bushes or briars upon the prairies. Mr. Emerson states that he frequently heard this bird's mournful cries, *poor-will, poor-will*, in San Diego county, California, in the month of April. A set of two eggs in his collection, taken near Manhattan, Kansas, May 28, 1885, are pure glossy-white, and measure 30 x 22, 30 x 22.5 mm.*

419. *Nyctidromus albicollis* (GMEL.) [356.]

Parauque.

Hab. Valley of the Rio Grande and southward.

Dr. James C. Merrill, Assistant Surgeon U. S. Army, first added this species to our fauna in 1876. In the vicinity of Fort Brown it was a common summer resident, arriving early in March and remaining as late as the middle of November. It frequents shady thickets and copses, and when flushed dodges rapidly and silently among the bushes, but soon alights. In these places the eggs are deposited usually at the foot of a bush. Dr. Merrill observes that the habits and eggs of this species, in addition to its anatomical characters, show its affinity with the Whip-poor-wills rather than the Nighthawks. Their notes are among the most characteristic night sounds of the Lower Rio Grande, and are constantly heard at evening during the summer months. They consist of a repeated whistle, resembling the syllables *whew, whew, whew, whew, whe-e-e-e-w*, much stress being laid upon the last, which is prolonged. The whole is soft and mellow, yet can be heard at a great distance. Mr. George B. Sennett, in the same region in Southern Texas, obtained a set of two eggs, April 20. He states that the birds breed in the more open places among the cactus and scattered bushes along with *C. texensis*—Texas Nighthawk. The eggs are two in number, of a rich creamy-buff, sparingly marked with a deeper shade of the same, and with lilac; average size 1.25 x .92. Their size and creamy-buff color render them easy of identification.

On the 15th of May, Dr. Merrill found a set of eggs of this species near camp at Hidalgo, and on returning in about fifteen minutes to secure the parent, who had disappeared among the thickets, he found that she had removed the eggs, although they had not been touched.

420. *Chordeiles virginianus* (GMEL.) [357.]

Nighthawk.

Hab. Eastern North America, north to Hudson Bay, west to the edge of the Great Plains, south through tropical America.

The Nighthawk, Bullbat, or Goatsucker, as it is variously called,

* 1.18 x .87, 1.18 x .91.

breeds throughout its range, depositing two eggs in open situations, such as fields, etc., on the cold, bare ground, often among stones; scarcely a trace of a nest can be found where the eggs lay. They are frequently deposited on bare rocks, and on the flat roofs of buildings in large cities. Mr. Norris once found a set on the stump of a tree about eighteen inches from the ground; and a set in his cabinet was taken from the gravel roof of a four-story building in the center of Philadelphia. The Nighthawk and Whip-poor-will are often confounded or considered as birds of the same species. A careful comparison with each other, or with the descriptions, will at once show a very decided difference. The large, white patches on the five outer primaries of the wings of the Nighthawk when flying, appear like tattered holes caused by the shot from a gun. In the evenings of summer months great troops of Nighthawks may be seen high in air over forest or town in search of insects, performing their wonderful evolutions and uttering their peevish cries, or swooping down with their strange booming or rumbling sound, they skim over the grassy meadows. Thus they continue till the gloaming merges into darkness, and their flight is seen no longer.

The eggs of the Nighthawk vary from pale olive-buff to buffy and grayish-white, thickly mottled and dashed with varied tints of darker gray, slate, olive, or even blackish, mixed with a marbling and clouding of purplish-gray; the pattern and tints are very variable. The shape is elliptical, and average size 1.25 x .85. Six eggs measure 1.24 x .85, 1.27 x .87, 1.22 x .83, 1.24 x .86, 1.21 x .82, 1.24 x .84.

420a. *Chordeiles virginianus henryi* (CASS.) [357a.]

Western Nighthawk.

Hab. Western North America from the Great Plains to the Pacific, south to Mexico.

A lighter-colored form of the Nighthawk, found in the unwooded portions of Western United States. Its general habits, nesting, etc., are the same as those of *C. virginianus*; the eggs average paler; size 1.20 x .85.

[420b.] *Chordeiles virginianus minor* (CAB.) [357b.]

Cuban Nighthawk.

Hab. Cuba, Jamaica and Southern Florida.

A set of two eggs of this smaller Nighthawk, taken with the parent bird by C. J. Maynard, on Merritts Island, May 8, 1886, are in Mr. Sibley's collection. The ground-color of these eggs is of a clear grayish-white, evenly spotted over the surface with brownish and light slate, so thickly as to nearly obscure the ground. The markings are bolder and darker than those in a series of twelve eggs of *C. virginianus*.

ianus. Their sizes are 1.12 x .81, 1.06 x .80. The average size, according to Prof. Ridgway, is 1.13 x .80.

421. *Chordeiles texensis* LAWR. [358.]

Texan Nighthawk.

Hab. Southwestern border of the United States—Texas to Southern California, south to Costa Rica.

The Texan Nighthawk is smaller than the foregoing species, the general tone of the plumage lighter, and it differs otherwise. It is a common species in various regions in Southern Texas, New Mexico, Arizona, etc. Mr. Sennett describes its flight as resembling that of the Whip-poor-will, but it does not indulge in the perpendicular descents accompanied by the whirl of wings so characteristic of *C. virginianus*. On the Lower Rio Grande eggs were obtained as early as April 26, and fresh ones found as late as May 19. They were always laid on the bare, hot ground. Dr. Merrill states that the notes of this species are a curious mewling call difficult to describe. He found the eggs in the vicinity of Brownsville, Texas, usually deposited in exposed situations, among sparse chaparral on ground baked almost as hard as a brick by the intense heat of the sun. One set was found on a small piece of tin, near a frequented path. Mr. Rachford informs me that in Jefferson county, Texas, this species usually deposits its two eggs on the ground, in a well-beaten cow-path; the nesting season begins from about May 10th, and eggs may be found in the latter part of June. Dr. Merrill states that the eggs vary considerably, but exactly resemble the surface on which they are placed. The ground-color is usually clay; some are very sparingly dotted with brown; others mottled with light brown and obscure lilac; some are so thickly marbled with brown and lilac on a dark ground as to give them a granite-like appearance. They average 1.07 x .77.

422. *Cypseloides niger* (GMEL.) [350.]

Black Swift.

Hab. Western portions of the United States, north to Colorado, Nevada, Oregon, Washington Territory and British Columbia; south to Southern Central America; Jamaica, Hayti and other West India Islands.

The Black Swift has been met with sparingly in the various regions cited in the above habitat. Another common name for this bird is Northern Black Cloud Swift. Comparatively little has been ascertained concerning its general habits, and its eggs have remained unknown until the present year (1888), when Mr. M. H. Gormley discovered its nest and eggs in the town of Seattle, King county, Washington Territory. June 6 he found a nest in the interior of a cornice of a small frame building situated on Yesler's Wharf of that city. The entrance to the nest was at one end of the cornice; the deck or top being sprung

so as to leave an opening. The compartment was about twenty inches square; the nest was composed of leaves, yet green, bits of paper, chips, a few horse hairs and straw, the leaves and paper forming the lining. This nest contained five fresh white eggs of the following dimensions: 1.00 x .71, 1.00 x .70, 1.02 x .70, .96 x .68, .96 x .68. On June 28 a set of four eggs was taken from the same nest, and presumably from the same pair of birds. The materials of this nest were the same as those of the first, except the addition of a piece of tinfoil used to cover tobacco. Incubation had begun, and the female had to be pushed off the nest in order to secure the eggs. Their sizes are .96 x .67, .98 x .71, .99 x .69, 1.00 x .71. No glue or adhesive saliva joined the materials of the nests together, as is the case with other species of the family whose nidification is known.

Mr. Gormley states that the birds are rather abundant at Seattle, usually nesting in the cornices of buildings near the water front, in the business part of the city.*

423. *Chætura pelagica* (LINN.) [351.]

Chimney Swift.

Hab. Eastern North America, north to Labrador and in the interior to the Fur Countries; west to the edge of the Great Plains.

The progress of civilization has brought about conditions and causes which have given rise to this bird's common and now appropriate name, Chimney Swift, or, as it is probably better known, Chimney "Swallow." When the country was first settled this species was known to breed only in the hollow trunks of forest trees, but as soon as the chimneys of dwellings erected by civilized man presented greater convenience and better security against enemies this bird forsook its primitive nesting places, and now only in remote regions or wild portions of the country, where natural facilities are still afforded, it is found breeding in the hollows of decaying trees.

The nest, as shown in our illustration, is a beautiful semi-circular basket made of small dead twigs of nearly uniform length and thickness, and when attached to the inside of a chimney is placed sufficiently below the top to be protected from the rays of the sun. The twigs are broken from trees by the birds while on the wing. They are all strongly cemented together and fastened to the wall with the saliva of the birds. This glue-like substance dries and hardens, and becomes so firm that, when the nest is separated from the sides of chimneys, portions of the brick to which it is fastened often adhere to the structure. My friend, Mr. Arnold Boyle, took a nest of this species from the inside of a barn in Wyandot county, Ohio; its position was similar to that of the Barn

* Auk, V, pp. 424-425.

Swallow. From four to six narrowly elliptical pure white eggs are deposited, ordinarily four. May and June are the nesting months, and usually but one brood is reared in a season. A set of four eggs, collected in the Adirondack region, Essex county, New York, June 27, measure .82 x .52, .81 x .52, .84 x .51, .82 x .50; a set of five taken in Franklin county, Ohio, exhibit the following sizes: .79 x .50, .80 x .50, .80 x .52, .77 x .50, .79 x .53. The eggs in a large series range from .74 to .86 in length and from .47 to .55 in breadth.

424. *Chætura vauxii* (TOWNS.) [352.]

Vaux's Swift.

Hab. Pacific coast, from British Columbia south in winter to Guatemala.

This is a lighter colored and smaller species than the Chimney Swift. The habits of the two birds, however, are similar, except that Vaux's Swift is said only to nest in hollow trees. In various regions of Oregon and in Washington Territory this species is a common summer resident, where it breeds in May and June, fastening to the inside walls of hollow tree trunks and stubs the half-saucer-shaped nest of twigs, which is glued together with the bird's saliva. Four or five narrow-elliptical white eggs are deposited, which have an average size of .74 x .50.

428. *Trochilus colubris* LINN. [335.]

Ruby-throated Hummingbird.

Hab. Eastern United States to the Great Plains, north to Canada, south in winter to Cuba, Eastern Mexico and Central America, to Uruguay.

This is the only species of Hummingbird found east of the Mississippi, where it is common and well-known. Its small size, iridescent plumage, its marvelous swiftness of flight, and the architectural beauty of its nest are the admiration of all.

The eggs of the whole family of Hummingbirds, as far as known, are white, unspotted; rather elliptical than oval, and always two in number. The only difference noticed are the relative variations in size. The nests are generally saddled upon a horizontal branch, are cup-like in shape, and are mostly made up of various kinds of soft vegetable down; in nearly all cases covered on the outside with a coating of lichens or mosses. The nest of the Ruby-throated Hummingbird is a miniature of the Blue-gray Gnatcatcher's. It is felted with a mass of exquisitely soft, cottony, silky, or woolly substances, such as the down from the stem of plants, and is artistically covered on the outside with lichens. It is usually placed on a horizontal limb of a forest or orchard tree. Several specimens before me are placed on branches that were slanting, and the nests rest in small forks. A very fine one measures, outwardly, one and three-fourth inches broad by one and a half

deep. Nests saddled on thick limbs are usually larger. In Ohio the Ruby-throat prefers nesting in the branches of the buckeye to all other trees. The birds are especially abundant about this tree when it is in full blossom early in May. The nesting time is from about the middle of May to the latter part of June. The average size of thirty eggs is .51 x .34.

429. *Trochilus alexandri* BOURC. & MULS. [336.]

Black-chinned Hummingbird.

Hab. Western United States, from the Rocky Mountains to the Pacific, south into Mexico.

This Hummingbird nests in more open ground than the Rufous or Anna's, placing the structure usually on the small branches of oaks and sycamores. Sometimes it rests lightly in the forks of a slender twig. It is composed of the web or down found on the under side of the leaves of the sycamore; the effect is that the nest looks like a small, round, yellow sponge. Eggs same as those of the Ruby-throat, with an average size of .50 x .30.

Mr. W. E. D. Scott states that this species is an abundant summer resident in the Catalina mountains in Southern Arizona, and by the last of May the birds are mated and begin breeding. He found fresh eggs as late as July and early in August. Mr. Stephens notes this Hummingbird as not common in the San Bernardino Valley. A nest taken May 22 was built in a willow, eight feet from the ground, and contained two eggs in which incubation had commenced.

430. *Trochilus costæ* (BOURC.) [337.]

Costa's Hummingbird.

Hab. Lower California, Western Mexico, Arizona and Southern California.

Costa's Hummingbird is more or less abundant in various regions of Arizona and Southern California. It is not generally so abundant as the Black-chinned Hummingbird, in whose company it is often found breeding. Small streams in the mountain canons, fringed with alder, laurel, sycamore and other shrubbery are their favorite resorts. Mr. Scott did not find this species very common at Riverside, Pinal county, Arizona, in 1882. On May 5 a nest was found built in a cottonwood tree thirty-five feet from the ground, almost at the extremity of the branches.

Four sets of the eggs, with the nests, of Costa's Hummer, collected in the neighborhood of Banning, California, May 12 and 13, 1884, are before me. The nests were built in shrubs, varying from six to twelve feet in height. Two of the nests rest in slender forks, while the other two are built on small twigs. The materials in these do not differ essentially from those in ten nests of the Anna's Hummingbird, consisting of soft, downy, yellowish or grayish vegetable substances, with

here and there bits of flower stems, the whole covered on the outside with spider webs. Each of these nests contained two eggs, and they exhibit the following sizes: $.49 \times .31$, $.49 \times .29$; $.45 \times .30$, $.47 \times .31$; $.48 \times .30$, $.49 \times .30$; $.45 \times .32$, $.46 \times .30$.

431. *Trochilus anna* (Less.) [338.]

Anna's Hummingbird.

Hab. Valleys of California, Arizona and Mexico.

Anna's Hummingbird is a common resident of California; its nest and eggs can be found almost any time in May and June. In the vicinity of Haywards, California, Mr. Emerson took a nest of this species which contained two eggs, January 20. It was built in slender forks of a pear tree, about eight feet from the ground. Over the entire outside of this nest are distributed green lichens. Mr. H. R. Taylor, of Alameda, California, records a nest containing two eggs far advanced in incubation, which he found February 13. The nest was placed about thirty feet from the ground, near the end of slender limb of a cypress tree. The birds build in trees, and are not particular what kind or where they are situated; on hillside, along creeks, in orchards or in gardens. Ten nests collected by Mr. R. B. Herron, at San Geronio Pass, California, in May, do not exhibit great variation in their general make-up and style. They are composed of thistle down and willow-cotton, with occasionally a few small feathers and bits of flower stems; on the outside, moss well covered with spider webs, with here and there pieces of lichens. Eggs same as those of *T. colubris*; four specimens measure as follows: $.45 \times .30$, $.47 \times .30$, $.49 \times .32$, $.49 \times .30$. Twenty-four eggs have an average size of $.50 \times .32$.

432. *Trochilus platycercus* Swains. [339.]

Broad-tailed Hummingbird.

Hab. Rocky Mountain plateau region of the United States, from Montana, Idaho and Wyoming Territories southward to Guatemala.

This Hummingbird is a common species in the Rocky Mountain regions of the United States, and is particularly numerous in New Mexico, Colorado and northward. In its flight it is said to utter almost constantly a sharp screeching or chattering note. Large numbers of these birds are often found breeding in thickets of dwarf willows along streams. The nests are beautiful structures, composed of soft, vegetable down and covered externally with lichens and bark-fibre, resembling the twigs to which they are attached, and their height from the ground ranges from three to ten feet. The nests are similar to those of the Ruby-throat, but are usually suspended on small, swaying twigs, sometimes directly over running water. In Colorado this species rears two broods in a season. Ten eggs before me are not distinguishable

from those of the Ruby-throated Hummingbird in size, color and shape.

433. *Trochilus rufus* GMEL [340.]

Rufous Hummingbird.

Hab. Western North America, from the Rocky Mountains to the Pacific coast; north to or nearly to Alaska, south over the Table Lands of Mexico.

The commonest and most extensively distributed Hummingbird of the West; from the Rocky Mountains to the Pacific, and from Mexico northward. Its favorite nesting site is along the borders of creeks, on the overhanging limbs and branches of trees and bushes. Mr. A. W. Anthony mentions this species as abundant in Washington county, Oregon, breeding nearly everywhere. Nests were found in ferns, in bushes, trees and vines overhanging embankments; the latter, he states, seems to be the favorite locality, six nests being found in an old railroad cut, in May and June. The materials used are willow-floss and soft plant-down. Frequently nests are found covered with light-colored lichens, which resemble the small bunches of moss in the trees where they are built. The eggs are not distinguishable from those of *T. colubris*, except that they average slightly smaller.

434. *Trochilus alleni* (HENSH.) [341.]

Allen's Hummingbird.

Hab. Coast district of California, north to British Columbia, south to Arizona.

Allen's Hummingbird is found throughout the coast region of California and northward. This species is said to be very lively and active, keeping constantly in open places, and always perching upon the most prominent dead twigs. Compared to the unsuspecting nature of the Rufous Hummingbird, it is extremely shy. Nests usually in thickets and trees along creeks and canons. The outside of the nest is composed of fine moss, the lining is the delicate floss of the cottonwood. Eggs same as those of *T. colubris*. All the Hummingbirds that breed in California are said to rear two broods in a season.

435. *Trochilus heloisa* (LESS & DELATT.) [342.]

Heloise's Hummingbird.

Hab. Eastern Mexico and Southern Texas.

In various districts in Southwestern Texas Heloise's Hummingbird is not uncommon. It possesses the same general characteristics as are common to the birds of this family.

Captain B. F. Goss has a set of two eggs with the nest of this species, taken in El Paso county, Texas, April 14, 1884. The nest was placed in a bush, and is a beautiful structure made of white-cottony fibre from seed pods. On the outside it is sparingly covered with small lichens. The eggs are pure white, and measure .45 x .36, .46 x .34, respectively.

436. *Trochilus calliope* GOULD. [343.]**Calliope Hummingbird.**

Hab. Western United States, north to British Columbia, south to Mexico; east to Rocky Mountains.

One of the smallest of Hummingbirds. Common to the mountains of the Pacific slope, from British Columbia south to the Table Lands of Mexico. It is abundant in some localities on the eastern slopes of the Sierra Nevada Mountains, and occurs as far east as the Rocky Mountain region, from New Mexico north to Montana.

In the vicinity of Fort Klamath Oregon, Dr. Merrill found this species abundant after May 16 about the blossoms of wild currant and gooseberry bushes. During the breeding season the birds are generally distributed in deep pine woods as well as in more open places, the constant, sharp shrill notes of the males indicating their presence. A nest found about the middle of July which the young had just left was placed upon a dead, flattened cone of *Pinus contorta*. It was composed of thin strips of gray bark, with a few spiders' webs on the outside; the lining was similar, but with a few small tufts of a cottony blossom from some tree; the nest was just the color of the cone, and was admirably adapted to escape notice. Another nest containing two nearly fledged young was found at about the same time, but was quite unlike the one just described in construction and situation, being of the common Hummingbird type, and saddled upon a dead willow twig.

Near Carson, Nevada, Mr. Walter E. Bryant found a nest of this species built upon a projecting splinter of a wood pile at a height of five feet. Another was secured to a rope within an outbuilding. The eggs of this species measure .48 x .32.

439. *Amazilia cerviniventris* GOULD [346.]**Buff-bellied Hummingbird.**

Hab. Lower Rio Grande Valley in Texas, south to Eastern Mexico.

Dr. James C. Merrill added this Hummingbird to the avifauna of the United States in 1876, the first specimen being taken August 17, on the Lower Rio Grande, in Texas. He found it nowhere so abundant as on the military reservation at Fort Brown, where it was perfectly at home among the dense, tangled thickets, darting rapidly among the bushes and creeping vines. A rather noisy bird, its shrill cries usually first attracts one's attention to its presence. A Hummer's nest, undoubtedly made by this species, was found in September, 1877, within the fort. It was placed on the fork of a dead, drooping twig of a small tree on the edge of a path through a thicket; it was about seven feet from the ground, and contained the shriveled body of a young bird. The nest was made of downy blossoms of the tree in which it was placed, bound on the outside with cobwebs, and rather sparingly

covered with lichens. The inside depth was somewhat less than 1.00; the diameter .50; external depth 1.50. No description of the eggs are at hand, but they are doubtless the same as those belonging to other birds of this family.

440. *Basilinna xantusi* (LAWR.) [347.]

Xantus's Hummingbird.

Hab. Lower California.

This Hummingbird occurs in the southern portion of Lower California. It was first taken at Cape St. Lucas by Mr. Xantus, and described by Mr. George N. Lawrence in 1860. I have no information regarding its specific habits; they perhaps do not differ essentially from those which characterize other Hummingbirds.

Prof. Ridgway describes the nest as composed of various soft vegetable fibres (especially raw cotton, spiders' webs, etc.), and attached to small twigs. Size about 1.50 in diameter by about .80 in height, the cavity about 1.00 x .55-.60. Eggs .47 x .31.*

[442.] *Milvulus tyrannus* (LINN.) [302.]

Fork-tailed Flycatcher.

Hab. Mexico to South America. Accidental in the United States—Mississippi, Louisiana, Kentucky, New Jersey.

This handsome Flycatcher with a very deeply forked tail is found throughout tropical America. Its tail is about a foot long, and forked as much as six to eight inches. The bird's occurrence in the United States is purely accidental, and only a few specimens have thus far been taken in the regions cited above. Its habits are said not to differ essentially from those of the Scissor-tailed Flycatcher of our southern fauna.

Dr. Brewer describes an egg of this species obtained by Dr. Balamus, from Cayenne, as bearing a strong resemblance to the egg of the common Kingbird. It has a clear white ground, and is spotted with deep, bold markings of reddish-brown; size .90 x .68.

443. *Milvulus forficatus* (GMEL.) [301.]

Scissor-tailed Flycatcher.

Hab. Eastern Mexico and southwestern prairie districts of the United States, north to Indian Territory, Kansas and the southwestern portion of Missouri. Accidental in the Eastern States—Virginia, New Jersey, New England—even as far north as Hudson Bay Territory and Manitoba.

Known as the Swallow-tailed or Fork-tailed Flycatcher—an elegant, graceful bird, common in the southwestern portion of the United States, from Kansas and southwestern Missouri southward—especially abundant in Texas. Mr. Singley states that in Lee county, Texas, this bird nests in trees varying from six to twenty feet from the ground. He describes a typical nest as built of weeds, small stems

* Manual N. A. Birds, p. 318.

and thistle-down, and lined with down and sometimes with a few fibrous roots. Since the introduction of cotton gins and sheep ranches most of the nests are built of weeds and cotton or wool, or both felted, lined with the same, but oftener with no lining. Mr. E. C. Davis informs me that the favorite nesting site of this bird in Cooke county, Texas, is in the low mesquite bushes on the prairies. He has frequently found double nests; one now in his collection consists of three nests built on each other and made entirely of cotton, measuring fifteen inches from top to bottom.

Mr. Singley says the usual number of eggs in a set is five, fully eighty per cent. being of this number; the other twenty per cent. is about equally distributed between sets of four and six. They are white, or creamy-white, marked with a few dark red spots, and occasionally of an obscure purple, chiefly at the larger end; the eggs vary in color from pure white, unmarked specimens, which are very rare, to finely speckled with reddish-brown, and often covered with large spots and blotches of brown and lilac, and look as if whitewash had been brushed over the colors. A large series of these eggs in Mr. Norris' cabinet demonstrate the fact that they do not show as great a variation in their markings as those of the common Kingbird, which they resemble; they average smaller, and their sizes are more constant. Their average size is .87 x .67.

444. *Tyrannus tyrannus* (LINN.) [304.]

Kingbird.

Hab. Eastern temperate North America, south to Central and western South America to Bolivia; Cuba; Bahamas. Rare west of the Rocky Mountains.

A common bird in Eastern United States, and perhaps better known by the name of Bee-bird or Bee-martin. It destroys thousands of noxious insects, which more than compensates for all the bees it eats. This bird's pugnacious disposition during the breeding season, the boldness, persistent tenacity, and reckless courage with which it attacks other birds, even crows, hawks and owls, are characteristics familiar to all. The nest is placed in an orchard or garden, or by the roadside, on a horizontal bough, or in a fork at a moderate height; sometimes in the top of the tallest trees along streams. It is bulky, openly situated, and as easily found as that of the Robin. Exteriorly it is ragged and loose, but well cupped and brimmed, consisting of twigs, weedstalks, grasses, rootlets, bits of vegetable-down and wool firmly matted together. The lining is of slender grasses, chicken feathers, horse hair, fibres, rootlets and wool, used singly or combined in various proportions.

The eggs range from three to five in number. A large series be-

fore me exhibit a wonderful diversity in their markings; the ground color is either white or creamy-white, and the common type is spotted with rich umber and chestnut-red. The sizes vary from .80 to 1.05 in length by .69 to .75 in breadth. The average size of forty specimens is .97 x .70. Sometimes sets of these eggs are found almost wholly unmarked.

445. *Tyrannus dominicensis* (GMEL.) [303.]

Gray Kingbird.

Hab. South Carolina, Georgia and Florida; West Indies, coasts of the Caribbean Sea and Gulf of Mexico. Accidental in Massachusetts.

A larger species than the common Kingbird, but its general appearance, habits and nesting are the same. It is a common bird in the West Indies, and is found regularly in Florida and northward to Georgia, etc. Mr. Stuart states that it breeds in Florida in the months of May and June, building for its nest a frail structure of dry twigs, lined with a few roots, dead moss or fibrous plant stems; it is placed in low bushes or in trees at a considerable height. The favorite nesting localities are along streams in live oaks.

Usually three, sometimes four eggs are deposited; they have a ground color of a creamy, pinkish or rosy tint, spotted, blotched or dashed with umber-brown and lilac-gray. A set of three eggs in my cabinet, taken near Tampa, Florida, May 20, 1885, measure 1.00 x .75, 1.02 x .76, 1.04 x .75; another set of three, taken near Thomasville, Georgia, June 4, 1888, exhibit the following sizes: .99 x .70, 1.00 x .72, 1.00 x .73. Mr. Norris has a set of four eggs, taken in Matee, Florida, May 25; these measure .97 x .72, .99 x .82, .97 x .70, .97 x .74.

446. *Tyrannus melancholicus couchii* (BAIRD) [305.]

Couch's Kingbird.

Hab. Northern portion of Central America, north through Mexico to southern border of the United States (Southern Texas to Arizona).

This is a common bird from Guatemala north through Mexico to the southern border of Texas, New Mexico and Arizona. It possesses the same characteristics common to birds of its family.

A nest and four fresh eggs are described by Mr. Sennett.* These, together with both parents, were taken at Lomita Ranch, on the Rio Grande, Texas, in 1881. The nest was situated some twenty feet from the ground, on a small lateral branch of a large elm, in a grove not far from houses. It was composed of small elm twigs, with a little Spanish moss, a few branchlets and leaves of the growing elm, lined with fine rootlets and black hair-like heart of the Spanish moss. The outside diameter is 6 inches and the depth 2 inches; inside diameter 3 and depth 1.25 inches.

* Auk, I, p. 93.

The eggs, Mr. Sennett says, have a general resemblance to those of all our Tyrant Flycatchers, but are quite distinct in form, size and ground-color from any he had seen. The blotches are more numerous and smaller; the large end is very round, and the small end quite pointed; the ground-color is rich buff; the blotches are similar to those of the Kingbird's eggs, but more irregularly distributed over the entire egg; sizes 1.00 x .76, .99 x .76, .98 x .76, .97 x .72.

447. *Tyrannus verticalis* SAY [306.]

Arkansas Kingbird.

Hab. Western North America from the Plains to the Pacific, south through Western Mexico to Guatemala. Accidental in Eastern States--Maine, New York, New Jersey and Maryland.

The Western Kingbird possesses the same general traits which are common to the Kingbird of the Eastern States. Col. Goss mentions it as a common summer resident in middle and Western Kansas, arriving about the first of May; begins laying in the latter part of the month. Mr. A. M. Shields states that in the region about Los Angeles, California, this species is found nesting from about the first of May until late in July, building in any convenient place; in the frame-work of a windmill, the cornice of a house, on fence posts, in the forks of trees at heights ranging from five to fifty feet.* The nest is built of any available material, rags, grass and twigs, lined with wool or cotton.

The eggs are five, sometimes four, in number. A large series before me do not differ essentially from those of *T. tyrannus*, except that they average smaller; .94 x .65.

448. *Tyrannus vociferans* SWAINS [307.]

Cassin's Kingbird.

Hab. Guatemala north through Mexico and Western United States to Idaho and Southern Wyoming, and coast district of Southern California.

Cassin's Kingbird greatly resembles *T. verticalis* in color; is less lively, and not so quarrelsome or pugnacious in its nature. It is a common bird in Southern California, but is nowhere so abundant as the Arkansas Flycatcher. In the Rocky Mountain region, according to Dr. Coues, it mostly replaces *verticalis* in the breeding season. A common bird in Arizona. Mr. W. E. D. Scott states that the position of

* Mr. Walter E. Bryant, in his papers entitled "Unusual Nesting Sites," mentions some curious freaks concerning the nesting of the Arkansas Kingbird: An old and much flattened nest of Bullock's Oriole was found relined, and containing four Kingbird's eggs. A nest was found by Mr. A. M. Ingersoll built upon a fence-post more than half a mile from the nearest tree. It was secured from observation on one side by a board nailed to the post and projecting above it.

One of the most remarkable instances of persistency in nest building was met with in the case of a pair of Kingbirds, which had attempted to construct a nest upon the outer end of a windmill fan. A horizontal blade had probably been first selected, but an occasional breath of air had slightly turned the mill, bringing into place another and another, upon each of which had been deposited the first material for a nest until several nests were in different stages of construction, varying from the time that the windmill had remained quiet, while upon the roof below was strewn a quantity of debris that had fallen as the wheel revolved. Of course, nothing but failure could be expected from their repeated attempts.

the many nests he examined in the Catalina Mountain region shows a decided preference for the evergreen oaks over other trees. The nest, which is commonly from twenty to twenty-five feet from the ground, is most always placed near the extremity of a branch, and is hidden by the thick leaves. Six nests and a large series of the eggs of this species before me do not differ essentially from those of *T. tyrannus* or *T. verticalis*.

449. *Pitangus derbianus* (KAUP.) [308.]

Derby Flycatcher.

Hab. Northern South America, Central America, Mexico, north to the Valley of the Rio Grande in Texas.

A large, spirited-looking Flycatcher of Mexico and southward, lately found on the Lower Rio Grande in Texas. It is said to build its nest chiefly in thorny bushes and trees; the structure is large and dome-shaped, like a Magpie's nest, with an entrance on one side. It is composed of twigs, coarse straws, dried mosses, lichens, etc. The eggs are from three to five, sometimes six in number; creamy-white, speckled, spotted and blotched, chiefly at the larger end, with umber-brown, chestnut and lilac. Average size of ten eggs is 1.20 x .80; an average specimen measures 1.16 x .75.

452. *Myiarchus crinitus* (LYNN.) [312.]

Crested Flycatcher.

Hab. Eastern United States, west to the Plains, north to Southern Canada, south in winter through Eastern Mexico and Central America to Costa Rica.

The Great-crested Flycatcher is an abundant bird in the woodlands of Eastern United States as far north as Massachusetts. Mr. Thomas McIlwraith states that it is a regular summer resident along the southern frontier of Ontario, Canada, arriving early in May. During the summer months the loud, harsh cries of this species are familiar sounds in the woods, which, when once known, are easily recognized. The Great-crested Flycatcher breeds throughout its United States range. It builds in the hollows of trees, post-holes, and, even Bluebird and Martin boxes are sometimes occupied. The nest is made of slender twigs, grasses, fine stems and rootlets, and cast-off snake skins are invariably found among the materials.

The eggs are remarkable for their coloration, having a ground of buffy-brown, streaked longitudinally by lines sharp and scratchy in style, and markings of purple and darker brown; four to six in number; average size, .82 x .62. The smallest egg selected from one hundred specimens measures .76 x .62; the largest .93 x .70. The eggs are so peculiar in their style of markings that they may be easily identified, and all the eggs of the North American species of the genus *Myiarchus* are alike in character.



BURROWING OWLS AND NESTING BURROW.

(*Speotyto cunicularia hypogaea.*)



453. *Myiarchus mexicanus* (KAUP.) [311.]**Mexican Crested Flycatcher.**

Hab. Lower Rio Grande Valley in Texas, southward to Guatemala.

The Mexican Crested Flycatcher was found by Dr. Merrill breeding in considerable numbers on the Lower Rio Grande in Texas. In its notes and habits it appears to closely resemble *M. crinitus*. With one exception, no snake skins were used in the construction of any of the nests. They were composed of felted locks of wool and hairs, and were placed not far from the ground in old Woodpeckers' holes or in natural cavities of decayed trees or stumps. Thirty-two eggs have an average size of .93 x .66, the extremes being 1.03 x .73 and .82 x .65. The eggs are similar to those of *M. crinitus*, except that they have a paler ground color and the markings are not so heavy. Mr. Norris has a set of five eggs taken May 8, 1887, in Starr county, on the extreme southern border of Texas; they measure .86 x .65, .88 x .66, .86 x .64, .89 x .63, .86 x .65.

453a. *Myiarchus mexicanus magister* RIDGW.**Arizona Crested Flycatcher.**

Hab. Western Mexico, north to Southern Arizona.

Mr. W. E. D. Scott found this bird to be common in spring and summer about Tucson, Florence, Riverside, and in the foot-hills of the Catalina Mountains up to about 4500 feet, in Southern Arizona. About Tucson it frequents the mesquite and giant cactus groves. In the Catalinas, at an altitude of 4000 feet, a nest was found built in a deserted Woodpecker's hole in a dead sycamore stub; it was entirely similar to that of *M. crinitus*, even to the traditional snake skins, and contained five eggs nearly ready to be hatched, very similar to those of *M. crinitus*, but a little larger. About Tucson the birds nest commonly in deserted Woodpeckers' holes in the giant cactus.

An egg of this Flycatcher in my cabinet, taken in Pinal county, Arizona, March 21, 1886, measures 1.03 x .70.

454. *Myiarchus cinerascens* LAWR. [313.]**Ash-throated Flycatcher.**

Hab. Western United States from the Rocky Mountains to the Pacific, north to Oregon, Nevada, Utah and Colorado, south over the highlands of Mexico to northern Central America.

The Ash-throated Flycatcher is a common species west of the Rocky Mountains; in some places it is abundant. It is described as being shy, and of retiring habits, preferring the solitude of deep, shady forests where its insect food abounds. It is usually sole possessor of the tree in which its nest is built; all intruders are violently assailed and compelled to retreat. The nests are placed in natural cavities of trees of almost any kind, in a deserted squirrel's or Woodpecker's hole. The clutches of eggs range from four to seven, ordinarily five or six,

and the nesting season is in May and June. Old excavations of Gairdner's Woodpecker are commonly resorted to by this species in California.

The eggs are colored and marked like those of *M. mexicanus*. Set No. 208 (oological collection of Walter E. Bryant), taken near Oakland, California, June 22, 1881, contains five eggs, which were fresh when found; their measurements are 22.5 x 16.5, 22 x 16, 23.5 x 16.5, 22 x 16.5, 23 x 16.5 mm.* Set No. 207, five eggs, taken at Berkely, California, June 9, 1880, contained small embryos, and show the following dimensions: 21 x 16, 21.5 x 15.5, 21.5 x 15.5, 21.5 x 16, 20 x 15 mm.†

456. *Sayornis phœbe* (LATH.) [315.]

Phœbe.

Hab. Eastern North America; in winter south to Mexico and Cuba.

The Phœbe, Pewit, or Pewee is one of the best known birds in Eastern United States, where, with the Robin and the Bluebird, it is always one of the first spring arrivals. Shady ravines, the borders of rivers and open fields are its resorts. It is commonly found perched upon a dead branch of a tree at the edge of a woods, where it sits flirting its tail and occasionally darting out after passing insects, always returning to the same twig, and frequently uttering its simple, agreeable and emphatic note, *pe-wee*, *pe-wit*, or as some hear it, *phœ-bee*. This species is called "Bridge-bird," from its habit of nesting in old wooden bridges. The original situation of the nest is the face of an upright rock, which is sometimes moss-grown and dripping with water. Wilson states that the Phœbe occasionally nests in an open well, five or six feet down, among the interstices of the side-walls; and Nuttall has known it to nest in an empty kitchen. In wild places, far from the habitation of man, hollow trees are resorted to as breeding places. Stone culverts, caves, old log houses, barns and sheds are its accustomed nesting places, and nests are often found in woods built in the roots of overturned trees. Mr. W. W. Coe records the nesting of a pair of Pewees on a ferry boat running between Portland and Middletown, Connecticut, the boat making trips every ten minutes. The birds seemed to claim Middletown as their home, and appeared to collect the material for the nest on that side of the river.

My friend, Mr. Mebs, took a nest containing five eggs from the beams of a freight car, which had recently made a trip of forty-five miles. The eggs were fresh, and, except one, unbroken. Two nests

*.89 x .65, .87 x .63, .93 x .65, .87 x .65, .91 x .65.

†.83 x .63, .85 x .61, .85 x .61, .85 x .63, .79 x .59.

which I found in culverts, over running water, were perfectly green with moss, and had evidently been occupied for several years. The nest, attached to a perpendicular surface, is built like that of the Barn Swallow, being compactly and neatly made of mud and various vegetable substances, with a lining of grass and feathers.

This bird's attachment for a chosen locality is sometimes remarkable; its nest is known to have been torn down and rebuilt again by its owner in the same spot. The eggs may be taken, when a second and even a third set will be deposited.

The eggs are ordinarily four or five in number; clutches of five are the most common; they are pure white, sometimes sparsely spotted with obscure or well-defined reddish-brown dots at the larger end. In exceptional instances the Pewee deposits six and seven eggs. Their average size is .81 x .52.

457. *Sayornis saya* (BONAP.) [316.]

Say's Phoebe.

Hab. Western United States from the Great Plains to the Pacific, north to the Saskatchewan, south to Mexico.

A bird of an extended distribution in Western United States, and possessing the same general traits common to the Eastern Pewee. Col. Goss records this species as a summer resident in Western Kansas, and styles it "a bird of the plains." Begins laying the last of May. Dr. Coues says that it is common in open or rocky country, where it is seen singly or in pairs; the principal flycatcher of unwooded regions, in weedy, brushy places, displaying the usual activity of its tribe, and uttering a melancholy note of one syllable, or a tremulous twitter.

Like *S. phæbe*, it has been found nesting in hollow trees, in caves and recesses of rocks, in outbuildings or abandoned dwellings. Sometimes, with the familiarity of the Eastern species, it will build its nest on a porch of a dwelling whose inmates are almost constantly in sight. Occasionally two broods are reared in a season. Mr. Bryant mentions a nest found by Mr. Walter Bliss at Carson, Nevada, placed within and close to the entrance of a deserted Bank Swallow's burrow. The composition of the nest varies more or less according to the locality in which it is built; vegetable fibres, soft grasses, spiders' webs, etc., are the principal materials, and the shallow cavity is lined with feathers and hair.

The eggs are four or five in number, white, with an average size of .75 x .57. A set of four eggs, taken near Banning, California, May 19, 1884, measure .75 x .61, .77 x .61, .75 x .61, .76 x .59. Mr. Norris has a set of five eggs taken in Larimer county, Colorado, July 1, 1887. The nest was placed on a projecting beam of a wagon

shed. The eggs are white, ovate in shape, and measure $.71 \times .53$, $.72 \times .55$, $.72 \times .55$, $.75 \times .56$, $.73 \times .54$.

458. *Sayornis nigricans* (SWAINS.) [317.]

Black Phoebe.

Hab. Southwestern United States and Mexico—Texas, through Southern New Mexico and Arizona to California, northward along the coast to Oregon.

This bird's general color is like that of the "Black" Snowbird, *Junco hyemalis*, now called Slate-colored Junco. It is an abundant species throughout California, Southern Arizona and New Mexico, and its general habits are much the same as those of the common Phoebe-bird; the nests are also constructed in similar situations as those of the Eastern species—in caves, on ledges of rocks, under bridges, in deserted dwellings, etc. The bird is found more or less abundantly along streams, and is said to prefer the vicinity of human habitations. Mr. Walter E. Bryant records a pair of these birds that built for two consecutive years in a well, four feet below the surface. The first year a second nest was built after the first had been taken.

Four or five eggs are laid. A set of four eggs is in my cabinet, taken April 26, from a nest in a barn by Mr. S. C. Evens, at San Jose, California. Two of them are white, unmarked, and the other two are sparsely dotted at the larger end with light reddish-brown; their sizes are $.73 \times .59$, $.80 \times .59$, $.81 \times .57$, $.80 \times .58$.

Two other sets in my collection are unmarked. Mr. Norris has two sets of eggs of the Black Phoebe; one of four was taken in Los Angeles county, California, May 10, 1887, from a nest placed in a cleft of rocks. The eggs are of a light cream color, three of them unmarked, and one with a few pin points of reddish; their sizes are $.74 \times .56$, $.74 \times .56$, $.75 \times .56$, $.72 \times .56$. A set of five, collected April 3, 1885, in Pinal county, Arizona, was taken from a nest under the shelter of a rock by the side of a stream. These are also of a light cream color; three of them marked with small specks of reddish, the others being unmarked. They exhibit the following sizes: $.74 \times .58$, $.76 \times .58$, $.79 \times .60$, $.77 \times .57$, $.75 \times .59$.

459. *Contopus borealis* (SWAINS.) [318.]

Olive-sided Flycatcher.

Hab. North America at large, north even to Greenland, south in winter to Central America and Columbia.

The Olive-sided Flycatcher, apparently nowhere abundant—at least it seems to escape the notice of observers—is very rare in the Middle and Southern States, but less so in the West. It frequents the coniferous woods of the mountain districts and those of the lowlands, breeding from Northern United States northward. In some localities of New England the Olive-sided Flycatcher is rather common, where

numerous instances of its nesting are recorded. It has been found breeding in New Jersey, Pennsylvania, and Northern Minnesota. Col. Goss says it is a rare summer resident of Kansas. The nest is usually built in evergreen trees, frequently at a great height from the ground. It is similar in construction to that of the Wood Pewee's nest, being saddled on a horizontal limb or fixed in a fork. A nest before me, taken in Windsor county, Vermont, June 10, 1884, is a shallow structure made of twigs, grasses, and bark strips, lined with soft grasses and moss; it is a very frail, clumsy structure, compared to that of *Contopus virens*. This nest was placed in a hemlock tree, thirty feet from the ground, and contained four eggs, which is the usual number.

From three to five eggs are laid by this species, and May and June are the breeding months. The eggs are creamy-white, spotted about the greater end with a distinct confluent ring of chestnut-red and brown; there are also spots of purple and lavender, and on the whole the eggs very much resemble those of the Wood Pewee, but are larger; sizes, .90 x .65, .89 x .65, .90 x .62, .90 x .67. These sizes are slightly larger than most of those stated by writers. The average size given is about .82 x .62.

461. *Contopus virens* (LINN.) [320.]

Wood Pewee.

Hab. Eastern North America to the edge of the Great Plains, north to Canada, south in winter to Eastern Mexico and Guatemala.

A common and a well-known bird in Eastern United States. By those who have a superficial knowledge of birds, it is often confounded with the common Pewee, but it is considerably smaller, slenderer, and rather darker in color. The notes of both birds are very similar; those of the Pewee consist of two syllables, quickly and sharply uttered, while those of the Wood Pewee are of two, sometimes three syllables, *pe-wee* or *pe-a-wee*, repeated at all hours of the day, but especially after sunset. The notes are truly sad but sweet, less emphatic, much slower and softer than those of the Phœbe and, as Mr. Thomas McIlwraith says: "To human ears the notes of the male appear to be the outpourings of settled sorrow, but to his mate the impressions conveyed may be very different."*

The nest of the Wood Pewee is usually placed either on the upper surface of a limb, or in a horizontal fork. It is generally built in a large tree in the interior or on the border of woods, or by the roadside. Very frequently the nest is placed on the horizontal branches of apple trees in orchards, and even in shade trees, in close proximity to

* Birds of Ontario, p. 181.

houses, or on those along river banks. The distance from the ground ranges from six to fifty feet. The nest is a very pretty, flat, compact structure, with a thick wall and a thin floor—often the branch forms a portion of the bottom of the nest, and it is frequently so thin that the eggs can be seen from beneath. Slender or split grasses, weed-fibres, narrow strips of grapevine bark, and pieces of moss-fibres make up the nest proper. Externally it is covered with pieces of lichens, which are held in position by webs, and the structure thus ornamented is rendered indistinguishable from a natural protuberance of the branch itself.*

The nesting time is in the latter part of May or in June. The eggs are usually three, rarely four in number, with a creamy-white ground of varying intensity; the markings are formed in a wreath around the larger end, or around the center; these are spots of reddish-brown, burnt umber and lilac-gray. In their short diameter the eggs measure from .50 to .59; in their long diameter from .65 to .79; the average size is about $.74 \times .55$.

462. *Contopus richardsonii* (SWAINS.) [321.]

Western Wood Pewee.

Hab. Western North America, from the Great Plains to the Pacific; north to British Columbia and interior of British America; south in winter through Mexico and Central America.

The Western Wood Pewee is common in various regions of Western United States, as in Colorado, New Mexico, Arizona, California, Oregon, etc. Col. Goss records it as a rare summer resident in Western Kansas; begins laying the first of June. Mr. Bryant informs me that it is tolerably common near Oakland, Cal., where it nests by preference on the horizontal branches of alders, about fifteen feet from the ground. According to Mr. Emerson it is not at all common about Hayward, Cal. A nest taken May 22, 1881, was placed on the large horizontal limb of a sycamore, thirty feet from the ground; another, taken in Santa Cruz county, May 26, was also built in a similar position at a height of forty feet. At Fort Klamath, Oregon, Dr. Merrill found the nests usually built on a horizontal pine branch, often at a considerable elevation; sometimes they are placed against upright twigs, and others merely saddled on the bare limb. Only one was found in an aspen tree. They averaged rather deeper than the nests of *C. virens*, and were not coated with lichens. The nests of the Western Wood Pewee do not differ widely from those of the typical *virens*, except

* A large series of the Wood Pewees' nests which I have personally taken in the past ten years are before me. The best of them are far inferior in design to even the poorest nests built by the Blue-gray Gnat-catcher and Ruby-throated Hummingbird, whose structures have high walls, gracefully turned brims, deeply cupped interiors and highly artistic, lichen-covered exteriors. Some of the nests of the Wood Pewee are scantily ornamented with lichens, are very shallow, and at once suggest a one-story, flimsy, poverty-stricken home.

that they are rarely ornamented with lichens. The eggs, too, are similar—creamy-white, marked with spots of chestnut-brown, umber and lilac-gray in wreaths about the larger end or center of the eggs; the number deposited ranges from two to four, usually three. A set of three in my cabinet collected in Douglass county, Colorado, June 10, 1887, have the following measurements: $.67 \times .57$, $.69 \times .57$, $.65 \times .57$. Mr. Norris' collection contains two sets of three eggs each, taken at Fort Klamath, Oregon, June 19 and 20, 1888. They measure by sets: $.67 \times .54$, $.66 \times .53$, $.66 \times .54$; $.63 \times .52$, $.66 \times .51$, $.69 \times .53$. The color of the markings in these eggs are paler than those of *C. virens*.

463. *Empidonax flaviventris* BAIRD. [322.]

Yellow-bellied Flycatcher.

Hab. Eastern North America to the Great Plains, south in winter through Eastern Mexico and Central America. Breeds from Northern United States northward.

A common bird in Eastern United States, where it frequents thickets, swamps and woodland. It does not seem to have been met with or observed during the breeding season so commonly as other members of the genus *Empidonax*, which is doubtless due to the peculiarity of its nidification, and from its limited breeding area within the United States. Its note is as much entitled to the name of song as many of the Warblers and other *Oscines*.

A nest containing four eggs was found by Mr. H. A. Purdy on June 18, in Aroostook county, Maine, at the edge of a wooded swamp, built in a ball of green moss in the roots of an upturned tree, two feet from the ground. It was composed of dry moss, and the outside was faced with the same in its beautiful green state. It was large for the size of the bird, and was lined mostly with fine black roots, a few pine needles and grass stems. June 10, 1878, Mr. S. D. Osborne found a nest of this species, with four eggs, on the island of Grand Manan. It was built in a good-sized hummock of moss at the edge of some low woods. The cavity extended in about two inches, and was about four inches deep, lined with a few grasses, black, hair-like roots, etc. Another nest, similar in construction, was found by Mr. Osborne in Oxford county, Maine, in a bunch of moss under the roots of a small tree in swampy woods, bordering a small stream.

Two nests of this bird were taken at Fort Fairfield, Maine, by Mr. Charles F. Batchelder. One found June 14 was in wet mixed woods of spruces, arbor vitæ and hemlocks; it was on the edge of a bank of a small brook, in a decayed tree trunk, and partly sunk in the surrounding moss. This nest contained four eggs. The second nest, which also contained four eggs, taken June 27, was deeply sunk in the

soft, green moss on the side of the stump of a fallen tree.* Mr. Frederick B. Spaulding records the finding of a nest similar to those described, near Lancaster, New Hampshire, June 14, 1886.† Mr. Spaulding's nest contained five fresh eggs. The eggs are usually four in number, buffy or creamy-white, speckled and spotted, chiefly around the larger end with rusty-brown or cinnamon. The average size is .70 x .50. The measurements of Mr. Batchelder's two sets are as follows: .68 x .52, .68 x .52, .66 x .51, .66 x .51; .70 x .54; .67 x .54, .67 x .53, .67 x .51.

464 *Empidonax difficilis* BAIRD [323.]

Western Flycatcher. †

Hab. Western United States, from the edge of the Great Plains to the Pacific; north to Sitka, south in winter to Western Mexico.

The Western Yellow-bellied Flycatcher is an abundant species throughout its United States range. Its general habits, nesting and eggs are similar to those of *flaviventris*. Mr. Walter E. Bryant mentions a nest of this species found by Mr. A. M. Ingersoll, which was built at the bottom of a hole five inches deep, made by a Red-shafted Flicker in a live oak. Mr. Emerson states that in California this bird nests in hollows in banks and along creeks, in natural cavities of trees and among the roots of fallen ones, and in some of the most out-of-the-way places; in tall Australian gum trees and in corners of rail fences. Nest composed of shreds of roots, dead leaves, cobwebs, bits of fine grass, and lined with finer grasses and a few feathers.

A set of four eggs is in my collection, taken by Mr. Ingersoll, May 2, 1886. The nest was placed on rocks four feet from running water. These specimens measure as follows: .64 x .50, .67 x .53, .63 x .49, .64 x .50. The eggs are creamy-white, spotted and finely speckled with cinnamon or reddish-brown, in some quite thickly about the larger end, often forming a complete ring, again well sprinkled over the entire surface; three or four, sometimes five in number; average size .69 x .51.

465. *Empidonax acadicus* (GMEL.) [324.]

Acadian Flycatcher.

Hab. Eastern United States, south in winter through Eastern Mexico and Central America.

A common bird in the woodlands of Eastern United States, where it is also known as the Small Green-crested Flycatcher. Breeds more or less abundantly in nearly all the Mississippi Valley region, even as far south as Eastern Texas, Southern Louisiana and Alabama. Col. Goss gives it as not uncommon in Eastern Kansas, where it arrives the

* For a detailed account of these nests and eggs, see Bull. Nutt. Ornith. Club, Vol. III, pp. 166-168-187-188; Vol. IV, pp. 240-242.

† Ornithologist and Oölogist, XII, pp. 133-134.

‡ Baird's Flycatcher in the A. O. U. Check List.

first of May and begins laying early in June. Messrs. Keyes and Williams record it as a summer resident of Iowa, but not common; several nests have been taken near Des Moines during the past few years.* In New England the Acadian Flycatcher is of rare occurrence. In Ohio and the bordering States it is an abundant species. Regions timbered with large trees, and overgrown with bushes, low trees, vines and weeds are its favorite resorts. The birds love to penetrate the shadowy depths of the forest, and delight to rear their young in the most quiet and gloomy spots.

Rarely, if ever, is the nest built in isolated trees, but frequently in those along lonely wagon-roads or at the border of woods. In these quiet retreats the observer is often startled by the bird's loud, quick and emphatic note, *what-d'-see, what-d'-ye-see*, coming from an unseen performer, who is perched in the lower branches. The distance of the nest from the ground varies from three to twenty feet, and it is usually suspended in a horizontal fork at the extremity of a low limb. In manner of attachment it resembles the nests of the Vireos, being fastened by the brim, while the bottom is unsupported. Sometimes, as when in vines or bushes, it is suspended between two parallel stems. On the whole, it is a loose, rustic fabric, made of grasses, catkins, weed-fibres and shreds of bark, and when just finished considerable quantities of grass hangs from the periphery of the nest, giving it a slovenly appearance.

Two or three eggs are the number deposited by this species. In only two instances, out of the large number which I have collected, have I found nests with four eggs, and in both cases one egg was badly addled. Their color is a light yellowish-buff of varying intensity, with a decided flesh-color tint when fresh. The markings are of a light reddish or bay or rusty-brown color, and are found either in specks or spots grouped chiefly about the larger end. Ten specimens offer the following sizes: .70 x .53, .70 x .56, .70 x .53, .72 x .54, .75 x .54, .77 x .58, .77 x .56, .78 x .57, .77 x .56, .78 x .57. An average egg measures .74 x .54. The eggs are not distinguishable from those of *trillii*, except that the ground-color and markings in those of *acadicus* are generally darker.

466. *Empidonax pusillus* (SWAINS.) [325.]

Little Flycatcher.

Hab. Western North America, from the Great Plains to the Pacific, north to Sitka and Fort Simpson.

According to Dr. Coues this bird replaces the true *trilli* from the plains to the Pacific, and "is the usual 'little flycatcher' in Western

* A Preliminary Annotated Catalogue of the Birds of Iowa: By Charles R. Keyes and H. S. Williams, M. D. Extracted from Proceedings of Davenport Academy Natural Sciences, Vol. V. Davenport, Iowa: 1888, p. 23.

woodland, generally distributed. Habits, nests and eggs counterparts of those of *traillii*."

A nest containing a set of three eggs, collected by S. C. Evans, near San Jose, California, May 26, is in my cabinet. The nest was placed in the forks of a small bush, three feet from the ground. Its composition is chiefly vegetable fibres, loosely put together; the lining is of the same material, but of finer shreds, and horse hair. The eggs have a pale yellowish-buff ground-color, spotted and speckled at the greater end with light reddish and madder-brown; sizes, $.73 \times .53$, $.74 \times .51$, $.74 \times .53$.

466a. *Empidonax pusillus traillii* (AUD.) [325a.]

Traill's Flycatcher.

Hab. Eastern North America, south in winter through Central to Northern South America.

Traill's Flycatcher breeds from the Northern United States northward, and as far south as Southern Illinois and Missouri. The locality usually selected as a nesting site by this species is in a thick growth of alders bordering a stream, or in the deep solitude of a lonely wood, where it is associated with the Acadian Flycatcher during the breeding season. Wherever found breeding *traillii* is more abundant than is generally supposed, but from its retiring habits is little known.

Our illustration represents a typical nest of Traill's Flycatcher, taken in June, 1885, placed in a clump of alders. They are scarcely ever placed higher than eight feet from the ground; in most cases about four. In nearly all instances they are built in an upright fork, and have a strong resemblance to the usual structure of the Yellow Warbler, but lack in compactness and neatness. The external or greater portion of the nest is composed of hempen fibres, internally lined in true Flycatcher style with fine grasses. In some, however, there is a slight lining of horse-hair and of the down from the milkweed or thistle. A typical nest measures two and a half inches in height and three in diameter, with a cavity one inch and a half in diameter and two inches deep.

Three eggs is the usual complement, although four is not uncommon, and they are often found in varying stages of incubation. The ground-color of the eggs is extremely variable. In some it is of a cream, in others approaching buff. In four sets there is a striking variation in the distribution of the markings. They are usually marked, chiefly at the larger end, with blotches of red and reddish-brown, and while in some the markings are simply very small dots sparingly sprinkled over the surface, in others these dottings are scarcely visible, giving them the appearance of an almost unspotted surface.

Six eggs exhibit the following measurements: .72 x .55, .70 x .53, .70 x .52, .64 x .53, .69 x .52, .70 x .53. An average specimen measures .73 x .53. The eggs of *trailli* are paler in ground-color and markings than those of *academicus*, but the difference is so slight that no one can differentiate them with certainty.

467. *Empidonax minimus* BAIRD. [326.]

Least Flycatcher.

Hab. Eastern North America, south in winter through Central to Northern South America. Breeds from the Northern States northward.

In all the States between the Atlantic and the Great Plains the Least Flycatcher is an abundant species, occurring as a migrant and breeding from about 40° latitude northward. Breeds abundantly in New England and throughout all the Northern States—New York, Michigan, Wisconsin, Minnesota, etc. An abundant summer resident in Manitoba. Adult and young specimens have been taken at San Angelo, Texas, during the breeding season. It is reported as breeding commonly at Fannin county, Texas, and sometimes in the State of Nebraska. The bird frequents the borders of woods and thickets, particularly the edges of lowland forests and the more open swamps.

The nest, commonly placed in an upright fork of a small tree or sapling, sometimes on a horizontal limb, is small, compact and felted of fine, soft materials—bark-fibres, intermingled with vegetable down, lined with fine grasses and shreds of bark, or, as is frequently the case, with a few feathers.

The nest bears a strong resemblance to that of the Redstart, and the eggs cannot be mistaken for those of any of our Flycatchers of the Eastern States, as they are wholly unlike any of them. They are normally pure white or buffy-white, *unmarked, rarely* speckled; their number is sometimes only two or three, usually four, and their average size is .65 x .50. Seven eggs measure .60 x .50, .62 x .50, .64 x .51, .64 x .52, .65 x .53, .63 x .50, .64 x .51. May and June are the nesting months.

468. *Empidonax hammondi* (XANTUS) [327.]

Hammond's Flycatcher.

Hab. Western North America, south in winter to Southern Mexico, north to the Lesser Slave Lake.

The Western representative of the Least Flycatcher from the Plains to the Pacific. The nesting and eggs are said to be substantially like those of *E. minimus*. On account of its general plain, soiled color it is called Dirty Little Flycatcher.

469. *Empidonax obscurus*. (SWAINS.) [328.]

Wright's Flycatcher.

Hab. Western United States, south to Southern Mexico, east to Rocky Mountains.

The Gray Little Flycatcher is common to the woodland, groves

and thickets of the Western States and Territories. During the breeding season, in the region about Fort Klamath, Oregon, Dr. Merrill usually found it in groves of aspens in company with the Warbling Vireo; also among the pines with Cassin's Vireo and the Western Wood Pewee.

The nests were most frequently built in young aspens, at an average height of about six feet. They resemble nests of the Yellow Warbler, which are found in the same localities; but all the nests of the Flycatcher were built against the main trunk, while all of the Warbler were on branches and generally higher from the ground. The nests are composed externally of strips of light gray bark of about the same colors as the bark of the aspens, and partly on this account and because of their location the nests are liable to escape notice if careful search is not made. The lining is sometimes a smooth, felted mass of fur and horse-hairs, in others, feathers are used, and the nests are generally more deeply cupped than is usual with this group. Pairs that are found among the pines usually place their nests in an upright form of a manzanita or buck-brush that grow abundantly in such localities.

The eggs are dull, buffy-white; seven sets of twenty-seven specimens average .68 x .53, the extremes of the sets being .65 x .50 and .72 x .57.*

471. *Pyrocephalus rubineus mexicanus* (SCL.) [330.]

Vermilion Flycatcher.

Hab. Southern border of the United States (Southern Texas to Arizona), south through Mexico to Guatemala.

Along the Rio Grande of Southern Texas and in Southern Arizona the beautiful Vermilion Flycatcher is a common species. Mr. W. E. D. Scott notes it as a common species about Riverside, Tucson, and Florence, Arizona. During the breeding season the male frequently utters a twittering song while poised in the air, in the manner of the Sparrow Hawk; during the song it snaps its bill as if catching insects. Thickets along water-courses are this bird's favorite resorts.

The nests are usually placed in horizontal forks of ratana trees, often in mesquites, not more than six feet from the ground; they are composed of small twigs and soft materials felted together, and the rims covered with lichens; the cavity is shallow. A few horse or cow hairs comprise the lining. Dr. Merrill states that they bear considerable resemblance to nests of the Wood Pewee in appearance and the manner in which they are saddled to the limb. Mr. Brewster describes a nest taken by Mr. F. Stephens on the 25th of April, at Tucson,

*Auk III, 258.

Arizona, which lacks the exterior coating of lichens.* Others were found by Mr. Stephens of a similar construction.

The usual number of eggs is three; the ground-color is a rich creamy-white, with a ring of large brown and lilac blotches at the larger end. Dr. Merrill gives the average size of fourteen eggs as .73 x .54. A set of three eggs in Mr. Norris' cabinet was taken in Cochise county, Arizona, May 21, 1888. The nest was placed in a sycamore tree near a running stream. The eggs are pale creamy-buff, with bold spots and blotches of seal-brown and lilac-gray, in a circle around the center of each egg. They measure, respectively, .71 x .53, .69 x .53, .80 x .53. Six other sets in the same cabinet show great variation.

[473.] *Alauda arvensis* LINN. [299.]

Skylark.

Hab. Europe and portions of Asia and Africa; accidental in the Bermudas and in Greenland.

The far-famed Skylark of the Old World holds a place in the avifauna of North America from its occasional occurrence in the Bermudas, and in Greenland. Several attempts have been made to introduce these desirable birds in Eastern United States, but so far the experiments have proved unsuccessful. The Skylark is an inhabitant of all the countries of Europe, and is said to be more plentiful in cultivated districts. The mating season is in April, and two broods are reared in a season. The nest is always placed on the ground, in meadows or open grassy places; it is often sheltered by a tuft of grass, clod of earth, or other projection. The materials used in its composition are grasses, plant stems, and a few chance leaves; the lining is of the same, but finer.

The eggs are three, four or five in number, and vary considerably in form and coloration; some are grayish-white with a tinge of purple or greenish-white, thickly sprinkled and mottled with a grayish-brown or drab; others are of a deep sombre hue, and in some the markings are chiefly concentrated at the larger end. These are the variations exhibited in four sets of four eggs each in my cabinet, taken in Staffordshire, England, in the latter part of April and the first of May. The smallest set offers the following sizes: .86 x .57, .87 x .60, .84 x .58, .89 x .60; the largest, .93 x .64, .95 x .64, .92 x .62, .94 x .64, respectively.

474. *Otocoris alpestris* (LINN.) [300.]

Horned Lark.

Hab. Northeastern North America—Labrador, region about Hudson Bay, Greenland, and northern parts of the Old World; in winter south in Eastern United States to the Carolinas, Illinois, etc.

The Shore Lark, the true *alpestris*, breeds in northeastern North America and Greenland, wintering in the United States. Said to

*Bull. Nutt. Ornith. Club. VII, 207.

breed abundantly in Newfoundland and Labrador. It also inhabits northern portions of the Old World. The common name is derived from the tufts of black feathers over each ear, which at will the bird has the power of erecting like the so-called "horns" of some owls.

In the Eastern States, during the winter months, flocks varying in size from a dozen to those of a hundred or more, may be seen frequenting open plains, old fields, dry shores of bays, and the banks of rivers. As there are a number of geographical varieties of the Horned Lark, the greatest uncertainty has always attended their identification, even by experts, and the breeding and winter ranges of the various sub-species do not yet seem to be clearly defined.

This was the species found by Audubon breeding on the low, mossy and sheltered hills along the dreary coast of Labrador. In the midst of the mosses and lichens that covered the rocks the bird imbedded its nest, which is composed of fine grasses, arranged in a circular form and lined with the feathers of grouse and other birds. The eggs, deposited early in July, are four or five in number, and are described by Audubon as marked with bluish as well as brown spots. European eggs are grayish-white, spotted with brownish-lavender or lilac-gray.

474a. *Otocoris alpestris leucolama* (COUES) [300a.]

Pallid Horned Lark.

Hab. Northwestern North America; in winter south over the more northern Great Plains and Great Basin of the United States to Kansas, Colorado, Utah, Nevada, etc.

This paler northwestern form of the Shore Lark breeds from Alaska southward, east of the Rocky Mountains, nearly to the United States boundary. The nest is built in a depression of the ground, and sunk a little below the surface, usually under a tuft of grass; it is well cupped and woven in a circular form of old grasses, lined with hairs. The eggs are three or four, grayish or pale olive, finely and thickly sprinkled with olive-brown. Average size .91 x .65.

474b. *Otocoris alpestris praticola* HENSH.

Prairie Horned Lark.

Hab. Upper Mississippi Valley and region of the Great Lakes; east locally to New York; south, in winter, to Virginia and Northeastern Texas.

The birds of this race may be distinguished from the typical *alpestris* by their smaller size and paler colors. In the northern half of the Mississippi Valley it breeds abundantly, and as far south as Eastern Kansas, where Col. Goss notes it as common and abundant. It begins laying the last of March. The Prairie Horned Lark breeds commonly in Indiana, Illinois, Iowa, Michigan, Wisconsin and Minnesota. It doubtless breeds, though sparingly, in Northwestern Ohio, as young birds have been taken in that section in May.

Two broods are reared in a season, the first very early—usually by the last of April. Mr. L. Jones, of Grinnell, Iowa, states that as many as three broods are reared in that region; the first nest is built late in March or early in April, the second about the first of June, and the third late in July or early in August. The highlands of meadows and cornfields are its resorts while breeding, the nest being placed in a hollow of the earth, compactly made of dry grasses and corn leaves, lined with a few feathers and horse hairs. Mr. Jones says that the first nest is most elaborately made, while the second and third are more slovenly put together.

Three or four eggs are deposited, usually four; their ground-color varying from pale olive or light greenish to dull olive-buff, thickly speckled and sprinkled with drab. A set of four eggs in my collection, taken in Poweshick county, Iowa, by Mr. Jones, gives the following measurements: .82 x .61, .84 x .62, .82 x .63, .86 x .62. Mr. Norris has five sets taken in Jasper and Black Hawk counties, Iowa, in the latter part of May and first part of June. The largest eggs in this series are those in a set taken June 4, 1885, in the latter county. They measure respectively .92 x .65, .91 x .64, .92 x .66, .93 x .65.

474c. *Otocoris alpestris arenicola* HENSH.

Desert Horned Lark.

Hab. Great Plains and Rocky Mountain region of the United States.

This subspecies inhabits the Rocky Mountain regions and the Great Basin of the United States, coming east to Dakota, where it breeds at least as far east as Ramsey county. Col. N. S. Goss gives it as a common resident in Middle and Western Kansas, where it begins laying early in April. Nesting, habits and eggs similar to *O. alpestris praticola*. Average size of the eggs .86 x .60.

Two sets, each containing three eggs, are in Mr. Norris' cabinet. They were both taken in Larimer county, Colorado, on April 9 and 12, 1887, respectively. The nests were composed of grass and roots, and were sunken in the ground under cactus plants. The eggs are ovate in shape, of an olive-buff and light pea-green ground-color, thickly speckled with drab. One set measures: .87 x .65, .86 x .64, .83 x .65; the other, .89 x .60, .87 x .63, .82 x .60, respectively.

474d. *Otocoris alpestris giraudi* HENSH.

Texan Horned Lark.

Hab. Eastern and Southeastern Texas.

Mr. Joseph L. Hancock found this form of the Shore Lark very common on the flats north of Corpus Christi, Texas, and on May 27 a nest with four eggs was taken. A set of three eggs in Mr. Norris'

collection was taken April 13, 1886, in La Salle county, Texas. The nest was a hollow in the ground, lined with a few dry weeds. The eggs are of an olive-buff, densely speckled with drab, and with a wreath of the same color at the larger end. They measure: .86 x .60, .89 x .60, .86 x .59. The eggs are elongate-ovate in form.

474e. *Otocoris alpestris chrysolæma* (WAGL.) [300b.]
Mexican Horned Lark.

Hab. Southern portions of Arizona and New Mexico, westward across Southern California; south into Mexico.

This form of the Horned Lark is a constant resident of Mexico, and it occurs northward to Southern Arizona and New Mexico, etc. No information is at hand regarding its nesting and eggs, which probably differ but little from those of others of the family.

474f. *Otocoris alpestris rubea* HENSH.
Ruddy Horned Lark.

Hab. California.

A 'sorrel' or rufous-colored race, abundant in California. Mr. Shields informs me that this bird may always be seen in greater or less abundance on the broad plains and prairies of Los Angeles county, California. He found their nests, containing fresh eggs, as early as April 15 and as late as the middle of June. The eggs were three or four in number, commonly four, and sometimes five. One nest was found containing six eggs. The nest is usually placed in a depression of the ground under a small bush, tuft of grass, vines, by the side of a clod of earth, small rock, etc. It is composed of fine straw and grasses lined with horse hairs. Mr. W. O. Emerson's collection contains a series of this Lark's eggs, collected in San Diego county, California, and in comparing them with a large number of those from the East, South and Middle States there is really no perceptible difference in their general shape, color and markings.

My cabinet contains thirty eggs of the Ruddy Horned Lark, taken in various parts of California. Their color is a pale olive-buff, finely and densely sprinkled with a rusty-drab color. Ten specimens measure: .82 x .54, .84 x .53, .83 x .56, .83 x .51, .82 x .57, .80 x .56, .84 x .56, .80 x .59, .83 x .56, .80 x .56.

474g. *Otocoris alpestris strigata* HENSH.
Streaked Horned Lark.

Hab. Coast region of Oregon, Washington Territory and British Columbia; south in winter to portions of California and Nevada.

This conspicuously streaked and striped Shore Lark is larger than the California bird, *O. a. rubea*, and is found breeding from Oregon northward. To Dr. James C. Merrill, U. S. A., belongs the honor of having first collected the eggs of this bird. Near Fort Klamath, Ore-

gon, May 30, 1887, he found a nest which on June 4 contained two eggs. This was the first set of these eggs known, and remained unique in collections until a second set was also found near Fort Klamath, by another collector, on June 1, 1888, which is now in Mr. Norris' collection. The nest was sunken in the ground, and was made of grass, very loosely constructed. It contained four eggs. Two of them have an olive-buff ground-color, while the other two are of a light pea-green. All are thickly speckled with light brown. They are ovate in shape, and measure: .83 x .58, .83 x .60, .85 x .58, .85 x .60.

475. *Pica pica hudsonica* (SAB.) [286.]

American Magpie.

Hab. Western North America (except California), east to the Rocky Mountains, north to Alaska, south to New Mexico and Arizona.

Known as the Black-billed Magpie. A bird of a bad reputation—a rascal, thief, and a rogue in general, but like the Devil, is not perhaps “as black as he is painted.” The camp tales of many a western traveler are interspersed with incidents illustrating the tricks and thieving propensities of the Magpie. As pets, their familiarity becomes a decided nuisance. A common species on the plains, mountains and hills of Colorado, where it breeds in abundance. The height of the nest from the ground, Mr. Dille says, ranges from six to sixty feet; they are often built in the branches of a slender sapling, or in a scrubby willow. In the mountains the large black pine tree is this bird's favorite nesting site, and often as many as four nests are built in a single tree.

The nests are large and bulky—a rustic lattice-work of sticks, measuring from two to three feet high, though not more than twelve to eighteen inches in the greatest diameter. The nest has an arched roof, with an opening on the side. Sometimes these dome-shaped roofs and doorways are not very artistically or elaborately made, and the observer is often compelled to put on the finishing touches with his imagination. The sticks are cemented together with mud, and the lining of the nests consist usually of a few grasses or roots. The long tails of the Magpies may be observed protruding from one of the entrances of the nest while incubating.

The number of eggs varies from five to nine, commonly seven, and they are deposited in Colorado as early as the latter part of April, usually, however, in May. Dr. Merrill took a set of eggs at Modoc Point, Oregon, on April 8. The eggs are grayish-white, with a yellowish, occasionally with a greenish tinge, spotted, dashed and dotted with markings of purplish or violet-brown; most thickly around the larger end. Ten eggs measure: 1.32 x .89, 1.37 x .90, 1.38 x .92, 1.40 x .94, 1.34 x .90, 1.36 x .89, 1.42 x .92, 1.34 x .89, 1.42 x .87, 1.40 x .93. Mr.

Norris has eggs that measure as large as 1.57 x .94 and as small as 1.21 x .91. An average egg measures 1.32 x .89.

476. *Pica nuttalli* AUD [287.]

Yellow-billed Magpie.

Hab. California.

The Yellow-billed Magpie is confined exclusively to California, where it breeds abundantly; and it begins nesting about the first of April. Its general habits are like those of *P. hudsonica*, and the nest is similarly constructed.

The eggs range from five to nine in number, usually six or seven. They are of a light drab, so thickly marked with fine cloudings of an obscure lavender color as nearly to conceal the ground, and to give the egg the appearance of an almost violet-brown. A set of six eggs, collected in Wheeler Canon, near Santa Paula, California, exhibit the following dimensions: 1.31 x .89, 1.28 x .89, 1.31 x .89, 1.32 x .89, 1.30 x .88, 1.28 x .90. A set of six eggs in my cabinet, taken from a nest situated twenty feet from the ground in an oak tree, near Santa Barba, California, April 10, 1887, offers the following sizes: 1.30 x .85, 1.29 x .84, 1.29 x .90, 1.30 x .82, 1.28 x .81, 1.25 x .86.

477. *Cyanocitta cristata* (LINN.) [289.]

Blue Jay.

Hab. Eastern North America except Florida, west to the Plains, north to the Fur Countries.

The well-known Blue Jay is abundant in Eastern North America, where it breeds in the latter part of April, in May and June, according to locality. He is a conspicuous member of a family of questionable character and, as in the case of the Magpie, unjust prejudices have doubtless done much to brand him a profligate. His fine personal dress, and noisy, boisterous habits, only serve to make him the more prominent as a rowdy full of cunning traits. Yet no observer will dispute that the sagacity often evinced by this bird—his forethought, intelligence and sensibility, are strongly akin to reason; and according to the treatment received from man he is justly either shy or wary, confiding or familiar.

The nest of the Blue Jay is built in the branches of a lonely forest tree, in the trees of orchards, in those bordering quiet roadways or lanes, and, where the bird is not molested it is commonly placed not far from dwelling-houses, in trees or bushes. The nest is large, and the materials used are various—twigs, leaves, roots and vegetable fibres rudely but strongly interwoven; often paper, rags, wool and yarn enter into its composition. The eggs are four or five in number, olive-brown or olive-drab, thickly spotted with dark olive-brown. In some specimens the ground-color is light or dark green, similar to that in the

eggs of the California Jay, in which the markings stand out in strong contrast. Ten eggs exhibit the following sizes: 1.02 x .84, 1.06 x .84, 1.10 x .87, 1.11 x .83, 1.12 x .82, 1.15 x .83, 1.14 x .84, 1.12 x .83, 1.18 x .86, 1.18 x .86; one runt egg measures .76 x .60.

477a. *Cyanocitta cristata florincola* COUES.

Florida Blue Jay.

Hab. Florida.

This is a smaller bird than the last, with less white on the tips of the secondaries and tail-feathers. A set of four eggs in my cabinet from Florida do not differ essentially from those of *C. cristata*, having the brown type of coloration for the ground-color.

478. *Cyanocitta stelleri* (GMEL.) [290.]

Steller's Jay.

Hab. Pacific coast, north to Sitka, south to Northern California.

Steller's Jay is an abundant species along the Pacific coast from Northern California northward. In Oregon it is a very common resident. He is the same bold, noisy fellow as is his eastern cousin, the Blue Jay.

The nest of this bird is built in firs and other trees, and in bushes, ranging from eight to twenty-five feet from the ground; it is very bulky, and made of large sticks and twigs, generally with a supply of mud, and a lining of fine, dry grasses and hair. The eggs, three to five in number, are usually pale green or bluish-green, speckled with olive-brown, with an average size of 1.28 x .85. Mr. Norris has a set of four eggs collected near Salem, Oregon, May 4, 1888. This set was taken from a nest in a thorn bush, twelve feet from the ground. The eggs are light bluish-green, spotted and sprinkled with clove-brown; the markings are heavier near the larger ends, where they form indistinct circles. They offer the following dimensions: 1.25 x .93, 1.22 x .94, 1.19 x .91, 1.23 x .92.

478a. *Cyanocitta stelleri frontalis* (RIDGW.) [290a.]

Blue-fronted Jay.

Hab. Sierra Nevada range (both slopes) from Fort Crook to Fort Tejon.

A common bird in the mountains of California, inhabiting the whole length of the Sierra Nevada and also, it is said, the coast ranges. Col. N. S. Goss found quite a number of nests of the Blue-fronted Jay in the vicinity of Julian, California, in the spring of 1884, and "in all cases but one, in holes and trough-like cavities in trees and stubs, ranging from four to fifty feet from the ground, generally ten to twenty feet. The nest found outside was built upon a large horizontal limb of an oak close beside a gnarl, the sprout-like limbs of which thickly covered the nest overhead, and almost hid it from view below." They

were quite bulky, loosely made of sticks, stems of weeds, and lined with fibrous rootlets and grasses; and as they were all built at or near the opening, the tell-tale sticks projected, and made the finding of the nest not difficult.

Col. Goss gives the color of the eggs as light blue, speckled and spotted with dark brown, rather thickest at large end, and the measurements of two sets as follows: one taken May 19, 1.20 x .87, 1.20 x .88, 1.21 x .88; May 21, 1.21 x .88, 1.15 x .86, 1.19 x .86, 1.16 x .85. Mr. W. O. Emerson informs me that the nests in the vicinity of Haywards, California, are placed in oaks, redwood and other tall trees.* Mr. Norris has a set of three eggs, collected by Mr. A. M. Ingersoll, May 19, 1888, at Julian, California. The nest was inside of an immense oak stub, about fifteen feet from the ground, and the eggs were far advanced in incubation. They are of a light grayish-blue, speckled and spotted with burnt umber. Their sizes are: 1.26 x .86, 1.30 x .85, 1.21 x .85.

478*b*. *Cyanocitta stelleri macrolepha* (BAIRD.) [290*b*, 290*c*.]

Long-crested Jay.

Hab. Rocky Mountain region, especially southerly, from Utah, Arizona and New Mexico north to Southern Wyoming.

A common bird in the southern Rocky Mountain region. In some portions of the pine districts of Arizona the birds are permanent residents. They are mated by the latter part of April, and nests with eggs may be found in May. It is a very numerous species in Northern New Mexico and Colorado, where it is a constant resident. Large, noisy troops of this species are to be found roving about during the winter months. Their notes at times are said to resemble those of the Blue Jay. Mr. Dille states that in Colorado the nest of the Long-crested Jay is built in trees or bushes, but generally artfully concealed in a bunch of rubbish at the top of a pine or spruce. It is rather large and coarse, made of small sticks and weed-stalks, with little or no lining.

Nests with eggs have been found all through June. The eggs, Mr. Dille says, are invariably five in number, of a light green, with fine markings of dark olive-brown and lighter cloudings of purplish or

* A strange departure from the usual habits of Jays is noted of the Blue-fronted Jay by Mr. Bryant. In Placer county, California, the birds had persisted in building within the snow-sheds in spite of the noise and smoke of passing trains. "The destruction of their nests by the men employed on the water train which makes two trips a week through the sheds during the summer, sprinkling the woodwork and tearing down the nests of Jays and Robins with a hook attached to a pole, seemed not to discourage them. So accustomed do the Jays become to the passing of trains, that they will often remain on their nests undisturbed. In one season more than two hundred nests of Jays and Robins were destroyed, so the train men say, between Cisco and Summit, a distance of thirteen miles. Some of the nests were but partially built, others contained eggs, these latter ones having probably been overlooked on previous trips. The nesting of the Jays within the snow-sheds is, so Mr. Ingersoll supposes, to avoid the persecution of squirrels. None, he thinks, however, succeed in rearing a brood, for of more than thirty nests which he found, nearly all were uncompleted."—"Unusual Nesting Sites," No. II.

violet-brown, and in shape are more elongated than those of the Blue Jay. Their size ranges from 1.20 to 1.32 in length by .80 to .89 in breadth.

479. *Aphelocoma floridana* (BARTR.) [291.]

Hab. Florida.

Florida Jay.

The geographical distribution of this beautiful species is confined to the limited area of Florida. In some districts it is abundant, while in others it is extremely rare. Mr. Stuart regards it as not very abundant in the region about Tampa, where it nests in March and April, usually among a thick growth of bushes.

The nest is a flat, compact structure, composed of leaves, small dry sticks, lined with moss, roots, fibrous plant-stems and often with wool and feathers. The eggs of the genus *Aphelocoma* usually have more of a greenish ground and heavier markings than those of *Cyanocitta*. Mr. Stuart says that four or five eggs are generally laid by the Florida Jay, of a light blue or greenish ground, sparingly sprinkled with rufous and black, the spots being larger and more numerous towards the larger end; average size, 1.00 x .80.

480. *Aphelocoma woodhousei* (BAIRD.) [292.]

Woodhouse's Jay.

Hab. Middle Province of the United States, from New Mexico and Arizona north to Colorado, Utah, Nevada, Wyoming, Montana, Idaho and Eastern Oregon.

Woodhouse's Jay is more or less common throughout the States and Territories mentioned in the above habitat. It is generally not so abundant as the Long-crested Jay, and frequents the scrub-oak and other thickets on the open hillsides. The nest is built in bushes and thickets, or in low trees of thick foliage, and from three to six eggs are deposited.

Mr. Norris has a set of five eggs of this species, taken in Weber county, Utah, April 10, 1888. The nest from which the eggs were taken was placed in a sage bush two feet from the ground, and was composed of twigs, lined with fine roots and hair. The eggs were fresh, and are of a pale bluish-green, spotted with burnt umber and lavender-gray. They measure 1.03 x .80, 1.01 x .80, 1.07 x .80, 1.02 x .82, 1.05 x .80. The average size is 1.06 x .80.

481. *Aphelocoma californica* (VIG.) [293.]

California Jay.

Hab. Pacific coast of the United States, from Southern California to Oregon, east to Western Nevada.

A common species from the southern portion of California northward to Oregon, inhabiting the trees and thickets bordering streams in the valleys. It also frequents the chaparral and sagebrush patches,

and prefers the realms of solitude to the haunts of man. It is nearly always found in company with the California Thrasher, *Harporhynchus redivivus*, whose tastes in regard to the general surroundings are similar. Mr. Shields says that in Los Angeles county this bird begins building about the first of May, but fresh eggs can be found as late as the last of June; they are usually four, sometimes five in number.

The nest is large and bulky, usually placed in scrub-oak or in the thick portions of chapparal; it is composed of twigs, roots and dry grasses. The color of the eggs is a dark sea-green or blush-green, thickly dotted, spotted and sometimes blotched with clove-brown, chestnut, light buff, dark brown and bluish-gray. A set of five eggs measure: 1.06 x .82, 1.08 x .72, 1.09 x .84, 1.10 x .81, 1.09 x .80. Ten specimens average 1.08 x .80.

482. *Aphelocoma sieberii arizonæ* RIDGW. [295.]

Arizona Jay.

Hab. Southern New Mexico, Arizona and Northwestern Mexico.

According to Mr. Scott the Arizona Jay is an abundant species and resident wherever the live-oaks are found on the San Pedro slope of Las Sierras de Santa Catalina, in Southern Arizona, between the altitudes of 3000 and 7000 feet. It is an eminently gregarious and sociable bird; even during the breeding season a number of pairs may be found nesting in the same locality.

March 16 a nest was found by Mr. Scott apparently completed but containing no eggs; it was built in a sapling about ten feet from the ground, and was composed of dry rootlets laid very loosely in concentric rings; there was no lining, and the walls of the structure average about three-quarters of an inch in thickness; interior diameter, five inches; greatest interior depth, an inch and three-quarters—a flat, saucer-like fabric. It was not built in a crotch, but where several small twigs leave the large branch. All other nests found resembled this one. On the 25th the nest was visited again, and the female was sitting, but no eggs had been laid, and further out on the same branch another nest was built. Two other nests were found the same day about one hundred feet away; in one a female was sitting on two eggs, which was thought at the time to be the full set. The eggs were fresh, and so much like those of the Robin, in color and general appearance, as to be almost indistinguishable from them. These two eggs measured 1.18 x .88, 1.13 x .86. April 1 the two nests first mentioned were visited, and although the old bird was sitting on the nest earliest completed, it contained no eggs, but on April 7 Mr. Scott was rewarded by finding five fresh eggs in this nest, identical in appearance with those

above described, and measure 1.25 x .83, 1.13 x .85, 1.23 x .83, 1.14 x .80, 1.16 x .84. The other nest at this time did not nor several weeks after contain eggs.*

483. *Xanthoura luxuosa* (LESS.) [296.]

Green Jay.

Hab. Eastern Mexico, north to the Rio Grande valley in Texas.

Dr. Merrill states that the Rio Grande Jay is a common resident about Fort Brown and higher up the river, but does not seem to pass much into the interior of Texas. Mr. George B. Sennett says: "Of all the birds on the Lower Rio Grande, this is the most mischievous, robbing and despoiling other birds' nests without mercy."

Its nest, Mr. Sennett observes, is not easily found, for it is always concealed in thickets, or in the heavy undergrowth of dense woods. A large series of eggs was taken. Of those obtained early in April, few were freshly laid, while all those obtained in May were fresh, indicating that a second brood is reared, though no young of the first brood were seen, while numbers of adults were observed daily from April 9 until the last of May. On April 19 the first eggs were taken, two sets being found; one of four with large embryos, the other of five, nearly fresh. The latest set, consisting of four fresh eggs, was found May 17. The usual number of eggs to a clutch is four, occasionally five. The average size of the specimens collected by Mr. Sennett in a season is 1.06 x .81, those taken in another season's collecting, 1.08 x .81. Dr. Merrill describes the eggs as having a grayish-white ground-color, thickly spotted with brown and pale lilac, especially at the larger end. One set, however, was found with the markings more numerous at the smaller end, and averaging 1.01 x .80.

484. *Perisoreus canadensis* (LINN.) [297.]

Canada Jay.

Hab. Northern New England and New York, Northern Michigan and Canada, northward to Arctic America.

The Moose-Bird, Whisky Jack, or Whisky Jolin, as it is variously called, breeds in Maine and northward. It is a resident species, and seldom seen south of its breeding range. In Manitoba it is an abund-

* Perhaps no explanation can be offered for the preparation of the nest so long before it is used. The first nest was evidently complete on March 16, and it contained no eggs until later than April 1; the first eggs must have been deposited between that date and the 7th. Mr. Scott states that the same facts have been noted in the breeding of the Gray Vireo (*Vireo vicinior*). As to the circumstance of the bird sitting so constantly before laying he suggests that it is not improbable that it was in order to keep possession of their nest, for as a number of individuals of the species composed the colony a question of ownership might easily arise. He observes that the Arizona Jay is as great a robber of other birds' nests as its cousin of the East, and possibly the habit of sitting so constantly even before any eggs are laid, is to be accounted for by a strongly inherited tendency to prevent intrusion. The building of extra nests finds a parallel in the case of the Long-billed Marsh Wrens, and is possibly to be accounted for by the nervous activity of the birds; or, the extra nest may afford night resting places for the male during the breeding season.—Auk, III, pp. 81-83.

ant bird. Its general habits and nesting are in nowise peculiar, being similar to those of others of the family.

The nest is usually a large, bulky structure, placed on the bough of a spruce or other evergreen. It is made of twigs, pine-needles, bark-strips and grasses, lined with finer vegetable material and feathers. The nesting time in Northern Maine and New Brunswick is March and April. The eggs are light gray, with a yellowish tinge, finely marked, more abundantly at the larger end with dots and blotches of slate color and brown, and faint cloudings of an obscure lilac, exhibiting the usual variations in color and size found in the eggs of other Jays; four or five in number; average size, 1.17 x .80.

484a. *Perisoreus canadensis capitalis* BAIRD [297a.]

Rocky Mountain Jay.

Hab. Rocky Mountains, south to Arizona and New Mexico.

This bird is called the White-headed Jay or Rocky Mountain Whisky Jack—a race of the Canada Jay, but very much different. It is peculiar to the Rocky Mountain region, and is especially common in Northern New Mexico and Colorado. In the breeding season it is found high up in the mountains in the spruce timber, from 8000 feet to timber line. He is said to be “as big a thief as ever wore feathers.” White-headed, he at times appears grave and sedate, but is always possessed of a whimsical brain. Small articles around camp that strike his fancy are always found missing after one of his visits.

Nest-building is begun usually in April. The site generally chosen is the horizontal branch of a pine, varying in height from fifty to sixty feet from the ground. The materials are twigs, pine-needles, bark, grasses and hempen fibres, all compactly interwoven into a rude, bulky but strong structure; it is warmly lined with the feathers and down of birds. The external height is about four inches, and the diameter seven; the cavity about two inches deep and four across. The eggs are three to five in number, grayish-white in ground-color, finely speckled with various shades of brown; in some specimens the markings are more numerous about the greater end. Size, 1.16 x .86.

485. *Perisoreus obscurus* (RIDGW.) [298.]

Oregon Jay.

Hab. Northwest coast, from Northern California to British Columbia.

Mr. A. W. Anthony mentions this species as a common winter resident of Washington county, Oregon. In March they depart for the mountains to breed, although a few sometimes remain to breed in the more secluded parts of the country. He characterizes it as a bird utterly devoid of fear. While dressing deer in the thick timber he has been

almost covered with these Jays; they would alight on his back, head and shoulders, and there tug and pull at each loose shred of his coat as if assisting him in all ways possible.

On March 31, 1884, he took a nest with five eggs, the first, probably, ever taken. The nest was placed about eighty-five feet from the ground, in a fir, and well concealed. It was built close against the trunk, and was composed of sticks, twigs and moss, rather loosely put together, lined with cow-hair, wool, and one or two grouse feathers. The eggs were very light blue, with a grayish cast, thickly covered with spots of brown and lilac, chiefly on the larger ends. In one specimen were a few black, hair-like lines over the larger end. Size, 1.04 x .79.

486. *Corvus corax sinuatus* (WAGL.) [280.]

Mexican Raven.*

Hab. Western United States and south to Guatemala. (Ridgw.)

An inhabitant of the regions west of the Mississippi, where it is common. A set of this bird's eggs, four in number (oological collection of J. Parker Norris), was taken April 12, 1888, in San Jacinto valley, California. The nest was placed in the crevice of a large rock, and was an old one, it having been in use for many years. It was composed of sticks, hair, etc. The eggs are pale bluish-green, spotted and dashed with olive. They measure 1.90 x 1.24, 1.94 x 1.25, 1.92 x 1.22, 1.84 x 1.21.

* * *Corvus corax principalis* RIDGW.

Northern Raven. †

Hab. Northern North America, from Greenland to Alaska, south to British Columbia, Canada, New Brunswick, etc. (Ridgw.)

In former years the Raven appears to have been not uncommon in the northern New England States, but is now considered very rare, and late records of its occurrence there are very few. It breeds occasionally on the cliffs of the island of Grand Manan, and more frequently farther east, as in New Brunswick, Nova Scotia, Newfoundland, etc. It is rather a common resident along the whole coast of Labrador. Forest-clad cliffs of great rivers, the crags of lonely islands in the ocean, wooded lakes and streams in solitary regions are the haunts of this sable-plumed, ominous bird.

The Rev. J. H. Langille states that in Nova Scotia nesting begins early in March. The site chosen for the nest is usually the most inaccessible tree or rocky cliff; sometimes, however, it is built in the flat-topped, low spruces, as is the case on Mud and Seal Islands, on the

* No. 486 is called American Raven in the A. O. U. Check List.

† A new sub-species, with larger bill, etc., than *Corvus corax sinuatus* — see Ridgway's Manual N. A. Birds, p. 361.

southwestern coast of Nova Scotia. The nest is made of large sticks, closely and artistically arranged, with a lining of coarse grasses, seaweed and wool. The same nest is repaired from year to year, and in course of time becomes quite bulky. The eggs are four to six in number. A set of five eggs is in my cabinet, which was collected by Mr. H. Pope, near South West Point, on the island of Anticosta, off the mouth of the St. Lawrence, April 21, 1887. The nest was built in cliffs facing the sea, and the eggs were secured only after a dangerous scramble over banks of ice and snow. Like the eggs of the crow, these are subject to great variation in markings. The ground-color is pale bluish-green or light olive-green. They are spotted, blotched, streaked or dashed with purple and greenish-brown; some specimens are so densely marked as to almost wholly obscure the ground-color, giving the specimens a dull greenish-gray appearance. Four of the specimens in the set of five are of this type, while the other is of a brilliant bluish-green, sparsely marked with blackish-brown and obscure lilac. Their sizes are: 1.85 x 1.24, 1.90 x 1.30, 2.04 x 1.32, 2.07 x 1.34. A set of five eggs is in Mr. Norris' collection, taken April 8, 1875, on the island of Grand Manan, from a nest in a fir tree, twenty-five feet from the ground. It was made of sticks, moss and bark, lined with wool. The eggs have a chromium-green ground-color, spotted and blotched with olive. They measure: 1.86 x 1.33, 1.81 x 1.33, 1.80 x 1.31, 1.83 x 1.33, 1.80 x 1.35.

487. *Corvus cryptoleucus* COUCH. [281.]

White-necked Raven.

Hab. Southwestern United States and table-lands of Mexico, north to Indian Territory, Kansas, Colorado and Southern California, south to Guatemala.

The White-necked Raven is an abundant species throughout most of its range. The bird's general appearance and its nesting habits are similar to those of the common crow, with which it is often confounded.

From four to seven eggs are laid by this species, and they have, on the whole, markings of a lighter color than the eggs of other species of *Corvus*; and in addition they have lines running from one end of the egg to the other, somewhat after the manner of those on the genus *Myiarchus*, of the Flycatchers, of which the most familiar example is the Crested Flycatcher, *M. crinitus*. This peculiarity is typical of the species, and is found constant in a large series in the collection of the National Museum, at Washington. A set of five eggs in Mr. Norris' cabinet was taken May 16, 1888, in Cochise county, Arizona, from a nest in an oak tree. The eggs are of a pale bluish-green, spotted with

clove-brown, and profusely streaked with longitudinal lines of olive-gray. They measure: 1.74 x 1.19, 1.77 x 1.21, 1.67 x 1.18, 1.76 x 1.18, 1.77 x 1.21.

488. *Corvus americanus* AUD. [282.]

American Crow.

Hab. Eastern North America except Southern Florida and Arctic regions.

An abundant bird in all the Eastern States, where it is well known. The nest is built in woods, preferably in high, thick forest, and the tree selected is one of thick foliage. In pine regions the cedar is the favorite tree. The altitude is usually so great that the nest is practically inaccessible. In quiet, solitary places, however, I have found it placed not more than ten or fifteen feet from the ground. It is built of twigs and sticks, sometimes of considerable size, firmly interlaced, while weeds and grass, often with clods of earth attached, form part of the structure. The lining is of leaves, grapevine bark and fine grasses.

The nesting season is in April and May, or June, and sometimes even in March. From four to six, and occasionally seven eggs are laid. These vary from a pale bluish to an olive-green, and from almost unmarked specimens to those which appear of a uniform olive-green, so dense and small are the markings. The typical egg, however, is of a light sea-green, thickly spotted and blotched with dark brown, almost black, with purplish reflections; these are chiefly about the larger end. Size 1.70 x 1.20.

488a. *Corvus americanus floridanus* BAIRD. [282a.]

Florida Crow.

Hab. Southern Florida.

A set of four eggs from Manatee county, Florida, taken April 15, is in my cabinet, and measure 1.62 x 1.18, 1.62 x 1.19, 1.66 x 1.18, 1.62 x 1.16. Their color and markings are similar to those of typical eggs of *C. americanus*.

* * *Corvus americanus hesperis* RIDGW.

California Crow.

Hab. Western United States, north to Washington Territory (Puget Sound), Idaho, Montana, etc., south to Northern Mexico, east to Rocky Mountains. (Ridgw.)

Prof. Ridgway states that this new sub-species is a very strongly characterized race, which differs markedly in habits and notes from the eastern bird.* Mr. Samuel C. Evans, writing from San Jose, California, says it is very common in that region, nesting in the large trees of the bottom lands. Eggs in my collection, from California, do not differ from those of *C. americanus*.

* For description see Manual of N. A. Birds, p. 362.

489. *Corvus caurinus* BAIRD [282b.]**Northwest Crow.**

Hab. Northwest coast from Oregon to Kadiak, Alaska.

The Northwestern Fish Crow is a smaller bird than the common Crow of the Eastern States. In its habits it is said to be the exact counterpart of the Fish Crow of the Atlantic coast. Its principal food is marine crabs or fish which it gathers along the banks of rivers and the shores of lakes. Like the Raven and Herring Gull, it carries clams high into the air and drops them in order to break the shell.

Its nest is said to be substantially like that of *Corvus ossifragus*, being built in evergreens and oaks growing along ravines; and the eggs are indistinguishable. Prof. Ridgway gives their average size as 1.56 x 1.08.

490. *Corvus ossifragus* WILS. [283.]**Fish Crow.**

Hab. Atlantic and Gulf Coasts of the United States from Long Island to Louisiana.

A common species along the Atlantic coast of the United States from New Jersey to Florida, and on the Gulf coast to Louisiana. It is called the Southeastern Fish Crow.

Mr. Charles S. Schick states that along the coast of Cape May county, New Jersey, he has found sets of eggs of this species as early as April 13, and on the 15th of the same month observed nests with young; the dates of laying varying with the temperature of the season. The usual number of eggs deposited is five or six, a set of seven being uncommon. In a section containing two hundred evergreen trees, there were at least sixty nests, ranging in height from twenty to sixty feet above the ground. The composition is nearly the same as in those of the common Crow, except that the lining consists of a few dry leaves or fine bark-fibres. The bird, Mr. Schick says, feeds largely on small crabs, and devours large numbers of the eggs of the Clapper Rail. The eggs of the Fish Crow are so nearly like those of the Crow in color and markings that one description will answer for both; those of the present species are much smaller. Five specimens measure 1.50 x 1.08, 1.50 x 1.05, 1.46 x 1.02, 1.51 x 1.06, 1.47 x 1.02. The average size of twelve eggs is 1.50 x 1.09.

491. *Picicorvus columbianus* (WILS.) [284.]**Clarke's Nutcracker.**

Hab. Western North America, north to Alaska, south to Arizona, east to and including the Rocky Mountains.

Clarke's Crow, or Nutcracker, is found in considerable numbers in all suitable localities in the coniferous forests of the higher mountain ranges within the limits of the above habitat. It is the American representative of the European Nutcracker, *Nucifraga caryocatactes*. A

remarkable bird, embodying the peculiar habits of certain woodpeckers and those of some of the jays—wild, restless and noisy, inquisitive and cunning.

Capt. Bendire found it breeding quite commonly in the mountainous regions about Fort Harney, Oregon. April 22, 1876, two nests were found, one containing a young bird, just hatched, and two eggs with the shells chipped; the other contained three young. Between April 24 and 30 about a dozen nests were observed, all containing three young, each in different stages of development. In the spring of 1877 not a single bird was observed where they were found breeding the year before, and their absence was accounted for by the scarcity of the seeds of the pine which constitute their principal food. On April 4, 1878, a nest containing three eggs was found, and at this early date incubation was far advanced. A set of two eggs, with good-sized embryos, was taken April 8. All the nests were placed in pine trees, generally well out on the limbs, and from sixteen to forty feet above the ground. Trees with plenty of branches seemed to be preferred, and the edges of pine timber to the interior of the forests. A nest is described as rather bulky, the base consisting of a platform of small sticks and twigs, mostly of the white sage; on this the nest proper is placed, which is composed of dry grasses, vegetable fibres, hypnum moss and the fine inner bark of the western juniper, all compactly woven together, making a warm, comfortable structure. The sizes of four eggs, as given by Capt. Bendire, are as follows: 1.22 x .95, 1.20 x .90, 1.26 x .95, 1.30 x .92, respectively. Their color is a light grayish-green, irregularly spotted and blotched with a deeper shade of gray, chiefly at the larger end.

In the mountainous region southeast of Fort Garland, Colorado, Capt. B. F. Goss found nests of this species under the same conditions as observed by Capt. Bendire. May 21 a nest was discovered containing young. The nests, at first appearance, according to both observers, looked more like squirrels' nests than anything else, and the birds were close sitters, even allowing themselves to be captured rather than leave their nests. During the breeding season they are perfectly silent.

492. *Cyanocephalus cyanocephalus* (WIED.) [285.]

Pinon Jay.

Hab. Region between the Rocky Mountain and Sierra Nevada Ranges, from Mexico to British America.

The region between and including the Rocky Mountains and the eastern slope of the Sierra Nevadas, wherever grows the yellow pine, the pinon and the juniper, the Blue Crow, Maximilian's or Pinon Jay makes its home. A bird combining the form of a crow and the color

and habits of a jay; of a restless, roving disposition, but resident wherever found.

It breeds in colonies, nesting in April, May and June, according to locality. Nests containing eggs have been found in Nevada by Mr. H. G. Parker in the first part of May, and fully fledged young were observed in the same region by Prof. Ridgway as early as April 21. Mr. H. B. Bailey took a set of four eggs in New Mexico that were well incubated June 5. Capt. B. F. Goss found this bird breeding in the region southeast of Fort Garland—the western base of the Sangre de Christo Mountains, at an elevation of about 9000 feet. The nests were all in small pinon pines, from five to ten feet up, out some distance from the body of the tree, and not particularly well-concealed. They are large, coarse and deeply-hollowed structures, much alike, being made mostly of grayish shreds of some fibrous plant or bark, which breaks up into a mass of hair-like fibres, these forming the lining, while some weeds and grass are worked into the general fabric. The birds were close sitters, several not leaving till the nest was shaken, and they could have been caught with the hand. One nest contained five eggs, six contained four each, and two three each; both sets of three were partly incubated. Two nests were taken May 5, five on the 10th and two on the 11th, 1879. The eggs are quite pointed at the small end; the ground-color is bluish-white, splashed all over with small spots of dark brown, thickest at the large end. Thirteen eggs measure respectively: 1.19 x .88, 1.21 x .93, 1.22 x .92, 1.25 x .91, 1.17 x .87, 1.18 x .84, 1.17 x .85, 1.20 x .82, 1.17 x .80; average 1.19 x .87.*

[493.] *Sturnus vulgaris* LINN. [279.]

Starling.

Hab. Europe and Northern Asia; accidental in Greenland.

A specimen of the Starling, taken in Greenland in 1851, entitles it to a place in the avifauna of North America. It is a well-known bird in Europe, and of a very general distribution. Its handsome plumage, sprightly, social habits, retentive memory, and pleasing, imitative voice have made it a great favorite as a caged bird. It is said to live in flocks the greater part of the year, selecting for its nest suitable places in holes of trees, eaves of houses, church-steeple, old towers and ruins, in cliffs or in high rocks overhanging the sea, and in wooden boxes put up for its accommodation. The material used for the nest is twigs, straws and fine grasses.

The eggs are four to six in number, of a pale greenish-blue or bluish-white. A set of five eggs collected by W. Wells Bladden, May 4, in

* Bull. Nutt. Ornith. Club, VIII, 43-44.

Staffordshire, England, is in my cabinet, and exhibits the following sizes: 1.13 x .84, 1.10 x .82, 1.11 x .83, 1.18 x .79, 1.20 x .79. Mr. Norris has a large series, showing great variation in size and shape, and a typical set of six, taken in Germany, April 18, 1885, measure: 1.11 x .84, 1.09 x .84, 1.09 x .80, 1.15 x .81, 1.10 x .79, 1.09 x .83.

494. *Dolichonyx oryzivorus* (LINN.) [257.]

Bobolink.

Hab. Eastern North America to the Plains, north to Southern Canada, south in winter to the West Indies and South America. Breeds from the Middle States northward.

A familiar bird in Eastern United States, breeding from the 38th to the 54th parallel. In some parts of the country, in suitable places, it is very abundant. Of all our natural songsters the Bobolink is the most noted and popular. Descriptions of his song so frequently appear in literature that even those who have not heard it must form a good idea of its enchanting music:

“That rollicking, jubilant whistle,
That rolls like a brooklet along—
That sweet flageolet of the meadows,
The bubbling, bobolink song.”

Often have I heard him sing when on the wing, or when at rest, with the broad, green meadow and pasture lands spread before him, perched on the top of a wind-beaten reed, with his wings sunward spread, his head erect, his white and black back glistening in the sunlight, pouring forth his “bubble-ing” bobolink notes to the azure windows of heaven. In the South he is known as the Rice-bird, in the Middle States as Reed-bird and Meadow-wink, and in the North as Skunk Blackbird. The nesting time is in the latter part of May or in June.

The nest of the Bobolink is very hard to find; it is built in a natural cavity of the ground, amongst the tall grass of meadows; sometimes it is sunk in the depression made by a cow's or a horse's hoof. Fields of clover, with here and there a tall weed-stalk or sapling, on which the birds alight, are favorite nesting resorts. In leaving the nest the female will run off through the grass quite a distance before rising, and she will repeat the same performance upon her return, so that the nest can only be found by diligent and careful search in the vicinity from which she arises. The eggs, too, resemble the color of the ground so closely that they are easily overlooked. The nest is a very slight affair, made of dry grasses and weed-stems, arranged in a circular form. The eggs are usually five, sometimes six or seven in number, and of a dull white or grayish-white, variously tinged with light drab, olive, reddish and grayish-brown, intermingled with laven-

der; the general effect being that of a dark, heavily-colored egg. Ten specimens measure: .79 x .55, .80 x .55, .86 x .60, .84 x .63, .87 x .58, .87 x .61, .88 x .66, .86 x .61, .83 x .60, .85 x .60. An average specimen measures .85 x .64.

495. *Molothrus ater* (BODD.) [258.]

Cowbird.

Hab. Whole of the United States, north into Southern British Columbia, south in winter to Mexico.

Known as the Cow Bunting or Cow Blackbird from its habit of alighting on the backs of cows or cattle, where it sits contentedly while they are grazing. It is a notorious parasite, and does not build a nest, but like the European Cuckoo, lays its eggs in the nests of other birds, usually in those of species smaller than itself. Generally a single egg is deposited, and as many as five have been found in a nest. The exact number the female lays is not known. Eggs of this bird are subject to great variation in their size and markings, and when found in the nests of such birds as the Cardinal Redbird, Towhee Bunting, Meadow Lark and Brown Thrasher,* it is sometimes difficult to readily distinguish "which is which." Yet it should not be understood that the Cowbird's eggs look exactly like those of the species just mentioned, for they really have, on the whole, only a faint resemblance to them, and when a large series of either species is brought together and compared with those of the Cowbird the difference is at once apparent. Dr. Jones suggests that when the egg of the Cowbird resembles so closely the eggs in the nest where it has been laid, as to make identification uncertain, it is a good plan to blow all the eggs and notice if the suspected egg has a yelk of different tint from the balance of the set. If it has, it is strong evidence that it was laid by an intruder, for almost invariably eggs of the same set have the same tinted yelks.

The ground-color of the Cowbird's egg is white or gray, sometimes obscured by the abundance of markings. Spots, specks and blotches are generally pretty evenly distributed over the entire surface. The markings vary from a chocolate-brown to those of a reddish and yellowish-brown. The whole surface of an egg is often quite densely marked with specks the size of a pin point, while the shell of other specimens

* Besides those above named the following are some of the nests in which the Cowbird's eggs have been found: Blue-gray Gnatcatcher, Black and White Warbler, Blue-yellow-backed Warbler (Parula), Worm-eating Warbler, Prothonotary Warbler, Maryland Yellow-throat, Yellow Warbler, House Wren, Warbling, Yellow-throated and Red-eyed Vireos, Indigo Bunting, Chipping Sparrow, American Goldfinch, Song Sparrow, Swamp Sparrow, Slate-colored Junco, Oven Bird, Pewee, Wood Pewee, Acadian and Trail's Flycatchers, Black-throated Bunting, European House Sparrow (*Passer domesticus*), Yellow-breasted Chat, Bluebird, Orchard, Baltimore, Bullock's and Hooded Orioles, Scarlet Tanager, Kingbird, Towhee, Prairie Horned Lark (*Otocoris alpestris praticola*), Wilson's Thrush, Wood Thrush, Red-headed Woodpecker, Robin and Mourning Dove.



CHIMNEY SWIFTS AND NESTS.

(*Chetura pelagica.*)

is sparsely spotted. Ten specimens selected at random from a very large series exhibit the following sizes: .80 x .62, .82 x .66, .84 x .62, .88 x .66, .89 x .63, .87 x .65, .82 x .60, .83 x .64, .89 x .64, .80 x .62. A common size is .88 x .64.

495a. *Molothrus ater obscurus* (GMEL.) [258a.]

Dwarf Cowbird.

Hab. Mexico, and southern border of the United States from Texas to Arizona and Lower California.

This is a smaller form, inhabiting the southern border of the United States from Texas to Arizona and southward. Its habits are identical with the Cowbird of the East, and the eggs are colored the same, but like the bird, average smaller. Five specimens measure: .77 x .60, .80 x .59, .75 x .59, .70 x .57, .72 x .58. The average size of ten specimens from Arizona is .74 x .59.

496. *Gallothrus robustus* (CAB.) [259.]

Red-eyed Cowbird.*

Hab. Eastern and Southern Mexico, Yucatan, and south to Panama; north to the lower Rio Grande Valley in Texas.

A bronze-colored Blackbird with blood-red iris. Common on the Lower Rio Grande in Texas. Dr. Merrill took specimens at Hidalgo, but they were not so abundant at this point as lower down the river, where they are common throughout the year, a small proportion going south in winter. Those that remain gather in flocks with the Long-tailed Grackles, common Cowbirds, Brewer's, Red-winged and Yellow-headed Blackbirds.

He found its eggs in the nests of Bullock's, Hooded and the Orchard Orioles, once in the nest of the Yellow-breasted Chat, and Red-winged Blackbird, Scissor-tailed Flycatcher and Texan Cardinal (*Pyrrhuloxia sinuata*). The eggs of the Red-eyed Cowbird are plain bluish-green, similar to that in the eggs of the Blue Grosbeak. Dr. Merrill gives the average size of twenty eggs as .90 x .70, the extremes being .95 x .75 and .82 x .65.

497. *Xanthocephalus xanthocephalus* (BONP.) [260.]

Yellow-headed Blackbird.

Hab. Western North America to the Pacific, east regularly to Wisconsin, Illinois, Kansas and Texas. Accidental in the Atlantic States.

The handsome Yellow-headed Blackbird is found generally distributed on the prairies in all favorable localities from Texas on the south to Illinois and Wisconsin, thence to the Pacific. A common bird in the West, nesting in May and June. It collects in colonies to breed in marshy places anywhere in its general range, often in company with the Red-winged Blackbird. The nests are usually placed in the midst

* No. 496 in the A. O. U. Check List is *Molothrus aeneus* (Wagl.), Bronzed Cowbird. These names are now applied to the western form of this bird from Western Mexico, etc.

of large marshes, attached to the tall flags and grasses. They are generally large, light, but thick-brimmed, made of interwoven grasses and sedges impacted together.

The eggs are stated to range from two to six in number, but the usual number is four. In the hundreds of sets that have come into my hands only three contained five eggs each. Their ground-color is dull grayish-white, in some grayish-green, profusely covered with small blotches and specks of drab, purplish-brown and umber. Their average size is 1.12 x .75.

498. *Agelaius phœniceus* (LINN.) [261.]

Red-winged Blackbird.

Hab. Temperate North America in general, north to Great Slave Lake, south to Costa Rica.

The Red-winged Starling or Swamp Blackbird is found from the Atlantic to the Pacific, and as far north as the 57th parallel, breeding more or less abundantly wherever found, from Florida and Texas to the Saskatchewan country. In its native marshes during the breeding season, which is in May and June, a loud chorus of discord and harmony may be heard from the Red-wings, and above all the strange, reverberating *kong-quer-ree, kong-quer-ree*. The nest is usually built in reeds or bushes near the ground, often in a tussock of grass, sometimes on the ground, and once in a while at a considerable elevation in a tree. The materials are usually strips of rushes or sedges, lined with finer grasses and sometimes with a few horse hairs. It is rather bulky, and not at all artistic. This bird nests in communities, and one is quite as likely to find several nests near each other as a single one, in a piece of swamp. Nests and eggs found in Texas are smaller than the average of those found in the more northern States.

The eggs are light blue, marbled, lined, blotched and clouded with markings of light and dark purple and black, almost entirely about the larger end, but vary considerably in this respect; they are usually four, rarely five in number, and average 1.00 x .75.

499. *Agelaius gubernator* (WAGL.) [261a.]

Bicolored Blackbird.

Hab. Valleys of California and Western Oregon, and south into Western Mexico.

The Red-and-black-shouldered Blackbird occurs along the Pacific coast from British Columbia south throughout California. The female is not distinguishable from the female Red-wing, and the nesting habits are exactly the same, placing the nests in watercress or rushes, along running streams, ditches and swamps.

The eggs are light blue or bluish-white, marked around the larger end with waving lines of dark brown, lighter in shade than the mark-

ings on the eggs of the common Red-wing; four or five in number; size from .90 to 1.05 in length by .64 to .74 in breadth.

500. *Agelaius tricolor* (NUTT.) [262.]

Tricolored Blackbird.

Hab. Valleys of the Pacific coast, from Southern California to Western Oregon.

This species is known as the Red-and-white-shouldered Blackbird, and belongs to California and Oregon; is especially abundant in the swamps and marshes of the former State. Like the Swamp Blackbird of the Eastern States, it nests in the vicinity of water, in colonies, usually placing the nest in alder bushes, willows and flags. It is composed of mud, straw and coarse grass, lined with finer fibrous material.

The eggs are of a light blue, slightly deeper than the ground-color of the Red-wing's eggs, marked around the larger end with a circle of ashy-brown, sometimes black, irregular lines and blotches; four or five in number; size 1.00 x .60.

501. *Sturnella magna* (LINN.) [263.]

Meadowlark.

Hab. Eastern North America, west to the Plains, north to Canada.

The Old Field Lark is a well-known bird in the United States east of the Mississippi, breeding wherever found, from Florida and Texas northward. West of the Mississippi it is replaced by the Western form, *Sturnella magna neglecta* (Aud.). As its name implies, the meadows and fields are its home. In almost any stretch of pastureland may be found a pair or colony of Meadowlarks, and the sweet sound of their wild, ringing, and rather melancholy notes fill the air at short intervals from sunrise till the gloaming. The nesting time is in May, usually beginning in the middle or latter part of the month. The nest is built on the ground, in a thick tuft of grass; it is pretty compactly made of coarse, dry, wiry grasses, and lined with finer blades of the same. It is usually formed with a covered entrance in the surrounding withered grass through which a hidden and sometimes winding path is made, and generally so well concealed that the nest is only to be found when the bird is flushed.

The eggs are crystal-white, more or less thickly spotted or dotted with reddish-brown and purplish, four to six in number, with great variation in size, averaging 1.10 x .80.

The Mexican Meadowlark, *S. m. mexicana* (Scl.),* inhabits the lower Rio Grande Valley and Arizona, southward through Eastern and Central Mexico to Costa Rica.

* No. 501a, A. O. U. Check List.—Ridg. No. 263a.

501*b*. *Sturnella magna neglecta* (AUD.) [264.]**Western Meadowlark.**

Hab. Western North America, north to British Columbia and Manitoba, east regularly to Dakota, Nebraska, Kansas and Texas, sparingly to Illinois and Wisconsin, south through Western Mexico.

Both of our Meadowlarks, *S. magna* and *S. neglecta*, occur in portions of the Mississippi Valley, overlapping each other in their typical styles for a distance of several hundred miles, intermediate specimens being extremely rare. For this reason, and on account of the great difference of its notes and other peculiarities, *S. m. neglecta* should doubtless be considered a distinct species. Its song, according to those who have heard it, is remarkably fine, less shrill, more plaintive and richer than that of the Eastern Meadowlark.*

In Los Angeles county, California, Mr. Shields states that the nesting season is from April 15 to the last of June. Col. Goss gives it as a common bird in Western and Middle Kansas, where it begins laying about the middle of May. Nesting habits and eggs are similar to those of *S. magna*. The markings on a large series of the eggs of the Western Meadowlark before me are finer than on the eggs of *S. magna*. The average size of ten specimens is 1.08 x .84.

[502.] *Icterus icterus* (LINN.) [265.] .**Troupial.**

Hab. Northern South America; West Indies (introduced) (?). Accidental at Charleston, S. C. (Audubon).

This splendid Oriole is admitted as North American on the strength of a single specimen, shot in Charleston, S. C., by John W. Audubon, son of the great ornithologist. Others were seen at the same place, and Audubon was informed that small groups of four and five subsequently made their appearance in the same city and among the islands. Another specimen was shot which fell in the river, and was lost. These may have been birds that escaped from cages, but, as Dr. Brewer observes: "If his information was correct, it precludes the supposition that those which have been procured are caged birds." The Troupial is a very popular and desirable cage bird, having a loud, clear, flute-like whistle, and when kept in confinement becomes very tame. It is common to all the northern countries of South America, where it is said to associate in large flocks.

The nest is described as a large, massive, pensile fabric; the eggs are four or five in number, with a ground-color varying from reddish-drab to deep purple, blotched and streaked with reddish-brown and blackish. Size, 1.10 x .90.

* For a description of the songs of the Western Meadowlark, see Charles N. Allen's article: Bull. Nutt. Ornith. Club. Vol. VI, pp. 145-150.

503. *Icterus auduboni* GIRAUD [266.]**Andubon's Oriole.**

Hab. Central and Northern Mexico, north to the Lower Rio Grande Valley in Texas.

This large and beautiful Oriole is found in the United States in the Lower Rio Grande Valley, from thence southward. Dr. Merrill found it in moderate abundance about Fort Brown, where it is the only resident species. Its usual song is a prolonged and repeated whistle of extraordinary mellowness and sweetness, each note varying in pitch from the preceding. It is shy, and remains in the deep woods during the breeding season.

At Lomita, on the Rio Grande, Mr. George B. Sennett found two nests with incomplete sets of eggs early in May. At Hidalgo a set of four was taken. The three nests were found in heavy timber, some ten or twelve feet from the ground, are half-pensile, something like those of the Orchard and Bullock's Orioles, and attached to upright terminal branches. They are composed of dried grasses woven among the growing twigs and leaves so as to form a matting light and firm. They measure on the inside some three inches in depth and rather more in width. The eggs Mr. Sennett describes as being peculiar, resembling those of no other found in that region. The ground-color is white, covered with fine flecks of brown, giving the egg the appearance of being covered with dust. Over these flecks, and principally at the larger end, are irregular stains and splashes of deeper brown, sometimes mixed with lilac, on which are coarse dark brown or black hieroglyphics. Some have more and larger splashes than others, but none are free from the dark, grotesque lines peculiar to the eggs of this family. In shape they are less pointed, and in size smaller to size of bird, than those of other Orioles. The shells are very tender. Nine specimens average in size .97 x .71, the largest being 1.00 x .72, and the smallest .96 x .67.*

504. *Icterus parisorum* BONAP. [268.]**Scott's Oriole.**

Hab. Central Mexico, north to southern border of the United States—Texas to Arizona. Lower California.

Scott's, Paris or Black-and-yellow Oriole, as it is variously called, is found more or less abundantly in all suitable localities of Southern Texas, New Mexico and Arizona. On May 4, 1885, Mr. W. E. D. Scott found a nest of this species containing two fresh eggs, in Pinal county, Arizona. During the summer of 1884 he found five nests in the same region, between May 24 and July 1. All except one were placed in yucca plants, about four feet from the ground, and situated not far

* Further Notes on the Ornithology of the Lower Rio Grande of Texas.

from water. Several were sewed to the edge of dead leaves, which, hanging down parallel to the trunks of the plant, entirely concealed the nest. These were semi-pensile, and composed externally of fibres of the yucca, fine grasses, cotton-waste, twine and batting, lined with fine grasses and cotton-waste throughout. A fifth nest, taken July 1, was built in a sycamore tree about eighteen feet from the ground. Pensile, being attached to the ends of the twigs very much like that of a Baltimore Oriole.

The nests contained three and four eggs each. The sizes of one set of four, taken May 27, are given as follows: .96 x .68, .98 x .66, .92 x .68, .96 x .68; another set of four, taken May 30, exhibit the following respective measurements: 1.01 x .72, 1.02 x .70, .97 x .70, 1.02 x .73. The eggs are usually four in number, of a dull white, with a bluish tint variously marked with small blotches and fine dottings of purplish-brown, approaching black; in some are found the zigzag markings common to the eggs of the Orioles.

505. *Icterus cucullatus* SWAINS. [269.]

Hooded Oriole.

Hab. Valley of the Lower Rio Grande in Texas, south through Eastern and Southern Mexico.

According to Dr. James C. Merrill and Mr. George B. Sennett, this is the most abundant of all the Orioles on the Lower Rio Grande in Texas. Its home is in the woods or the edges of forests and groves, where the trees are hung with pendant tresses of Spanish moss, in which the nests are built. These, Dr. Merrill says, are perfectly characteristic, being most frequently built in a bunch of the hanging moss, usually at no great distance from the ground; when so placed, the nests are formed almost entirely by hollowing out and matting together the moss with a few filaments of dark, hair-like moss as a lining. Another situation is in a bush growing to a height of about six feet, with bare stems, throwing out irregular masses of leaves at the top which conceal the nest. A few pairs build in the Spanish bayonets that grow on sand ridges in the salt prairies; here the nests are built chiefly of the dry, tough fibres of the plant, with a little wool or thistle-down as lining; they are placed among the dead and depressed leaves, two or three of which are used as supports.

The eggs are three to five in number, white, with a bluish tinge, or buff, marked with hieroglyphics and pencilings common to the eggs of this family, but not so abundant. These markings are usually brown, but, when profuse, black and lilac shades appear. The larger end is never free from markings, and is frequently covered with them, but more commonly displays them in the form of a band. Dr. Merrill

says some sets are precisely like large Vireo's eggs. Mr. Sennett gives the average size, taken from a large series, as .86 x .60.

505a. *Icterus cucullatus nelsoni* RIDGW.

Arizona Hooded Oriole.

Hab. Southern Arizona and California, south into Western Mexico and Lower California.

This variety of the Hooded Oriole is a common breeding bird in Southern Arizona and California. Prof. B. W. Evermann found it nesting quite numerously as far north as San Buenventura, California, and states that it has been found breeding at Santa Barbara, thirty miles farther up the coast, though not so commonly as in Ventura county. The first full set of eggs was taken May 1; the average number to a set in that region is five. The nests were generally suspended in sycamores, often in live-oaks, ranging from five to fifteen feet from the ground. They are composed of grass picked while yet green, so that the nest is usually of a bright straw-color.

Mr. R. B. Herron found this bird breeding at San Gorgonia Pass, California, in the months of May and June, 1883; the nests were placed in sycamores, ranging from ten to twenty feet above the ground. In Southern Arizona it was found breeding abundantly by Mr. W. E. D. Scott, in May, June and July, rearing two, not infrequently three broods in a season; a new home is built for each brood. The nests were built in cottonwoods, ash and sycamores, from twelve to forty-five feet above the ground; they were also built in the mistletoe that grows plentifully on the mesquite trees in the region about Tucson. The nests were exceedingly variable in their appearance, composition and manner of attachment to the trees—some were truly pensile, like those of the Baltimore Oriole, others were more like those of the Orchard Oriole, and one rested on a stout twig and could hardly be regarded as a hanging nest at all. The external materials were coarse dry or green grasses and yucca fibres; the linings were the same, but finer, and in some instances horse-hairs and cotton-waste. In these nests Mr. Scott found three or four eggs.

The eggs vary somewhat in shape, some being obtuse and more spherical, others more pointed and oblong. They have a beautiful white ground, sometimes tinged with bluish, marbled, blotched and dotted with large dashes and irregular zigzag lines of purple, brown and black, chiefly at the larger end. A complement of four typical eggs, collected by Prof. Evermann near Santa Paula, California, April 13, 1881, measure as follows: .94 x .66, .94 x .64, .92 x .63, .89 x .63. Four sets of four eggs each, collected by Mr. Herron, are before me. A set taken June 10, 1883, exhibit the following dimensions: .79 x .63,

.78 x .63, .80 x .62, .84 x .62. A common size is .84 x .64, and the average of sixteen specimens is .88 x .62.

506. *Icterus spurius* (LINN.) [270.]

Orchard Oriole.

Hab. Eastern United States, west to the Great Plains, south in winter to Panama.

An abundant species in Eastern United States during the breeding season, which is in May and June. The male is of a chocolate and black color; the female is smaller than the male, and of a yellowish-olive. Orchards and groves are its favorite resorts, and two broods are frequently reared in a season. The nest is rarely found in a large tree or in dense woods, and the distance from the ground is from five to twenty feet, usually about ten. It is a handsome, substantial basket or purse-like structure, woven of fresh blades of grass and lined with feathers. The grasses soon become bleached, and long retain their pea-green color, giving to the nest a beautiful appearance. Its greenness often makes it difficult to detect in the foliage. Double nests of the Orchard Oriole are occasionally met with. A specimen is in my collection, sent me from Texas by Mr. Singley.

The eggs range from four to six, usually five. They have a bluish ground; the markings consist of spots, specks, a few large blotches, irregular and zigzag lines of various shades of brown, chiefly about the crown; there are also deep shell-marks of a purplish. In a large series of eggs the variation in size is considerable, measuring as they do from .70 to .86 long by .50 to .62 broad.

507. *Icterus galbula* (LINN.) [271.]

Baltimore Oriole.

Hab. Eastern North America, north to New England, Ontario and the Saskatchewan country, west nearly to the Rocky Mountains, south through Eastern Mexico and Central America to Panama.

Known as the Golden Robin, Firebird and Hangnest. A common species in Eastern United States where, on account of its handsome dress, the peculiarity of its nest and its loud and rather melancholy whistle, it is well known. Its nest is a masterpiece of workmanship, which, with its bill, it weaves and suspends like a hammock from the drooping bough of an elm or sycamore, in dense foliage. The nest is pensile and nearly a cylindrical pouch, suspended from the extremity of a branch. The distance from the ground varies from four to seventy feet. Any substance combining the proper length, thickness and strength is used in the construction of its nest, consequently the materials depend to a great extent upon the locality—long grasses, strips of bark, vegetable fibres, yarns, wrapping twine, horse and cow hairs, rags, paper and other substances that are readily accessible.

The nest represented in our illustration is taken from a typical specimen which I took from the branches of a sycamore in Franklin county, Ohio, May 23, 1884; other specimens in my collection are not so elaborately made.

The number of eggs laid ranges from four to six. The ground-color is white, with a slight roseate tinge when fresh, fading into a bluish tint when blown, marked with blotches, lines, scrawls, and the usual hieroglyphics common to eggs of this genus, irregularly distributed over the surface, usually thickest about the larger end, forming a wreath. Mr. Norris has two sets of this species' eggs that are entirely unmarked. A set of five measure, respectively, .82 x .62, .80 x .62, .78 x .60, .84 x .64, .87 x .63; another set, four in number, 1.00 x .64, 1.04 x .64, .98 x .64, 1.08 x .67. A common size of the Baltimore Oriole's egg is .92 x .62.

508. *Icterus bullocki* (SWAINS.) [272.]

Bullock's Oriole.

Hab. Western United States east to and including the Rocky Mountains, south in winter to Mexico.

This is the western counterpart of the Baltimore Oriole from the Central Plains to the Pacific. The nests and eggs of the two species are hardly distinguishable. Mr. Shields says that Bullock's Oriole is not a common summer resident of Los Angeles county, California, and it begins building about May 1. Twenty sets, consisting of four and five eggs respectively, collected by Mr. R. B. Herron, in the latter part of May and first of June, at San Gorgonia Pass, California, are before me. In comparing them with a large series of *I. galbula*, the only difference, apparently, is that the ground-color of those of *bullocki* is of a paler and clearer bluish tint, upon which the markings stand out in bolder contrast.* The average size of fifteen specimens is .94 x .62. The sizes of an average set of four are .89 x .64, .93 x .66, .93 x .66, .89 x .65.

509. *Scolecophagus carolinus* (MULL.) [273.]

Rusty Blackbird.

Hab. Eastern and Northern North America, west to Alaska and the Great Plains. Breeds from Northern United States northward.

The Rusty Grackle or Thrush Blackbird is only a migratory species in most of the United States, and is only seen in small flocks in the spring and fall during its passages north and south. Breeds from the northern States northward. Mr. Ernest E. Thompson states that it is an abundant migrant in Western Manitoba, and breeds com-

* A set of five eggs in this series, taken June 8, seems to be unique in their ground-color and markings. They are yellowish-buff, with a homogeneous mass of regular and irregular concentric rings about the larger ends, mingled with a few spots, blotches and bold streaks. These are of a rich reddish-brown, varying in intensity, even approaching black. There are also underlying circles and spots of purple. Their sizes are .87 x .65, .88 x .66, .92 x .65, .93 x .54, .95 x .66.

monly about Big Plain and Winnipeg, building the nest on the ground of hair and fibres, much like that of a Savanna Sparrow on a large scale, and not necessarily near water.

A nest was found June 24 near St. John, N. B., by James W. Banks; it contained two young and two eggs. The nest was placed in the upper branches of a spruce, twenty-eight feet from the ground. It was bulky and large for the size of the bird, composed chiefly of honeysuckle vines and mixed with mud, forming a solid mass. The smaller of the two eggs measured 1.09 x .76. The eggs are described as varying from a grayish to a light green, very thickly covered with blotches and dottings of purplish and reddish-brown, without streaks and lines; usually four in number, varying much in the character of their markings. The variations are as great as are those in the eggs of the next species. The number laid is said to range from four to seven with an average size of 1.00 x .76.

510. *Scolecophagus cyanocephalus* (WAGL.) [274.]

Brewer's Blackbird.

Hab. Western North America, from the Great Plains to the Pacific, north to the Saskatchewan, south to the table-lands of Mexico.

The Blue-headed Grackle is an abundant species throughout the West, breeding in all suitable localities. In California it breeds in immense colonies. Mr. Shields states that in Los Angeles county it begins nesting about May 1. The usual number of eggs laid is five, sometimes six, and even eight.

The nest is built in any suitable place—in the fork of a large bush or live-oak tree and in garden evergreens, at a height of twenty or thirty feet. It is large and bulky, and constructed externally of a rough frame of twigs, with a layer of mud, lined with fine rootlets, grasses, horse and cow hairs. As many as a dozen nests have been found in a single cypress tree. All the nests found by Mr. Bryant near Carson, Nevada, were upon the ground, usually on the edge of a bank formed by an irrigating ditch, with the exception of one, which was built two feet from the ground upon dry tule and well hidden by the growing stems. In a large series of eggs extreme variations will be found in the shape, color and size. They are of a dull greenish-white or gray, with numerous streaks and blotches of dark brown; in some the markings are very large and of a lighter shade, in others smaller, but so numerous as to conceal the ground-color. Ten eggs measure: .96 x .71; .93 x .77; 1.02 x .70; 1.01 x .76; 1.03 x .68; 1.00 x .73; 1.05 x .75; 1.06 x .78; 1.07 x .73; 1.09 x .73.

511. *Quiscalus quiscula* (LINN) [278.]**Purple Grackle.**

Hab. Atlantic coast of the United States (except Southern Florida), north to Massachusetts.

A well-known and an abundant species of the Atlantic coast, and commonly called Crow Blackbird. Its nest is built in trees of almost any kind, usually, however, those of thick foliage, and by preference coniferous trees. It is generally placed on the boughs, but sometimes in cavities, and quite often in hollow stubs in low trees near water. In secluded places the nest is not infrequently built in bushes. It is a loose, bulky affair of twigs, hay and grasses which are often cemented with mud. The eggs are four to six in number, and they present great variations in size and color. They are light greenish-white, with large dashes and irregular streaks of black and brown, in some chiefly at the larger end; in others the ground-color is of a rusty-brown; these are marked chiefly about the larger end with cloudy blotches of the same color. The average size is 1.18 x .84.

511a. *Quiscalus quiscula aglæus* (BAIRD.) [278a].**Florida Grackle.**

Hab. Chiefly southern portion of Florida, west along the Gulf coast to Louisiana.

This is a slightly smaller race of the Crow Blackbird than the preceding. Eggs in my cabinet collected in the vicinity of Charlotte Harbor, Florida, do not differ in size or coloration from those of *quiscula* or *æneus*. The nesting season is in April, May, and June.

511b. *Quiscalus quiscula æneus* (RIDGW.) [278b.]**Bronzed Grackle.**

Hab. Eastern North America, from the Alleghanies and New England north to Hudson Bay, west to the Rocky Mountains.

The Bronzed Crow Blackbird is a very common species every where in its range. It begins nesting in favorable seasons as early as the middle of March, and by the latter part of April many of the nests are finished and incubation has begun. Other nests may not be completed until sometime in May. It nests anywhere in trees or bushes, on boughs or in hollow limbs or stumps at any height. A clump of evergreen trees in a lonely spot is a favorite site; often large colonies will nest in such places; and it is also found breeding especially abundant in sycamore groves along streams and in oak woodland. A number of pairs will often find suitable nesting places in the trees of quiet orchards. The nest is a coarse, bulky structure, composed of grasses, knotty roots mixed with mud; the lining is fine, dry grass, horse hair or sheep's wool.

The eggs are light greenish or smoky-blue, with irregular lines, dots, blotches and scrawls distributed over the surface; there is just as

much variation in the eggs of this species as is found in those of *purpureus*, of the Atlantic coast. The number laid ranges from four to six, although on the 15th of May, 1888, I found two nests containing seven each. The average size of ten specimens is 1.20 x .82.

512. *Quiscalus macrourus* SWAINS. [275.]

Great-tailed Grackle.

Hab. Southern Texas, south through eastern Mexico to Central America.

Called the Fan-tailed Crow Blackbird or Texas Grackle. It is an abundant bird in southern Texas. Concerning its nesting Dr. Merrill says: "Early in April, after several weeks of noisy courtship, they begin to build in irregular colonies, and by the middle of the month have eggs. The nests are perhaps most frequently placed near the top of one of the main upright branches of a young mesquite-tree. They are strongly built of straws, leaves and grasses, mud being used freely. Where Spanish moss is plentiful, the nests are sometimes composed entirely of it; and I have found them among tule-reeds, where several species of Herons were breeding. I have also found their nests either supported by the lower part of the nest of the Caracara Eagle, or in the same tree."

The eggs are usually three in number, although Mr. Benners found many sets in Texas of four and five. They vary greatly in appearance; the ground color is usually a greenish-white or purplish-brown, more or less heavily spotted and dashed with several shades of brown. The markings are apt to be heavier at the smaller end. By this peculiarity they can usually be distinguished from those of *Q. major*. The average size of forty-five eggs is 1.26 x .85; largest 1.44 x .91; smallest 1.16 x .82.

513 *Quiscalus major* VIEILL. [277.]

Boat-tailed Grackle.

Hab. South Atlantic and Gulf States, north to Virginia, west to Texas.

Along the coast of the States that border on the Atlantic and the Gulf of Mexico, from the Carolinas to the Rio Grande, the Boat-tailed Crow Blackbird is an abundant species. It is known as the Jackdaw. Breeds in colonies in reeds and rushes in the midst of swamps, or anywhere in trees, often a considerable distance from water, and the nests are also placed in bushes or upon trees at heights varying from twenty to forty feet. It is large and clumsy, made of coarse materials: sticks, dry grasses, weeds, strips of bark, lined with finer stems, fibrous roots, and grasses. The nesting time is in April, May, and in June, according to locality. Three or four eggs are laid, of a brownish-drab; some tinged with olive, others with green; they are marked with irregular blotches of brown and black. Ten eggs measure: 1.20 x .90; 1.21 x .86;

1.23 x .87; 1.27 x .89; 1.26 x .89; 1.27 x .81; 1.24 x .84; 1.30 x .91; 1.29 x .84; 1.28 x .90. The average size is 1.24 x .81.

514 *Coccothraustes vespertina* (COOP.) [165.]

Evening Grosbeak.

Hab. Western North America, north to the Fur Countries; eastward, irregularly in winter to Michigan, Wisconsin, Illinois, and Iowa; casually to Ohio and Ontario, south into Mexico.

This handsome bird is not uncommon in various portions of western North America, from the Rocky Mountains to the Pacific. It is a common resident of the forests of Washington Territory, and also of Oregon. In the latter region Dr. Merrill observed the birds carrying building material to a huge fir tree, but was unable to locate the nest, and the tree was practically inaccessible. Mr. Walter E. Bryant was the first to record an authentic nest and eggs of the Evening Grosbeak. In a paper read before the California Academy of Sciences, June 20, 1887, he describes a nest of this species containing four eggs, found by Mr. E. H. Fiske, in Yolo county, California. The nest was taken May 10, 1886, but the eggs could not be preserved, as incubation was so far advanced. In general shape, color, and markings, they were similar to the eggs of the Black-headed Grosbeak, but in size, Mr. Fiske thinks, they were somewhat larger. The nest was built in a small live oak, at a height of ten feet, and was a more pretentious structure than is usually built by the Black-headed Grosbeak, being composed of small twigs supporting a thin layer of fibrous bark and a lining of horse hair.

June 5, 1884, Mr. John Swinburne found a nest of the Evening Grosbeak in a thickly wooded canon, about fifteen miles west of Springerville, Apache county, Arizona. The nest was placed about fifteen feet from the ground, in the top of a small willow bush, on the border of a stream. It was a comparatively slight structure, rather flat, and composed of small sticks and roots, lined with finer portions of the latter. This nest contained three fresh eggs of a clear greenish-ground color, blotched with pale brown.

This is all the information we have at present regarding the nests and eggs of the Evening Grosbeak.

515 *Pinicola enucleator canadensis* (CAB.) [166.]

American Pine Grosbeak.

Hab. Northern North America in general. Breeds from northern New England, Labrador, etc., to Alaska, (except the coast south of the peninsula), and south in the higher Rocky Mountain regions to Colorado and Utah; in winter south to Northern United States.

This large, handsome Grosbeak is resident in Northern New England, elsewhere in the Northern and Eastern States it is a winter migrant. Mr. Boardman found a nest with two eggs in it at Calais, Maine, supposed to belong to this species. Dr. Coues found it breeding

on the coast of Labrador. Mr. Trippe met with the Pine Bulfinch in Colorado, living up near timber line, and observed young birds fully fledged in June. Mr. McIlwraith thinks that it is highly probable that this species may yet be found breeding in Ontario.

The bird, according to Dr. Coues, inhabits chiefly coniferous woods in flocks when not breeding, feeding upon the fruit of such trees. "A fine musician, of amiable disposition and gentle manners, often caged. Nest composed of a basement of twigs and rootlets, within which is a more compact fabric of finer materials; eggs usually four, pale greenish-blue, spotted and blotched with dark brown surface markings and lilac shell-spots; 1.05 x .74."

517 *Carpodacus purpureus* (Gmel.) [168.]

Purple Finch.

Hab. Eastern North America. Breeds from northern United States northward.

Called Purple Grosbeak, Crimson Finch or Linnet. It is found breeding regularly in the northern tier of States — Dakota, Minnesota, Wisconsin, Michigan, etc., northward, and is said to have been found nesting in northern Illinois. An abundant bird in New England, where its sweet song, bright colors and sociable disposition have made it a favorite bird. It nests in May and June. The Rev. J. H. Langille states that he has found it nowhere so abundant as in Nova Scotia.

The nest is usually placed in evergreens or orchard trees, at a moderate distance from the ground. It is composed of weed-stalks, bark-strips, rootlets, grasses, all kinds of vegetable fibres, and lined with hairs. The nests and eggs remind one of the Chipping Sparrow's on a large scale.

The eggs are of a dull green, spotted with very dark brown, chiefly about the greater end; four or five in number, and measure .85 x .65.

517^a. *Carpodacus purpureus californicus* BAIRD. [168^a.]

California Purple Finch.

Hab. Pacific coast of the United States, from British Columbia south to Southern California.

The California Purple Finch is a common bird throughout its range. Mr. William A. Cooper notes it as abundant around Santa Cruz, California. He states that it is a most destructive bird, visiting orchards and destroying young buds, blossoms, and fruit. It retires to the wooded river bottoms and hills to breed; the favorite situations for the nest are the tops of tall willows, alders, trees covered with climbing ivy, and horizontal branches of redwoods. The nests are usually placed at a considerable distance from the ground; one was found placed in the horizontal branches of an apple tree; the composition of the nests consist of stems and vegetable fibres for the frame-work,

which is generally loosely put together; the inner portions are of finer material of the same, lined with wool or a few hairs.

The eggs are four or five in number; they are of a bluish-green or light emerald-green, marked with spots of brown and dull purple, chiefly around the larger end; in some specimens they form a confluent ring; others are spotted over the entire surface, but less abundantly than at the end. Mr. Cooper gives the sizes of a set of four taken May 2, as .83 x .57, .81 x .56, .81 x .56, .80 x .54; another set, taken May 3, give the following measurements: .75 x .55, .73 x .56, .72 x .56, .71 x .57.*

A set of four eggs in Mr. Norris' cabinet were collected June 14, 1888, near Salem, Oregon. The nest was made of grass and small twigs, lined with hair, and was situated in a small maple tree, thirty feet from the ground. The eggs are bluish-green, speckled and spotted with olive. They measure .84 x .57, .83 x .57, .83 x .57, .86 x .56.

518. *Carpodacus cassini* BAIRD. [169.]

Cassin's Purple Finch.

Hab. Western United States, from the Rocky Mountains to the Pacific, north to British Columbia, south over the highlands of Mexico.

A common bird in Colorado, Utah, Nevada, and Eastern California. Its general habits, nesting and eggs are very similar to those of the Purple Finch of the East. The nest is found in various situations, box-alder bushes, the tops of cottonwood, aspen and pine trees. It is composed principally of roots and twigs, lined with softer material of the same, together with moss and cotton.

The eggs are usually four in number, and a typical specimen is oval in shape, pointed at the smaller end. The color is light bluish-green, dotted around the larger end with slate, lilac and blackish-brown. The average size is .84 x .62.

519. *Carpodacus mexicanus frontalis* (SAY) [170, 170a.]

House Finch.

Hab. Western United States, from the Rocky Mountains to Pacific coast (chiefly south of 40° in the interior), and south through Western and Central Mexico to Colima and Guanajuato, Lower California. (Ridgw.)

This bird is known as the Red-headed Linnet or Burion. We also include under this head the supposed race *C. frontalis rhodocolpus* (Cab.)† It is a very common bird in the interior region of the United States, from Nevada, Utah and Colorado southward, and is also abundant on the Pacific coast. Mr. Shields mentions this as one of the best

* Bull. Nutt. Ornith. Club, III, pp. 8-10.

† No 519a, Crimson House Finch, of the A. O. U. Check List, which Prof. Ridgway believes to be untenable—for further details see Manual of North American Birds, p. 391.

known birds of Southern California. Prof. Evermann found it to be by far the most common bird of Ventura county, and obtained the first full complement of eggs early in April. The bird will place its nest anywhere, from the limb of any tree to the side of a haystack or a tin can on a porch. It is made of anything that the bird happens to find handy—grasses, straws, roots, etc., and the nest of an Oriole or Cliff Swallow is often occupied.

Mr. Shields states that in Los Angeles county, California, this species begins nesting in the first part of April, and eggs may be found from that time into the first of July. Two, and sometimes three broods are reared in a season. The eggs are four or five, usually five in number; their color is of a pale bluish or, as some would call it, pale greenish-blue, sparsely marked with spots, specks and lines of very dark brown or black, chiefly around the larger end. Some specimens before me are *unmarked*. An average set of five eggs offer the following measurements: .82 x .57, .85 x .54, .84 x .55, .83 x .54, .82 x .52. The average of twenty specimens is .82 x .58.

520. *Carpodacus amplus* RIDGW. [171.]

Guadalupe House Finch.

Hab. Guadalupe Island, Lower California.

This darker colored House Finch was found to be quite common on Guadalupe Island, by Mr. Bryant, when he visited that place in 1885. The species did not differ in its habits or song from *frontalis*. February 22 two nests were found in cypress trees nearly completed, and one with five eggs was taken March 1. The last nest taken was on April 7, and contained five eggs with small embryos in them. Nearly all the nests were placed on the branches of cypress trees; the birds seemed to show a preference for the leeward side, where the nest would be protected from prevailing winds. One pair built in a clump of mistletoe at a height of twenty feet; others built in the tops of palms. The materials used were the finer dead stems of weeds; in one nest the foundation and sides were made of pine needles. The lining was invariably of goat's hair. The eggs, sometimes four in number, but oftener five, during the early part of the season, are colored precisely like the average specimen of *C.M. frontalis*, the spots being either sparingly applied or entirely wanting. They also resemble them in general shape, but the size serves to distinguish them. Five eggs in one set measure 22 x 15, 22 x 15.5, 22.5 x 15.5, 23 x 15.5, 23 x 16.5 mm.* The length measurement varies from 19.5–24 mm., and the width 15–16.5 mm. The average size of thirty-two specimens is 21.3 x 15.5 mm.†

* .87 x .59, .87 x .61, .89 x .61, .91 x .61, .91 x .65.

† .77 to .94 in length by .59 to .65 in breadth; average .84 x .61.

521. *Loxia curvirostra minor* (BREHM.) [172.]**American Crossbill.**

Hab. North America in general, but chiefly the northern portion and east of the Plains; resident sparingly southward in the Eastern United States to Maryland and Virginia near the coast, and to Northern Georgia, Tennessee and Kentucky in the mountains.

A curious bird, whose home is in boreal regions; and at times, even during the season of reproduction, straggles far southward. The American Red Crossbill is known to breed in Northern New England, and from thence northward. Breeds sporadically in mountainous regions south as far as New York, Pennsylvania, Central Maryland, Virginia, Northern Georgia, Tennessee and Kentucky. It may be found breeding where least expected. The nesting time is usually in February and March, while the snow is yet on the ground.

In the Lower Hudson Valley, Mr. Eugene P. Bicknell found a nest of this species on the 30th of April, containing three eggs. The nest was placed in a cedar of rather scanty foliage, about eighteen feet from the ground, and was without any main support, being built in a mass of small, tangled twigs. The composition externally was of spruce twigs, loosely arranged; the main body of the structure was a mass of matted shreds of cedar bark, while the inside was felted by finer material, and lined with horse-hair, fine rootlets, grass stems, pieces of string and two or three feathers. The structure also contained small pieces of moss, leaves, grass, string, cottony substances, and the green foliage of cedar.*

The eggs are three or four in number, usually four. Mr. Bicknell gives the sizes of the three eggs which this nest contained as .74 x .56, .75 x .58, .78 x .59 respectively. The color of the eggs is pale greenish, spotted and dotted about the larger end with various shades of brown and lavender shell-markings; average size .75 x .57.

522. *Loxia leucoptera* GMEL. [173.]**White-winged Crossbill.**

Hab. Northern North America, south into the United States in winter to or beyond 40°. Breeds from Northern New England and higher Rocky Mountains northward.

This is not so common a species as the Red Crossbill, although they are both frequently found associated in deep evergreen woods. The White-winged Crossbill is resident in Northern New England, and from the Rocky Mountain region of Colorado, Wyoming and Montana northward. It is possessed of the same uncertain and erratic disposition as *L. c. minor*, and its movements are not to be relied upon; for this reason, it is likely to be found breeding in suitable places in any of the northern tier of States. It breeds in winter or early spring, and the nesting is said to be like that of the Red Crossbill. The eggs are de-

* For full account of this nest and the eggs, see Bull. Nutt. Ornith. Club, Vol. V, pp. 7-11.

scribed as pale blue ; the larger end rather thickly spattered with fine dots of black and ashy-lilac ; the size .80 x .56. They are said to resemble those of the Purple Finch.

523. *Leucosticte griseonucha* (BRANDT.) [174.]

Aleutian Leucosticte.

Hab. Aleutian and Prybilof Islands, Alaska; west to Commander Islands, Kamtschatka, east to Kadiak.

The Aleutian Rosy Finch is the largest of the species of this genus known to inhabit North America. It is found in abundance on the Prybilof and other Aleutian Islands. Dr. Stejneger states that on Bering Island it cannot be said to be numerous, except perhaps in a few places where the localities are favorable. Copper Island, being one mass of rugged and cracked rocks and cliffs, with steep, often quite perpendicular walls jutting up straight out of the ocean, is the favorite haunt of these stone-loving birds, which may be said to be fairly common on that island, occurring in pairs around the whole isle during the breeding season. In the latter half of June he found parents feeding their young, and full-fledged young were taken July 7. Many pairs produce two broods in a year.

The nest of this species is made on the ground or among rocks, and is very bulky, composed of a few straws and moss, lined with feathers. The nests and eggs of others of this genus are not certainly known, but probably resemble those of *griseonucha*.

The eggs are described as being pure white without markings, three to six in number, usually four; size .97 x .67.

527a. *Acanthis hornemannii exilipes* (COUES.) [178a.]

Hoary Redpoll.

Hab. Circumpolar continental regions; Arctic America.

The Hoary Redpoll Linnet inhabits the whole of boreal America, and it is found in abundance from Alaska to the Atlantic coast, rarely reaching the United States, and then only along the northern tier of States in winter. It breeds in high latitudes, nesting in trees and bushes.

The nest is described as rather bulky, composed of small twigs, straws, etc., mixed and lined with feathers.

The eggs are two to five in number, of pale bluish-green, speckled chiefly about the larger end, with reddish-brown, sometimes mixed with a few black specks and lines. Prof. Ridgway gives the average size of the eggs as .68 x .51.

528. *Acanthis linaria* (LINN.) [179.]

Redpoll.

Hab. Northern portions of Northern Hemisphere; in North America migrating south in winter to about 40°.

The Redpoll Linnet occurs in the United States as a winter

migrant. It comes south from its breeding grounds in high latitudes, often in company with Pine Grosbeaks and Crossbills, but is so erratic in its movements that its appearance cannot be relied upon. It breeds occasionally in Northern New England; also in Nova Scotia, Newfoundland, and commonly in Labrador and all the Fur Countries. Dr. Stejneger says that this form of the Redpoll seems to be the common breeding bird on the mainland of Kamtschatka, where he took a very young specimen near Petropaulski on the 4th of July. He does not think that this species breeds on the islands, as none were met with from the end of May until the beginning of November.

The bird's general habits are very similar to those of the American Goldfinch. The nest is built in trees and bushes, is bulky, made of twigs and grasses, with generally a warm lining of feathers.

A set of six eggs in Mr. Norris' cabinet were taken May 14, 1885, near Loughboro, England. Their ground-color is bluish-green, speckled chiefly at the larger ends with burnt umber; sizes .62 x .49, .65 x .47, .60 x .45, .62 x .49, .64 x .48, .64 x .47. The average size is .67 x .48.

529. *Spinus tristis*. (LINN.) [181.]

American Goldfinch.

Hab. Whole of temperate North America, resident.

Thistle-bird, Yellow-bird, Lettuce-bird, and "Wild Canary" are the names commonly applied to this species. It is distributed throughout North America generally, and breeds southward to the middle districts. In the United States it is a well known bird; its conspicuous bright colors, peculiar, undulating flight, and its plaintive, lisping notes are familiar to even the casual observer.

It nests when most other birds are through breeding—in some localities, however, as early as June 15, but usually in July, or when the thistle-down begins to float on the breeze, in August and September. Exceptionally, nests with eggs have been found in May. The nest is a beautiful, compact, felted mass of vegetable fibres, moss, grasses, leaves, fine strips of bark, lined with plant down, and the nests that are built late enough in the season usually have a thick lining of thistle-down. It is placed in all kinds of trees and bushes, ranging from three to forty feet above the ground. Willows, maples, and orchard trees seems to be favorite nesting sites, and not infrequently it is found built in the tops of thistle plants.*

* Mr. Walter E. Bryant records the following unusual nesting place of the American Goldfinch as observed by Mr. A. M. Ingersoll, in California: "In 1884 a grove of young willows that had been occupied the previous season by a colony of tri-colored blackbirds, was found deserted by them. Many of the blackbirds' nests still remained in forks of the willows from four to ten feet above the marsh. Six of these old nests were in possession of American Goldfinches. The present tenants had loosely filled the nests about one-half full of cat-tail down, and had formed only a slight hollow for the nest proper. Some were found with eggs, and in others there were 'birds in last year's nests.'"

Some writers state that the eggs of the Goldfinch range from three to five in number. This is not correct, at least in Ohio. The number to a set varies from three to six. In the month of August and during the first two weeks of September, 1888, Mr. Rudolph, A. L. Baker, and myself collected twenty-nine nests with eggs of the Goldfinch. Out of this number, eleven contained six eggs, ten contained five, five were of four, and three were of three eggs each. Sets of five and six are common. The color of the eggs is plain, pale bluish or greenish-white, unspotted. Ten eggs measure .62 x .48, .61 x .49, .61 x .48, .62 x .51, .63 x .52, .65 x .52, .67 x .51, .67 x .52, .66 x .52, .67 x .52. An average specimen measures .65 x .52.

530. *Spinus psaltria* (SAY) [182.]

Arkansas Goldfinch.

Hab. Western United States from the Great Plains to the Pacific, north on the coast to Oregon, in the interior north to Colorado and Utah, southward to Sonora.

This species is also called the Arkansaw Green-backed and Rocky Mountain Goldfinch. It is an abundant bird in the West, nesting like its Eastern cousin, the American Goldfinch, in trees and bushes. In California it breeds from the latter part of April to the middle of July; May and June being the most general breeding months. Ten nests containing four eggs each, collected by Mr. R. B. Herron, at San Gorgonia Pass, California, in May and June, are in my cabinet. The eggs are of the same color as those of *S. tristis*, pale greenish-blue, but are much smaller. The nests are also smaller—some of the more elaborately built nests of *tristis* are almost double the size of those of *S. psaltria*. Ten eggs measure .63 x .46, .60 x .45, .62 x .41, .62 x .42, .59 x .46, .63 x .44, .63 x .47, .63 x .48, .64 x .47, .63 x .45; comparatively little variation in size. Four eggs is the usual number laid, rarely five.

530a. *Spinus psaltria arizonæ* (COUES.) [182a.]

Arizona Goldfinch.

Hab. Southwestern portion of the United States, North to Arizona and Colorado, East to Texas and Mexico.

The general habits, nesting and eggs of this sub-species are exactly the same as those of the Arkansas Goldfinch.

531. *Spinus lawrencei* (CASS.) [183.]

Lawrence's Goldfinch.

Hab. California, in winter southwestward to Arizona.

Lawrence's Goldfinch is a common bird in California where it breeds in abundance, placing the nest usually near the extremity of the limb of a live oak, where it is well concealed and hard to find. They nest in April, May and June. Prof. Evermann says he found the first full set of eggs in Ventura county, April 6. The nest is composed of wool,

fine grasses, down and feathers, closely matted together and lined with the long hair of the larger animals. They are often made entirely of grasses. The latter is chiefly the composition of four nests before me taken by Mr. Herron in May and June. The eggs are four or five in number, and are pure white. Four typical eggs before me measure as follows: .62 x .47, .64 x .45, .62 x .44, .62 x .48; a set of five collected at San Gorgonia Pass, by Mr. Herron, June 22, 1883, offers the following sizes; .56 x .45, .58 x .45, .61 x .46, .62 x .46, .64 x .44.

533. *Spinus pinus* (WILS.) [185.]

Pine Siskin.

Hab. Northern North America, breeding from Northern United States northward; South in winter to Mexico.

The Pine Linnet, Pine Finch, or American Siskin, breeds throughout the British Provinces, Northern Maine, New Hampshire, Vermont, New York, Michigan, thence to Oregon and Washington Territory, in evergreen forests. Its breeding within the United States, however, is by no means of common occurrence. It has been found nesting by Dr. Merriam and others in New York and various New England States. Mr. J. A. Allen obtained a set of four eggs of this species at Cornwall-on-Hudson, Orange county, New York, May 12, 1887. The nest which contained these eggs was placed in the extremity of an upper branch of a Norway pine, about thirty-five feet from the ground.* Another nest was found by Dr. A. K. Fisher, at Sing Sing, New York, on May 25. It was situated in the top of a red cedar, about twenty-four feet from the ground and contained four nearly fresh eggs.† In both cases the birds were observed carrying building material to the nests.

Captain B. F. Goss has a set of four eggs which was taken June 25, 1887, in Northern New York. The nest was placed near the top of a birch tree, and was made of dry grasses and pine needles, with a lining of feathers. The ground-color of the eggs is greenish-white, spotted with various shades of brown; one of the eggs of this set is quite thickly spotted over the whole surface; on another specimen the spots are mostly confined to the larger end. The other two are faintly marked, and one of them is almost immaculate. Their sizes are: .67 x .45, .68 x .48, .67 x .48, .69 x .47. A set of three eggs in Mr. Norris' collection was taken near Salem, Oregon, May 7, 1887. The female was seen on the nest and the eggs were somewhat incubated. The nest is a much flatter structure than that built by *S. tristis*, and was placed on the branch of a fir tree, twenty-five feet from the ground. The eggs are pale greenish-blue, faintly speckled near the larger ends with

* For full account of this nest and the eggs see *The Auk*, IV, pp. 284-286.

† Bull. Nutt Ornith. Club. VIII, pp. 180-181.

cinnamon. They measure: .63 x .49, .54 x .49, .53 x .48, respectively. Another set in the same cabinet, contains four eggs. The ground color is similar to the set of three, but the spots are larger and darker. They were taken in Maine.

* * *Carduelis carduelis* (LINN.)

Goldfinch.

Hab. Europe and Western Asia; introduced and naturalized in portions of Eastern United States.

The European Goldfinch has been introduced and successfully naturalized in various portions of Eastern United States, as in New York, Hoboken, New Jersey, and in the vicinity of Cambridge, Massachusetts, etc. In Central Park, New York city, it is considered a common resident.

April 20, 1886, Mr. E. T. Adney discovered two nests in Central Park, one of which contained five fresh eggs. The nests were placed in pine trees, among the tufts of long pine needles, near the end of a slender horizontal limb, about twelve feet from the ground. The nest of the European Goldfinch is a handsome, compact, cup-shaped structure, made of fine, soft grasses, vegetable fibres and mosses. It is thick-walled and substantial, often built in bushes and various kinds of trees. The eggs are four to six in number of greenish-white, or light greenish-blue, dotted with reddish-brown around the larger end. Their average size is .72 x .50.

* * *Passer domesticus* (LINN.)

European House Sparrow.

Hab. Europe, etc.; introduced into the United States with regrets.

The "rats of the air" were imported into this country about sixteen years ago for the purpose of ridding our trees and shrubbery of insect-pests. The species has proved a failure as an insectivorous gormandizer, and by its force of numbers has compelled some of our native and fondly-cherished birds, such as the Bluebird and Martin, to retreat to their primitive abodes for nesting places—the cavities in forest trees—and even there, they will doubtless, ere long, have to face this sturdy foe.

The habits, nests and eggs of the House Sparrow are too well known to require description. It is called English Sparrow, The Sparrow, Philip Sparrow, Parasite, Tramp, Hoodlum, Gamin.

* * *Passer montanus* (LINN.)

European Tree Sparrow.

Hab. Europe; naturalized about St. Louis and elsewhere.

This species looks very much like the European House Sparrow, and it nests similar—in holes of trees, nooks and corners of isolated buildings, etc. The eggs are four to six in number, similar to those of

P. domesticus, but averaging "smaller and usually darker and redder." The bird is thoroughly naturalized in the vicinity of St. Louis, Missouri.

534. *Plectrophenax nivalis* (LINN.) [186.]

Snowflake.

Hab. Circumpolar regions, except islands of Bering Sea; south in winter to Northern United States; irregularly to Georgia, Southern Illinois, and Kansas.

This beautiful, white bird breeds in the high Arctic regions, only visiting the Northern United States in winter in large flocks. It is known as the Snow Bunting, and is beautifully called a "warm-blooded Snowflake." Many a dreary winter landscape is made a picturesque scene when thousands are seen in their flight drifting before a storm.

The nest of this bird is placed on the ground, and is often hidden by a tussock of grass or rock; it is built of grass peculiar to the Arctic regions, mixed with moss, is very substantial, with thick walls, and a small, deep cavity, which is warmly lined with feathers.

Mr. Norris has a set of four eggs of this species, which was taken in Iceland, May 30, 1882. The eggs were fresh, and are of a pale greenish-white, speckled and spotted, most heavily near the larger ends, with russet and lilac-gray. Their sizes are .84 x .61, .88 x .67, .88 x .61, .86 x .64. The ground-color in a large series is said to vary considerably—from whitish to dull purplish or greenish tint, and the average size is .91 x .64.

** *Plectrophenax nivalis townsendi* RIDGW.

Frybilof Snowflake.

Hab. Frybilof Islands, Alaska, and Commander Islands, Kamtschatka.

This new sub-species is doubtless the bird found breeding by Dr. Stejneger on Bering and Copper Islands, in June and July. He states that it is resident on the islands during the whole year. If the season is open and otherwise favorable, the first eggs will be laid shortly after the middle of May; the young will be out in the beginning of June. In July he found fresh eggs of a second brood. The smallest eggs in the number taken measure .94 x .69, .96 x .67, .93 x .73; the largest in long diameter, 1.06.

536. *Calcarius lapponicus* (LINN.) [187.]

Lapland Longspur.

Hab. Arctic regions of both hemispheres; in North America south in winter to Northern United States, sometimes as far as South Carolina, Kentucky, Kansas, Nevada, etc.

As its name indicates, this is a boreal bird, and in North America its summer home is in the regions about Great Slave Lake, Mackenzie River, and Alaska. In these places it breeds abundantly in May, June, and July. In the United States it appears as a winter visitor, in flocks,

often associating with the Horned Lark and Snow Bunting, frequenting the same fields. The nest of this species is described by Dr. Coues as placed on the ground, under tussocks, in grassy hummocks. It is built of mosses and fine, soft, dried grasses, and lined with a few large feathers from some water-fowl.

The eggs, four to six in number, are rather pointed at the smaller end, and are very dark colored, reminding one of the Titlark's; the color is a heavy clouding or thick mottling of chocolate-brown, through which the greenish-gray ground is apparent; .80 x .62.

537. *Calcarius pictus* (SWAINS.) [188.]

Smith's Longspur.

Hab. Interior of Arctic America; south in winter over the Great Plains and prairies to Illinois and Texas.

The Painted Longspur inhabits Arctic America, chiefly the Saskatchewan and the Mackenzie River Valleys, breeding as far north as the Arctic coast and Upper Yukon Valley. It is a common bird on the prairies of Minnesota, Dakota, Montana, etc., southward, associating in the fall with the Chestnut-collared Longspur, but breeds mostly farther north. Its nesting is like that of *C. lapponicus*.

The eggs, four or five in number, are light clay color, marked with obscure blotches and lines, dots and blotches of dark purplish-brown; they have the same average size as those of *lapponicus*, but are colored more like the eggs of the next species.

538. *Calcarius ornatus* (TOWNS.) [189.]

Chestnut-collared Longspur.

Hab. Great Plains of the United States, north to the Saskatchewan; south in winter to Arizona, New Mexico, Texas, and Mexico.

This bird is called the Black-shouldered or White-tailed Longspur. It is one of the most abundant birds of the Western Plains—resident in Middle and Northwestern Kansas, breeding north through Nebraska, Dakota, Montana, etc., to high latitudes. A common but somewhat local breeder in Manitoba. In Kansas it begins laying early in June. The nest is placed on the ground on the high, open prairie, and is composed wholly of mosses.

A set of three eggs in Mr. Norris' collection was taken near Huron, Dakota, May 22, 1886. Incubation had commenced, and the bird was observed on the nest, which was a hollow in the ground, lined with fine grasses. The eggs are pinkish-white, speckled with burnt umber; sizes, .78 x .56, .78 x .54, .78 x .57. A set of four eggs is in my cabinet, which was taken in Becker county, Minnesota, where the species is a common breeder. These eggs have a reddish-clay color,

marked with dark reddish-brown spots and blotches, even approaching black, and obscure shell markings of purple; sizes .75 x .54, .74 x .54, .73 x .54, .73 x .55.

539. *Rhychophanes mccownii* (LAWR.) [190.]

McCown's Longspur.

Hab. Interior of North America, breeding from the northern border of Kansas, north to the Saskatchewan; south in winter to Mexico.

The Black-breasted or Bay-winged Longspur breeds in abundance throughout the prairies of Colorado, Wyoming, and Montana. In the latter region and Dakota it is found associated with the Chestnut-colored Longspur, in whose general habits it is an exact counterpart. Dr. Coues says it has the same soaring, singing flight, and parachute-like descent, "sliding down on the scale of its own music."

Its nesting habits are the same as those of the last species, and the eggs, three to six in number, are similar, but their ground-color is usually more olive; average size .82 x .60.

540. *Poocætes gramineus* (GMEL.) [197.]

Vesper Sparrow.

Hab. Eastern United States, west to the edge of the Plains, north to Nova Scotia and Ontario, breeding southward to Virginia, Kentucky, and Missouri.

The Grass-Finch, Bay-winged Bunting, or "Gray Bird," as it is called, is an abundant species in Eastern United States. Its favorite resorts are weedy fields, roadsides, and commons. From its habit of singing mostly in the evening and in cloudy weather, it is called Vesper Bird. The bird's song alone is sufficient to distinguish it from others of the smaller sparrows. Its song is a clear, sweet trill, finely modulated, or it is the Song Sparrow's song *reversed*.

The breeding season is in May and June. I have found the nest with fresh eggs in July. This is placed on the ground, usually in an exposed position, under a thistle, small bush, or weed-stalk; it is a slight structure, composed of grasses, with a lining of hair.

The eggs are four or five, usually four, in number; they are of a pale greenish-white, sometimes pinkish or grayish-white, marked with blotches, mixed with dots and lines of various shades of reddish or rusty-brown. The average size is .80 x .60.

540a. *Poocætes gramineus confinis* BAIRD [197a.]

Western Vesper Sparrow.

Hab. Western North America, north into British America, east to Manitoba and border of the Plains, south into Mexico.

This form of the Vesper Sparrow is common to the plains and prairies of the West. It possesses the same characteristics which are common to *P. gramineus*, nesting also in the same manner.

Mr. Norris has two sets of eggs of this bird, one of which was

taken by Captain Charles E. Bendire, at Fort Custer, Montana, May 20, 1885, and consists of four eggs; these are of a dull pinkish-white, clouded and spotted with burnt umber; sizes, .76 x .60, .76 x .59, .77 x .59, .79 x .60; the other set, four in number, was taken at Fort Klamath, Oregon, June 2, 1888. Their ground-color is bluish-white, with markings of the same color as those in the first set; their sizes are, .83 x .57, .83 x .59, .82 x .60, .84 x .60.

541. *Ammodramus princeps* (MAYN.) [192.]

Ipswich Sparrow.

Hab. Atlantic coast from Nova Scotia, south in winter to Virginia and coast of Texas.

It has recently been discovered that the Ipswich Sparrow breeds on Sable Island, Nova Scotia, and a series of its eggs are in the National Museum. These are similar to the eggs of the Savannah Sparrow, and, according to Prof. Ridgway, they are uniformly larger; size .81 x .62. The nest is placed on the ground in meadows and other grassy places.

542a. *Ammodramus sandwichensis savanna* (WILS.) [193a.]

Savannah Sparrow.

Hab. Eastern North America, breeding from Northern United States to Labrador, and Hudson Bay Territory.

A rather common, and in some places, an abundant bird in Eastern United States, usually breeding from about latitude 40° northward. It is stated as breeding sparingly throughout Illinois and in some parts of Missouri. In Ohio it is a rare summer resident. Throughout New England the Savannah Sparrow is abundant, being found nearly all the year. Its favorite resorts are salt marshes along the coast, and wet, muddy, open ground, overgrown with grass and weeds in the interior. It is a terrestrial bird, and is known as the "Ground Sparrow." Its song is weak, squeaky and unmusical, which is at times uttered from the ground, or from the tops of bushes. The breeding season is in May and June. The nest is sunken in the ground, and generally well concealed among the weeds and tall grass. It is usually nothing but a slight arrangement of grasses in concentric rings, the brim being flush with the surface.

The eggs are three to six in number, usually four or five, and there exists as great a variety in coloration as are to be found in the eggs of the Song Sparrow. The ground-color is greenish or grayish-white, spotted, speckled, and blotched with light brown and lilac, particularly about the larger end, and the markings are often so numerous that they almost conceal the ground-color; average size .76 x .54.

542*b*. *Ammodramus sandwichensis alaudinus* (BONAP.) [193*b*.]**Western Savannah Sparrow.**

Hab. Western North America (except in general the Pacific coast region); breeds from Rocky Mountains north to Alaska; south in winter to Mexico.

The general habits, nesting, and eggs of this western form of the Savannah Sparrow are in no wise peculiar, but are like those of *A. s. savanna*. Eggs, .75 x .55.

542*c*. *Ammodramus sandwichensis bryanti* RIDGW. [194, *part.*]**Bryant's Marsh Sparrow.**

Hab. Salt marshes of San Francisco Bay, California.

This sub-species differs from *P. sandwichensis alaudinus* in being decidedly smaller and darker in the coloration of the upper parts, which are similar to *A. beldingi* but not so heavily streaked with black, etc. It has been named by Prof. Ridgway in honor of the well known ornithologist, Walter E. Bryant, of Oakland, California, who has devoted much study to the birds of San Francisco Bay and vicinity. Mr. Bryant has kindly furnished me with an account of this bird's nesting, eggs, etc. He states that it is a common resident about Oakland, particularly during the winter, when they become generally distributed over fields and along roadsides. The bird apparently prefers dry ground just away from salt marshes for nesting sites, although they also breed amongst the marsh grass in places not subject to overflow during excessively high tides. The fields selected are usually those more or less overgrown with grass and weeds, or pasture lands where considerable cattle are grazing. The nests are placed on the ground, usually in a depression.

The usual number of eggs is four, rarely five. The color of a set of four taken by Mr. Bryant on May 22, 1880, is grayish-white, irregularly blotched with light brown and reddish-brown, sparingly marked with light purple, which is more noticeable about the larger end, where it appears as shell markings underlying the brown. They measure 20 x 14.5, 19.5 x 14.5, 19.5 x 14.5, 20.5 x 14.5 mm.* The nest from which these were taken is composed outwardly of small, dark grass-stems, and lined with fine, light-colored grasses; external diameter 115 mm. by 50 mm. in height; the cavity is 58 mm. in diameter by 24 mm. deep.† Another set of four eggs in Mr. Bryant's collection came from San Mateo county, California, and was taken May 12, 1878. These are grayish-white, heavily blotched with yellowish and reddish-brown, and an under color of pale lavender. Their sizes are 18.5 x 14, 18.5 x 14.5, 19 x 14.5, 18.5 x 14.5. mm.‡

* .79 x .57, .77 x .57, .77 x .57, .81 x .57.

† External diameter of nest 4.53; height, 1.97; diameter of cavity, 2.28 by .94 in depth.

‡ .73 x .55, .73 x .55, .75 x .57, .73 x .57.

543. *Ammodramus beldingi* RIDGW. [194, *part.*]**Belding's Marsh Sparrow.**

Hab. Salt marshes of Southern California, from Santa Barbara south to Todos Santos Island, Lower California.

Mr. B. T. Gault found this sparrow to be very abundant in the salt marshes in the vicinity of National City, San Diego county, California, in the spring of 1883. A nest containing three fresh eggs was found May 24; it was situated in a patch of marsh weed, apparently raised a little above the ground—several feet above tide-water mark, and was completely saturated with water; notwithstanding the dampness of the nest the eggs were warm to the touch, as the female had just left the nest. The structure was composed almost exclusively of weed stalks, with a little grass and a few feathers, arranged in a careless manner. The ground-color of the eggs is dirty-white, of a brownish tinge, caused by minute specks of brown and lavender. The eggs had a pinkish tinge before they were emptied of their contents. The spots and specks are of lavender, and the blotches of amber-brown, congregating principally toward the larger end, with an occasional streak of a darker brown shade; their sizes are .76 x .58, .77 x .59, .78 x .58.*

545. *Ammodramus bairdii* (AUD.) [191.]**Baird's Sparrow.**

Hab. Interior portions of North America, from the Plains of Dakota and Montana to the Saskatchewan, south in winter to Texas, New Mexico, and Arizona.

In the summer months this species is found on the plains and prairies of Dakota and Montana, north to the Saskatchewan. The bird remained for a long time almost unknown, until Dr. Coues found it breeding in profusion on the prairies of Dakota, in some places outnumbering all the other birds together. In general habits and appearance in life it is quite like the Savannah Sparrows. Dr. Coues states that the song of this species is peculiar, consisting of two or three distinct syllables, of a mellow, tinkling tone, running into an indefinite trill, like *zip-zip-zip-zr-r-r-r*.

The nest is a slight affair, made of grasses and weed-stalks on the ground; its diameter is about four inches. The eggs are laid in June and July, and they range from three to five in number, being similar to those of the Vesper Sparrow (Grass Finch). They are whitish of varying tints, irregularly spotted, speckled, and blotched, with pale and dark reddish-brown; size .80 x .65.

546. *Ammodramus savannarum passerinus* (WILS.) [198.]**Grasshopper Sparrow.**

Hab. Eastern United States and Southern Canada to the Great Plains, wintering in the Gulf States, Bahamas, Cuba, and Porto Rico.

Perhaps better known as the Yellow-winged Sparrow. Anyone

* Bulletin No. 2, p. 58-60, Ridgway Ornithological Club, Chicago, Illinois.

will be able to identify this little bird in hand. The edge of the wing is conspicuously yellow; the lesser wing coverts and line over eye are yellowish. A common bird in the meadows and clover fields of Eastern United States, nesting in May and June. It is a bird of retiring habits, generally keeping in the tall grass, on the ground, and not usually seen only when flushed. Its flight is zig-zag. Sometimes it will mount a stump or weed-stalk, and sing at short intervals for hours at a time a peculiar, monotonous song, which has been aptly compared to that of a grasshopper—hence its common name.

The nest is placed on or rather sunken in the ground, and concealed by a thick tussock of grass.

The eggs are four or five in number, generally four. They have no resemblance to the eggs of the Field Sparrow, Song Sparrow, Savannah Sparrow, or Grass Finch, having a clear, white ground-color, with a moderate polish, spotted more or less thickly with pale reddish-brown, chiefly and sometimes wholly at the larger end. Mr. Poling says he has found fresh eggs in Illinois as early as April 20 and as late as August 12. Two broods are often reared. A set of four eggs in my cabinet, taken by Mr. J. E. Gould, on June 14, in Franklin county, Ohio, exhibits the following respective measurements: .77 x .55, .77 x .56, .79 x .56, .81 x .55; the sizes of a set of five taken May 16 by the same collector are .80 x .59, .79 x .59, .79 x .59, .78 x .57, .77 x .57. A set of four from Marshall county, Kansas, taken May 30, gives the following dimensions: .70 x .54, .70 x .56, .71 x .54, .72 x .55.

546a. *Ammodramus savannarum perpallidus* RIDGW. [198a.]

Western Grasshopper Sparrow.

Hab. Western United States from the Great Plains to the Pacific, south over table-lands of Mexico.

The nesting and eggs of this paler and grayer form of the Yellow-winged Sparrow, which is found in the dry, western regions, are the same as those of the Eastern bird. Eggs, .75 x .57.

547. *Ammodramus henslowii* (AUD.) [199.]

Henslow's Sparrow.

Hab. Eastern United States, north to Ontario and Southern New England, west to the edge of the Plains, winters in the Gulf States.

Henslow's Grasshopper Sparrow or Bunting is not, on the whole, an abundant species in Eastern United States, being found common only in restricted localities. It is given as a rare summer resident in portions of Southern New England. Breeds abundantly in the meadows about Washington, D. C. Mr. Shick found Henslow's Yellow-winged Sparrow breeding in the vicinity of Sea Isle City, New Jersey. Farther west it seems to be common in various sections. It may be found breeding in Southern and Western Ohio, as it is stated by Dr. Brayton

to be a common summer resident on the prairies of Indiana. Breeds also on the weedy prairies of Illinois and Missouri. Messrs. Keyes and Williams record it as a common summer resident in Iowa, and Col. Goss mentions it as a summer resident of Kansas. Mr. L. Jones informs me that in Iowa the favorite resorts of this Sparrow during the breeding season are neglected fields and pasture lands.

Its nest is placed on the ground, sometimes in a slight depression, beneath a tussock of grass; the composition is of fine and coarse grasses, with a few cow hairs.

The eggs, Mr. Jones says, are deposited about May 25. The bird's habits, nest, and eggs are described as being similar to those of the Yellow-winged Sparrow (*A. savannarum passerinus*), but the eggs are not pure white in ground-color, having a greenish or grayish-white tint, profusely dotted and blotched with several shades of brown and lilac shell markings. They are four or five in number, and average $.75 \times .57$.

548. *Ammodramus leconteii* (AUD.) [200.]

LeConte's Sparrow.

Hab. Great Plains, north to Manitoba, migrating south and east in winter through Illinois, Iowa, Kansas, etc., to South Carolina and Gulf States.

A common bird on the western prairies, but seldom observed on account of its habit of hiding in the grass. Breeds from Dakota and Minnesota northward to Manitoba. Dr. Agersborg found a nest of this species containing five eggs, June 19, 1883, in Southeastern Dakota. They were ready to hatch; in coloration and shape, looked like miniature eggs of the Horned Lark.

Mr. Ernest E. Thompson states that in Manitoba, the bird "is commonly found in the willows at all seasons, uttering its peculiar ventriloqual *tweete, tweete*, whence I knew it as the 'Willow-tweete,' long before I ever heard of Leconte, or of any name for this bird." Mr. Thompson describes a nest with eggs of this bird, which were, we believe, previously unknown. "The nest was by a willow bush in a damp meadow; it was apparently on the ground, but really raised six inches, being on the tangled grass, etc. It was composed entirely of fine grass. The eggs—three in number—were of a delicate pink, with a few spots of brownish and of black towards the large end. The pink was lost in blowing. One measured $.75 \times .50$ inches.*

549. *Ammodramus caudacutus* (GMEL.) [201.]

Sharp-tailed Sparrow.

Hab. Salt marshes of the Atlantic coast, from Prince Edward Island and Nova Scotia to North Carolina.

The Sharp-tailed Finch breeds abundantly in the salt marshes of

* Auk, Vol. V., pp. 23-24.

the Atlantic coast from North Carolina northward, and it is commonly found associated in the same places with the Sea-side Finch, *A. maritimus*. They keep closely in the shelter of the rank salt reeds and herbage, where the nest is built. This is fastened to the sedges and composed of grasses, lined with finer material of the same. The nesting season is in May and June, and a second set of eggs may be found in July. While the nidification of this species and the Seaside Finch is essentially the same, Mr. Shick states that on the New Jersey coast, the nest of the Sharp-tail is not built so bulky as that of the former. Both species are common in the salt marshes at the mouths of creeks and rivers along the Atlantic coast.

Mr. Norris has a typical set of four eggs of the Sharp-tailed Sparrow taken by Hon. John N. Clark, near Old Saybrook, Connecticut, at the mouth of the Connecticut River. The nest was in the salt grass of a wet meadow; the eggs were fresh, brownish-white, varying to greenish-white, thickly sprinkled and speckled with tawny-brown, sizes: .75 x .58, .76 x .57, .76 x .58, .80 x .56. The eggs are also said not to be readily distinguishable from some examples of the Savannah Sparrow.

550. *Ammodramus maritimus* (WILS.) [202.]

Seaside Sparrow.

Hab. Salt marshes of the Atlantic States, from Massachusetts south to those bordering Gulf of Mexico.

The Seaside Finch is a common species in the salt marshes of the Atlantic coast from Connecticut southward. Its nests and eggs are identical with those of the last species, only, as already stated, in speaking of the Sharp-tailed species the nest is more bulky. It is carefully concealed in clumps of salt grass and quite neatly built of grasses, lined with fine material. In exceptional instances the nests have been found "arched over."

The largest set of eggs Mr. Shick ever found on the New Jersey coast was seven, but the usual numbers are four or five—five being the more common. Their ground-color is greenish or brownish-white, thickly speckled with umber-brown, and are not with certainty distinguishable from those of the last species. The sizes of a set of five eggs taken by Mr. Shick at Sea Isle City, New Jersey, May 21, 1887, are as follows: .70 x .56, .75 x .56, .74 x .55, .73 x .55, .71 x .54. A set of four in Mr. Norris' cabinet: .78 x .61, .81 x .62, .79 x .61, .80 x .56.

552. *Chondestes grammacus* (SAY.) [204.]

Lark Sparrow.

Hab. Mississippi Valley, west to the Plains, east to Ohio, north to Michigan and south to Eastern Texas, Louisiana, etc.; accidental near the Atlantic coast.

Throughout the Mississippi Valley the Lark Finch is found breed-

ing more or less abundantly in all suitable places, from Eastern Texas and Louisiana on the south to Iowa and Southern Michigan on the north. Its favorite summer resorts are prairie lands, clover and stubble-fields, neglected and sparsely wooded pastures and fields bordered with low trees. Breeds in May, June and July according to locality; sometimes two and three broods are reared. It is one of the sweetest songsters among our Sparrows. Its song is uttered in a hurried manner, "in one continuous gush of silvery notes, and accompanied by a metallic *tremolo*." Several birds may be seen running in the grass with lowered heads like quails, from which manner, in some places they receive the name of "Quail-heads," and again they are given the name of "Road-birds" from their habit of running along road-sides and feeding in roads. Mr. Singley states that in Texas the Lark Finch often repairs old nests of the Mockingbird and Orchard Oriole with a lining of grass, horse hairs etc., and Mr. Davis informs me that he has found its eggs in the nest of the Scissor-tailed Flycatcher. The nest, however, is usually placed on the ground, sometimes in trees or bushes. When on the ground it is generally sunken in a hollow, concealed by tufts of grass or clover and it is hard to find, for the bird, like the Bobolink, has the habit of running some distance from the nest before taking wing. The composition varies according to the vegetable growth of the locality in which it is built; usually grasses, clover and weed stems make up the structure.

The eggs are three to five in number, commonly four; they are pure white or they have a faint bluish or brownish tinge, speckled and marked with zig-zag, straight and wavy lines, of very dark brown and black, chiefly at the larger end, like the eggs of the Baltimore Oriole, and in exceptional cases it is impossible to differentiate the eggs of the two species. The size of those of the Lark Sparrow vary from .76 to .89 in length by .59 to .68 in breadth.

552 *a.* *Chondestes grammacus strigatus* (SWAINS.) [204 *a.*]

Western Lark Sparrow.

Hab. Western United States from the Great Plains and Central Texas south into Mexico.

This sub-species is common in Western United States, from the Plains and Western Texas (where it breeds abundantly) to the Pacific. In California it nests on the ground, in live oaks, sycamores orange and lemon trees. Eggs .80 x .60.

553. *Zonotrichia querula* (NUTT.) [205.]

Harris's Sparrow.

Hab. More eastern Great Plains and more western prairies, breeding from Eastern Montana (?) north to Manitoba; south; in winter, to Texas, and east to Iowa, Western Illinois, Missouri, etc. (Ridgway.)

Eggs of this species are described by Prof. Ridgway as follows:





TRAIL'S FLYCATCHER AND NEST.

(*Empidonax fusillus trailii*.)

“(Identification somewhat doubtful), .87 x .68, buffy whitish, thickly speckled with burnt-umber, slightly mixed with purplish-gray.”*

554. *Zonotrichia leucophrys* (FORST.) [206.]

White-crowned Sparrow.

Hab. North America at large; breeds northward; south in winter, to the Southern United States, and south to Mexico.

This is probably the most beautiful of our Sparrows. It winters in the Gulf States and southward, migrating northward in spring to its breeding grounds, which are in the higher mountain ranges of Western United States—Sierra Nevada and Rocky Mountains, and eastward north of the Great Lakes, to Newfoundland and Labrador. In Colorado this species nests in June and July, often raising two broods in a season. The bird is chiefly a ground builder but nests are found in bushes a few feet above the ground. A set of four eggs in Mr. Norris' cabinet was taken July 1, 1883, near Hancock, Colorado. The nest was on the ground and was composed of grasses, etc. The eggs are pale greenish-blue, speckled and spotted with bay; the markings are much heavier and thicker near the larger ends; sizes, .87 x .64, .89 x .63, .91 x .65, .93 x .58. The number of eggs is stated to be four or five, and are said to resemble those of the Song Sparrow, except in size, some being heavily and distinctly marked.

555. *Zonotrichia intermedia* RIDGW. [207a.]

Intermediate Sparrow.

Hab. Western North America from the Rocky Mountain region to the Pacific; in winter, south throughout Western United States into Mexico.

The Intermediate White-crowned Sparrow breeds in the far north—throughout Alaska (except the coast east and south of the peninsula) and eastward through the Mackenzie River region. The eggs are described as similar to those of *Z. leucophrys* but the more cinnamon or rusty colored style predominates.

556. *Zonotrichia gambeli* (NUTT.) [207.]

Gambel's Sparrow.

Hab. Pacific coast region from Southern California north to British Columbia.

In California Gambel's White-crowned Sparrow breeds near the coast, building the nest in trees, bushes, and in thick clumps of weeds. It is quite bulky, and composed externally of weed stems, and find dry grasses on the inside. Three to five eggs are laid, commonly three or four. Mr. Norris has a set of four collected by A. M. Ingersoll near Alameda, California, April 2, 1885. Their ground color is pale greenish-blue, spotted and splashed with liver-brown; sizes, .88 x .65, .88 x .64, .88 x .64, .94 x .68. A set of four taken by the same collector exhibits the following measurements: .88 x .63, .90 x .66, .94 x .67, .88 x

* Manual N. A. Birds, p. 415.

.64. Another set containing five eggs, from Motalla, Oregon, taken June 24, 1884, measure: .83 x .64, .85 x .64, .84 x .65, .86 x .64, .86 x .65. In all of these eggs the markings are heavier at the larger ends.

557. *Zonotrichia coronata* (PALL.) [208.]

Golden-crowned Sparrow.

Hab. Pacific coast region, from Southern California to Alaska; migrates east irregularly to Rocky Mountains, casually to Wisconsin.

The Golden-crowned Sparrow is stated to breed in Northern California and northward to Alaska. Its nesting is similar to that of *gambeli* and the eggs are "colored like the more distinctly spotted of *Z. leucophrys*."

558. *Zonotrichia albicollis* (GMEL.) [209.]

White-throated Sparrow.

Hab. Eastern North America, breeding from Northern United States northward; west to the Plains, casually to Utah.

A large, handsome sparrow, very similar to the White-crowned species. Breeds in Northern Michigan, New York, and Northern New England northward; winters from the Middle States southward. In the greater portion of Eastern United States it is seen only during the migrations, or in the winter.

In suitable places throughout the three Northern New England States the White-throated Sparrow is a rather common breeder, nesting in June. The nest is built on the ground, or, in exceptional cases, in bushes, and among the branches of fallen trees. It may be built in a clearing near the edge of woods, and frequently in damp places, often under a fallen branch, or at the foot of a sappling, and but slightly concealed. It is more bulky than a Song Sparrow's nest, built of weed-stems, grasses, etc. The eggs are four or five in number and, like those of the Song Sparrow, are subject to great variation in size and coloration, as are exhibited by a large series of specimens in Mr. Norris' cabinet. The ground-color is of a pale greenish-blue, spotted, sprinkled and clouded with cinnamon-rufous and bay. Some eggs are of a pale cinnamon, sprinkled and clouded with burnt umber. A set of four, containing eggs of the smallest sizes, exhibits the following dimensions: .80 x .63, .79 x .61, .80 x .61, .81 x .62; another containing the largest eggs gives the following measurements: .88 x .64, .87 x .63, .86 x .64, .89 x .64.

559. *Spizella monticola* (GMEL.) [210, *part.*]

Tree Sparrow.

Hab. Eastern North America, west to the Plains, breeding far northward; south in winter through Eastern United States.

This bird looks very much like the Chipping Sparrow but it has a dusky spot in the center of the chest. In Eastern United States it

is found only in winter—hence the name, Winter Chip-bird, by which it is known. It breeds in Labrador and the region about Hudson Bay. The nest is described as being placed in trees or bushes or on the ground, and composed of grasses, mud, fine rootlets and hair. The eggs have no similarity to those of the Chipping Sparrow. They are light green, flecked with minute markings of reddish-brown, distributed with great regularity over the surface but so sparsely as to leave the ground distinctly visible; on the whole somewhat resembling the eggs of the Song Sparrow, with endless variations; four or five in number; size, .80 x .60.

559a. *Spizella monticola ochracea* BREWST. [210, *part.*]

Western Tree Sparrow.

Hab. Western North America, breeding in Alaska, wintering in Western United States, south to Texas, New Mexico and Arizona.

A paler colored Tree Sparrow which breeds in Alaska and southward to an undetermined latitude. Nesting and eggs in nowise peculiar. Eggs, .78 x .55.

560. *Spizella socialis* (WILS.) [211.]

Chipping Sparrow.

Hab. Eastern North America, north to Great Slave Lake, west to the Plains, south into Eastern Mexico.

Nearly everybody knows this familiar little bird as Chippy, Chip-bird, or Hair-bird. The latter name is given it from the fact that its nest is for the most part, composed of horse hair, with a slight foundation of fine grass and vegetable fibres. The breeding season is usually in May and June. The nest is built anywhere in bushes, hedges, trees of any size, and almost in any situation. In exceptional cases it has been found built on the ground. The same pair of birds if unmolested will return and breed in the vicinity of their former nest year after year. Three or four eggs are laid, rarely five, bluish-green, sparsely spotted with blackish-brown and purplish, sometimes in a circle about the larger end. Ten eggs selected on account of their sizes measure: .60 x .50, .62 x .52, .65 x .52, .69 x .50, .69 x .53, .71 x .54, .70¹ x .50, .72 x .51, .67 x .50, .73 x .52.

560a. *Spizella socialis arizonæ* COUES. [211a.]

Western Chipping Sparrow.

Hab. Western North America, east to Rocky Mountains; in summer north to beyond 60°; south in winter to southern Mexico.

Eggs in my collection of this paler western sub-species do not seem to differ essentially from those of *socialis*. Nesting the same.

561. *Spizella pallida* (SWAINS.) [212.]

Clay-colored Sparrow.

Hab. Interior regions of North America from Northern Illinois, Wisconsin and Iowa, west to base of Rocky Mountains, north to the Saskatchewan, south to Texas and New Mexico; in winter to Lower California and Mexico.

The Clay-colored Sparrow breeds from Northern Illinois and

Central Iowa northward. Mr. J. W. Preston found it breeding in Winnebago county, Iowa, in June, 1885, and in the summers of 1885 and 1886 in Becker county, Minnesota. The bird is an abundant breeder in Western Manitoba. The nesting season is usually in May and June. Mr. Preston found the bird frequenting the edges of brush and the borders of timber. The nests were placed on the ground; one, however, was built in the branches of a low hazel. The materials used in the construction of the nests were fine, round grasses and blades, with a lining of horse hairs. The eggs were three to five in number, commonly three or four, the latter number predominating. They are similar in color to those of the Chipping Sparrow, *S. socialis*, and average about the same in size, .65 x .50. Mr. Norris has a set of four taken near Detroit, Minnesota, June 4, 1886; their sizes are: .64 x .47, .64 x .47, .62 x .47, .64 x .48; in these specimens the markings are fainter than are those of *S. socialis*. As many as six eggs are said to be laid by this species.

562. *Spizella breweri* CASS [213.]

Brewer's Sparrow.

Hab. Western United States, from the Rocky Mountains to the Pacific, south in winter to Northwestern Mexico.

This bird has very much the appearance of the Clay-colored Sparrow, but is paler and duller, all the markings being indistinct. It is found from the Pacific coast to the Rocky Mountains, and from the northern portion of California to the Rio Grande and Mexico, and is especially abundant in Arizona and New Mexico. It inhabits almost exclusively open fields and bushy plains. The nests are placed in bushes, usually the sage, a few feet from the ground. It is composed of dry grasses, rootlets, and lined with hair. The eggs are generally four in number. A series of the eggs of this species in Mr. Norris' cabinet, collected near Fort Klamath, Oregon, resemble in size and coloration the eggs of the Chipping Sparrow, but as a rule the markings are larger, and of a more reddish tint than in those of the former species. A set of three containing the smallest eggs exhibit the following sizes: .62 x .48, .63 x .48, .63 x .49; one of four with larger eggs, .69 x .53, .64 x .52, .67 x .53, .64 x .52

563. *Spizella pusilla* (WILS.) [214.]

Field Sparrow.

Hab. Eastern United States and Southern Canada, west to the edge of the Great Plains.

The Field Sparrow is an abundant species in Eastern United States where it may be seen during the summer months frequenting the borders of upland woods, fields and edges of thickets. It sings during the whole day, especially at mid-day when most birds are silent,

and a telegraph wire is a favorite perch while singing. The nest is placed in bushes or upon the ground in a tussock or at the root of a bush in a thicket, frequently in briars along roadsides or upon the ground in pastures, but the birds nearly always (in Ohio at least) during the breeding season, confine themselves to the outskirts of woods with thick undergrowth. The nest is composed of grasses on a foundation of leaves; the lining is of hair. The eggs are commonly four, sometimes three or five. The predominating ground color of the eggs is buffy-white, or clay, while others have a greenish-white ground; the markings are in the form of specks and spots of various shades of brown, which are sometimes so dense at the larger end as to almost wholly obscure the ground color. The eggs rarely measure less than .61 or more than .73 in length, and in breadth .49 or more than .55; the average is .68 x .52. Two or three broods are reared in a season, the nesting time being in May, June and July.

* * *Spizella pusilla arenacea* CHADB.

Western Field Sparrow.

Hab. Great Plains, from Southern Texas north to Wyoming Territory and Nebraska.

A new sub-species inhabiting the Great Plains of Western United States. Nesting and eggs indistinguishable from *S. pusilla*.

565. *Spizella atrigularis* (CAB) [215.]

Black-chinned Sparrow.

Hab. Mexico and southern border of the United States from the Lower Rio Grande Valley to Southern California; Lower California.

The Black-chinned Sparrow is a rather common species in all suitable places from the southern border of the United States southward. It inhabits the border of thickets, grassy fields and low shrubbery. These places are its favorite nesting sites. A set of three eggs in Mr. Norris' cabinet, was taken June 3, 1886, near San Gorgonia Pass, California. The nest was placed in a low bush. The eggs are plain, light greenish-blue, about the color of the eggs of the Bluebird. They measure: .68 x .52, .69 x .53, .69 x .54.

567. *Junco hyemalis* (LINN.) [217.]

Slate-colored Junco.

Hab. North America at large, breeding from the higher portions of the Alleghanies, Northern New York, and Northern New England to Alaska (except the Pacific coast district, or south and east of the peninsula) south in winter to the Gulf States.

Better known as the Black Snowbird, and in most of the United States is oftener seen during the winter months. Breeds in the mountains of Northern Pennsylvania, New York, and New England; is resident throughout the year in Northeastern Ohio, and in Michigan. Mr. McIlwraith gives it as a fairly common resident of Ontario where, in the southern portion, it is known as the "White

Bill." Mr. William L. Kells states that in Ontario, the Slate-colored Junco selects various places for nesting sites, such as the up-turned roots of trees, crevices in banks, under the sides of logs and stumps, a cavity under broken sod, or in the shelter of grass or other vegetation. The nest is made of dry grasses, warmly and smoothly lined with hair. Mr. Kells says the bird generally begins to nest the first week of May, and nests with eggs are found as late as August. The set of eggs is usually four or five in number, of a whitish color, varying to a greenish-white, more or less speckled with reddish-brown, with an average size of .78 x .57. A set of four eggs taken by J. A. Dakin, on May 4, in Onondaga county, New York, measure .75 x .50, .76 x .56, .78 x .57, .80 x .58. A nest of this species was found on the rafters of a barn in Connecticut.

* * *Junco hyemalis carolinensis* BREWST.

Carolina Junco.

Hab. Higher portions of the southern Alleghanies.

According to Mr. Wm. Brewster this new variety of the Black Snowbird differs from *J. hyemalis* in being larger, with lighter, bluer and more uniform coloration, and a horn-colored instead of pinkish-white or yellowish bill. Mr. Brewster found this bird at Highlands and on the Black Mountains of Western North Carolina. He states that it is probable that the birds represent the form which breeds on the mountains of Virginia and Pennsylvania.

Two sets of eggs are in Mr. Brewster's collection taken by Mr. Boynton, at Highlands, respectively June 30 and July 7, 1885. "The eggs are larger than those of *hyemalis* but similar in color and markings." The nests are also larger and composed of coarser material, although both are neatly lined with horse-hair. The one collected July 7 was placed "in a bank by the roadside," a site often chosen by our northern birds, but the other was built in a berry bush, *four feet above the ground*. Both sets of eggs were perfectly fresh, a fact which proves that the bird breeds very irregularly and probably twice at least in the same season.*

Mr. George B. Sennett found this species breeding in the mountains of Western North Carolina. On Roan Mountain the birds were exceedingly abundant at an altitude of 6300 feet. In the latter half of April they were paired and building, and many complete nests were discovered. Fresh-laid eggs and young in all stages were found in July. The nests were found in all sorts of places — in the open fields, among the grass hummocks, along the edge of cow-paths, myrtle tussocks,

*Auk. III, pp. 109 — 110.

under balsams or under the deciduous trees of a lower altitude. Two nests were found in balsam trees three and five feet respectively from the ground.*

567a. *Junco hyemalis oregonus* (TOWNS.) [218.]

Oregon Junco.

Hab. Western North America. Breeds along the Pacific coast region from California northward to Sitka.

Mr. A. W. Anthony notes this as one of the most common birds of Northwestern Oregon, rearing three and often four broods in a season. He states that the birds nest in various locations; in hollows of the ground under low bushes, the nest being built flush with the surface; also in holes among the roots of bushes and trees, and many nests are found under wood-piles. Some were found built on the shelf of a railroad cut, which was screened by a thick curtain of vines. Nesting begins about the last of March, or first of April. The materials of the nests are dry grasses rather loosely put together with a lining of cow-hair. The eggs are usually four, rarely five in number. Several sets in Mr. Norris' collection, on the whole bear a great resemblance to those of *J. hyemalis*. One of four eggs was taken near Salem, Oregon, May 5, 1888. These have a greenish-white ground, speckled and wreathed with vinaceous; their sizes are .77 x .59, .77 x .59, .76 x .60, .78 x .59. A set of three collected June 2, 1888, near Fort Klamath are bluish-white and marked like the first set; sizes: .78 x .57, .79 x .57, .75 x .57. A third set of three taken by Dr. James C. Merrill, U. S. A., near Fort Klamath, contained three eggs like those of the last, and measured .78 x .57, .75 x .57, .78 x .57, respectively.

568. *Junco annectens* BAIRD. [219.]

Pink-sided Junco.

Hab. Rocky Mountain district, from Arizona and New Mexico north to Idaho and Montana.

The Pink-sided Junco is found in the Rocky Mountain region, breeding from Fort Bridger northward. Dr. Merrill found it rather common in the mountains of Montana, at considerable height and among the pines. A nest taken June 13 was at the top of a ridge connecting two peaks, at an elevation of 8000 feet. The nest was under a shelving stone, in a little hollow dug out by the parents; it was rather large and compactly built, composed of coarse, dry grasses, with an inner lining of fine yellow straw and hair of the mountain sheep. The eggs, five in number, were far advanced in incubation and one was broken in blowing. The four remaining specimens measure .81 x .60, .80 x .59, .84 x .60, .83 x .60. They are described as dull yellowish-whitish, spotted and blotched with light reddish-brown and lavender.

* Auk, IV, pp. 242—243.

The spots are scattered over the entire surface of the eggs, but are largest and more numerous at the larger end.

569. *Junco caniceps* (WOODH). [220.]

Gray-headed Junco.

Hab. Rocky Mountain district, from the Black Hills to the Wabash and other Mountains of Utah, south to Mexico and Arizona.

The Gray-headed Snowbird is a common breeder in the mountainous regions of Central Colorado and Utah southward, nesting in June, July and August, raising two, perhaps three broods in a season. Its nest resembles that of *Junco annecteus*, being built on the ground in sheltered positions. The eggs have a difference in ground-color varying from white and pinkish-white to bluish or greenish-white, very faintly dotted (the markings being very minute) over the whole surface but chiefly at the larger end with reddish-brown.

570. *Junco cinereus palliatus* RIDGW. [222, part.]

Arizona Junco.

Hab. Southern Arizona and adjacent portions of Mexico.

This is a common species at the higher altitudes in the mountains of Southern Arizona, where it dwells in the depths of the pine forests. It is generally mated in April, and nests may be found in May and June; these are placed on the ground under bushes, or otherwise sheltered. The eggs are described as being plain greenish-white, unmarked, size, .78 x .60.

570a. *Junco cinereus dorsalis* HENRY. [221.]

Red-backed Junco.

Hab. Mountains of New Mexico and Eastern Arizona.

A common bird in the high mountains of New Mexico, and in the eastern portion of Arizona. July 16, Mr. F. Stephens found a nest of this bird in New Mexico, under a tuft of grass, which contained three perfectly fresh eggs. When blown, they are white, with a slight tinge of green, speckled sparsely all over, except at the smaller ends, with small brownish dots; sizes, .74 x .58, .76 x .62, .77 x .63. Some eggs are marked in the form of a ring around the larger end.

572. *Junco insularis* RIDGW. [223.]

Guadalupe Junco.

Hab. Guadalupe Island, Lower California.

Mr. Bryant found this Snowbird common on Guadalupe Island, inhabiting the palm, pine and cypress groves. The birds mated early, soon after the first of the year, and were incubating by the 26th of January. A nest found March 10, contained four young, hatched but a few days before. It was placed in a depression, flush with the surface of the ground, and concealed by a covering of brush. Full

fledged young were taken March 16; also a nest with three fresh eggs. This nest was placed in the cleft of a pine tree, which grew near the edge of a precipice. It was composed of a few pieces of bark-mass, light-colored dry grass blades, and a tail-feather of a petrel, all surrounding a quantity of grass, lined within with goat-hair. The three eggs which the nest contained, Mr. Bryant says, were probably the second setting, judging from the ragged appearance of the female, indicating previous cares. Their color is a pale greenish-white, marked with fine dots of reddish-brown clustered around the larger end. They measure 19.5×15 , 20×15.5 , 20×16 millimeters.*

573. *Amphispiza bilineata* (CASS.) [224.]

Black-throated Sparrow.

Hab. Southwestern United States—Texas to Lower California—south into Mexico, north in the interior to Nevada, Utah and western portions of Colorado.

The Black-throated Sparrow is an inhabitant of the southwestern portion of the United States from Western Texas to the Pacific. Mr. Wm. Lloyd found it breeding in Western Texas, nesting in the cat-claw or chapparal bushes. Nests were found May 6 and 13, June 12, and July 13 containing fresh eggs, indicating that the bird rears at least two broods in a season. Mr. Scott notes this species as a common resident in the foothill region of the Catalinas and also about Tucson, breeding commonly at both points generally at considerable elevation. At an altitude of 4500 feet in the Catalina region the breeding season begins early in March and continues well into the latter part of the summer. The nests he states are built near the ground in some low bush or cactus, and occasionally on the ground.

The eggs are three to five, three or four being the general complement. Mr. Sennett secured several sets of eggs of this species at Lomita, on the Lower Rio Grande, in April. Mr. Davis informs me that he took two sets of the Black-throated Sparrow's eggs in Eastland county, Texas, in June; one set was far advanced in incubation, the other on the 14th was fresh. Mr. Norris has a set of four eggs of this species taken April 21, 1888, near Fort Clarke, Texas. The nest was in a bush, eighteen inches from the ground, and was composed of dry grass, lined with wool and horse-hairs. The eggs are plain bluish-white, and measure $.71 \times .51$, $.71 \times .51$, $.70 \times .50$, $.70 \times .51$.

574. *Amphispiza belli* (CASS.) [225.]

Bell's Sparrow.

Hab. California, south to Cape St. Lucas.

An abundant bird in all the thickets throughout Southern California. A set of three eggs, in Mr. Norris' cabinet, was taken by A.

* $.77 \times .59$, $.79 \times .61$, $.79 \times .63$.

M. Ingersoll, near San Diego, California, on May 5, 1887. Incubation was commenced. The nest was about three feet above the ground, in a small bush. The eggs are greenish-white, speckled principally at the larger ends with cinnamon: $.73 \times .56$, $.73 \times .55$, $.72 \times .56$

574a. *Amphispiza belli nevadensis* (RIDGW.) [225a.]

Sage Sparrow.

Hab. *Artemisia* Plains of Western United States, north to Idaho, Montana, and Wyoming Territories, east to Colorado and New Mexico, south to interior of Southern California, and Northern Mexico.

This bird abounds in the sage-brush deserts of Nevada, Utah, New Mexico, and Arizona. Nests found near Carson City, Nevada, are described as being artfully concealed, either sunken in the ground or a few inches above it, in the lower branches of a bush; they are composed of sage-brush bark, dry grasses, etc. The eggs are light greenish, marked all over with very fine dots of a reddish-brown, around the larger end a ring of confluent blotches of dark purple and lines of darker brown; almost black; size $.80 \times .60$. Three or four are the usual number deposited.

575. *Peuceea æstivalis* (LICHT.) [226.]

Pine-woods Sparrow.

Hab. Florida and southern portion of Georgia.

The Pine-woods Sparrow is common in some localities of Florida, where it breeds in May and June. In Alachua county, Florida, Mr. Frank M. Chapman states that it is common only in one locality, a high, open, palmetto pinery, where, May 21, 1887, a nest was found with four fresh eggs.

In a letter to Capt. Bendire, Mr. Chapman states that this nest was placed beneath a scrub palmetto, and was constructed almost entirely of fine, dry grasses. It was firmly made, and held well together when lifted from the ground. It was not arched over in any way, which seems to be the peculiarity in the nests of *Peuceea æstivalis bachmanii*. The nest was perfectly round, with the sides of rims everywhere of equal height, and was a symmetrical and well-proportioned structure. Three of the eggs taken by Mr. Chapman are in the National Museum collection, and are described by Capt. Bendire as pure white, slightly glossy, and rounded-oval in shape; sizes, $.71 \times .61$, $.74 \times .61$, $.71 \times .61$.

575a. *Peuceea æstivalis bachmanii* (AUD.) [226a.]

Bachman's Sparrow.

Hab. South Atlantic and Gulf States, and Lower Mississippi Valley, north to North Carolina, Eastern Tennessee, Kentucky, Southern Illinois, and west to middle Northern Texas.

Mr. Arthur T. Wayne informs me that in the region about Charleston, South Carolina, Bachman's Finch breeds in April, May;

June and July, making its nest upon the ground in pine woods. He states that the birds breed in numbers seven miles north of Charleston, but the nests are difficult to find, only a single one having come under his observation. Mr. William Lloyd notes Bachman's Sparrow as a summer visitor in eastern Concho county, Texas, where nests are found from May 20 to June 1.

Capt. Charles E. Bendire describes five nests, and several full sets of eggs of Bachman's Sparrow, which were presented to the National Museum collection by Dr. William C. Avery, of Greensboro, Alabama, in which vicinity they were taken in the months of May and June. Capt. Bendire says: "All the nests of this bird vary totally in structure from those of the other species of the genus *Peucaea*, as far as known to me. They are all distinctly roofed-over or domed, a feature only found in the nest of a closely allied species, *Embernagra rufivirgata*, the Texas Sparrow, which constructs a somewhat similar nest. They are cylindrical in shape, about seven or eight inches long by three inches in height and four and one-half inches wide. The inner cavity is from three to four inches in length, about two inches wide, and one and three-quarters inches high. The rear wall of the nest is about one and three-quarters inches thick, the sides about an inch, and the roof a little over half an inch in thickness. These measurements vary somewhat in different specimens. The nests are all constructed out of dry grasses exclusively, and are lined with fine grass tops only. Some are much more artistically and compactly built than others; the roof projects somewhat over the entrance in all cases." The nest is always placed in a depression of the ground, and the entrance is invariably canted upwards at an angle of about 15°. The entrance to the majority of the nests faced the west.* The nests were found in growths of old-field pines, in patches of pine and plum

*Doubtless the honor of giving the first description of the arched or domed nests of Bachman's Finch, belongs to Mr. T. D. Perry, of Savannah, Georgia. His account was published in "The Young Oologist," for October, 1834, p. 83. As the article sheds some light on other characteristics of the birds, I quote it in full, as follows: "This species, I believe, is somewhat rare and but little known, but this season I had the good fortune to find them breeding quite numerous among the rank grass in old fields. They are somewhat shy in their actions when flushed from the nest, running off a little way, beating the ground with the wings and uttering a slight chirping sound, seeming all the time to be in great distress. They build on the ground in a slight hollow; nest composed of dry grass and roots; nest nearly arched over; they lay four white eggs, one-half inch wide by three-quarters long. The first nest I found was on May 18, incubation far advanced; therefore allowing for time of building, laying of eggs, and advancement of incubation, it stands to reason that they commence to build about the last of April. All the nests that I have ever found (and I found nine (9) this season, in which all except two, had young large enough to fly) have been in the same field, and in nearly every instance have been near a path, leaving little doubt that they are sociable birds, and prefer to breed in company. They do not rise right off the nest, but seem to run through the grass a little way before flying, but by standing still and watching, you will soon see the bird sneaking back, and you will find the nest every time, at least I have found it so. Whether they remain with us the whole year, or only come from farther South to breed, I am at present unable to say."

bushes, on slopes of hills, in open spaces under fallen branches. The birds do not rise off the nest as other birds do when disturbed, but run some distance before taking flight.

Capt. Bendire states that the eggs of Bachman's Sparrow in the National Museum, collected by Dr. Avery, are pure white, but with less gloss than those of *P. aestivalis*, more of a dead white. A set of four nearly fresh eggs taken May 8, gives the following sizes: .72 x .56, .75 x .55, .72 x .55, .71 x .55. A set taken June 23, measures .75 x .57, .75 x .60, .77 x .61, .76 x .61.* Capt. B. F. Goss has a set of four eggs in his collection, taken by Mr. Wayne. These measure .79 x .63, .75 x .63, .75 x .63, .75 x .63.

576-577. *Peucaea mexicana* (LAWR.)

Mexican Sparrow.†

Hab. Valley of the Rio Grande in Texas, Southern New Mexico and Arizona, south in winter to Northern, Central and Western Mexico.

Dr. James C. Merrill, met with this species on the Lower Rio Grande in Texas. He says the bird is found in some abundance on a salt prairie about nine miles from Fort Brown, and it was obtained with difficulty, as it could rarely be flushed from among the tall grass. "A nest, found June 16, 1877, was placed among the roots of a tussock of grass; it was made of blades and stems of grasses, and was rather deep, but so frail that it fell to pieces on removal. The eggs, four in number, were quite fresh. They are unspotted, white, strongly tinged with greenish-blue, and measure .82 x .63." Prof. Ridgway describes the eggs as plain, pure white, size, .72 x .58.

578. *Peucaea cassini* (WOODH.) [228.]

Cassin's Sparrow.

Hab. Southwestern border of United States. Texas to Arizona, and Northern Mexico; north in summer to the Plains of Kansas.

Col. N. S. Goss states that this species is a not uncommon summer resident in Middle and Western Kansas, arriving from the first to the middle of May. Begins laying about the tenth of June. Their favorite resorts and breeding grounds are on the barren plains that are dotted over with low, stunted bushes. Dr. Merrill says Cassin's Sparrow arrives in the region of the Lower Rio Grande in Texas, about the middle of March, and frequents the open chapparal and thick bushes. Nests were found April 28, and May 4 and 22, 1877. They were placed at the foot of small bushes, and scarcely raised above the ground; were composed of dried grasses, lined with finer ones and a few hairs, but were very frail. Thirteen eggs taken from

* For Capt. Bendire's detailed account of the nest and eggs of *Peucaea aestivalis bachmanii* see The Auk, October, 1888, pp. 351-356.

† This includes *P. arizonæ* which, according to Prof. Ridgway, proves to be not separable.

these nests are pure white, and average $.74 \times .57$. Mr. Lloyd found nests of this species in Western Texas in May, that were placed in bushes not higher than a foot from the ground, or in tufts of grasses.

579. *Peucaea carpalis* COUES. [229.]

Rufous-winged Sparrow.

Hab. Southern Arizona.

Capt. Charles E. Bendire. U. S. A., found this species to be a common resident in the vicinity of Tucson, Arizona. The birds were especially abundant on the ridges bordering Rillitto Creek, on the dry, arid cactus-covered plains, near the present site of Camp Lowell. Here he collected many nests with eggs. The nest is usually placed in low bushes, preferably small mesquites, from six inches to five feet from the ground, most frequently about eighteen inches; and no especial attempt is made at concealment. It is firmly fixed to a fork or crotch, and is a compact structure, composed externally of coarse grasses and lined with the fine tops of the mesquite grass, and not unfrequently a few horse hairs, when such are obtainable.

About one-half of the nests found contained one or more eggs of the Dwarf Cowbird. A set of three eggs collected by Capt. Bendire, on August 23, 1872, are in Mr. Norris' collection; they are plain bluish-white, and give the following measurements: $.75 \times .57$, $.78 \times .59$, $.75 \times .58$. The first eggs were found by Capt. Bendire, June 14, but the birds were believed to commence breeding even a month earlier. The number to a set is commonly four or five.

580. *Peucaea ruficeps* (CASS.) [230.]

Rufous-crowned Sparrow.

Hab. California.

The Rufous-crowned Sparrow breeds in various mountainous localities of California, where, however, it is somewhat local in its distribution. Rocky hill-sides, with a sparse growth of stunted bushes, are its favorite resorts. The breeding season is said to begin as early as April. The nest is placed on the ground in a slight hollow, and is exceedingly hard to find, as the sitting female steals silently away under cover of the surrounding vegetation, and if seen at all is likely to be mistaken for a startled mouse. A nest collected July 10, by Mr. Charles A. Allen, on Black Mountain, near Nicasio, California, and described by Mr. William Brewster, is outwardly composed of coarse grass and weed-stocks, lined somewhat scantily with horse hair, very loosely put together. The locality was an open heathy tract on the mountain-side, and the nest was placed on the ground under a bush. This nest contained three pure white eggs; size, $.89 \times .65$.* The eggs are described by others as plain bluish-white.

*Bull. Nutt. Ornith. Club, II, p. 37. See also Vol. IV pp. 47-48

580*a*. *Peucæa ruficeps boucardi* (SCL.) [230*a*.]**Boucard's Sparrow.**

Hab. Mexico and Lower California north to Southern Arizona, New Mexico, and Western Texas.

Mr. W. E. D. Scott found this species a resident in Southern Arizona, up to an altitude of 4000 feet in winter and nearly 10000 feet during the warmer months, but is much more common from the first of February until the middle of October. He states that it does not seek cover in the thick grass to the degree or in the manner so characteristic of its congeners. A nest was found June 15, 1885, well up on a hillside, at an altitude of 4500 feet, on the bare ground near a tussock of grass. The nest was bulky for so small a bird, and loosely put together. It is composed of coarse, dry grasses throughout and there is no attempt at lining with finer material. Contained in this nest were two young just hatched and one egg, apparently fresh, and plain, dead white; size, .83 x .62. Three partly incubated eggs taken July 27 from a similar nest, measure .80 x .58, .82 x .60, .86 x .61. A third nest found by Mr. Scott late in July contained the same number of eggs, which were almost fresh.

580*b*. *Peucæa ruficeps eremœca* BROWN.**Rock Sparrow.**

Hab. Eastern Mexico, north to Central Texas.

Mr. Nathan Clifford Brown described this sub-species from specimens taken by him at Boerne, Texas, in 1879-'80. He states that he always found the bird in rocky localities, usually in close proximity to a creek, but occasionally on barren hills a mile or more from water. It has the same shy, skulking habits which are common to other species of the genus, rarely taking wing on the approach of an intruder so long as rock, bush or weed affords a hiding place.*

Two sets of the eggs of this bird are in Mr. Norris' collection. One was collected June 19, 1884, in Comal county, Texas, the nest being on the ground in a bunch of grass; sizes, .81 x .61, .85 x .62, .81 x .62, .83 x .62. The other set was collected April 4, 1882, in the same region, and the nest was likewise on the ground in a bunch of grass. These eggs measure, .82 x .64, .78 x .64, .73 x .63, .78 x .64. The eggs in both sets are plain bluish-white.

581. *Melospiza fasciata* (GMEL.) [231.]**Song Sparrow.**

Hab. Eastern United States and British Provinces, west to the Plains; breeding chiefly north of 40°, except east of the Alleghanies.

The Song Sparrow in its diverse geographical forms—varying in size, color, and in the relative size of the bill, etc., inhabits the greater

* Bull. Nutt. Ornith. Club, VII, pp. 38-39.

part of the North American continent. The present species is one of the sweetest of songsters and is a familiar bird in Eastern United States, where, east of the Alleghanies, it breeds from South Carolina north into the British Provinces. West of the Alleghanies it breeds chiefly north of 40° latitude, and is resident throughout the year in a large portion of the area in which it breeds. Its nest may be found all through the summer months, two or three broods being reared; if the nest is destroyed or robbed, a fourth or fifth is frequently built, in which eggs are deposited.

It is generally placed on the ground or in low bushes. The materials used in its composition are grasses, weeds and leaves, lined with fine grass stems, roots, and in some cases hair. Nests of this bird have been found built in holes of apple trees, and on the branches six or eight feet from the ground. Again they have been placed by the side of a railroad track where the trains were continually passing. It is very frequently built in honeysuckle and other vines against the sides of houses. Curious places are often selected as nesting sites, such as a horse's skull in a grassy field, or under an old tin pan which has a hole in the top.

The eggs are usually four or five, sometimes six, and rarely seven. So great is the diversity in their coloration and size that they generally serve to represent the eggs of several different species of "ground-birds" in the small boy's collection. They vary from greenish or pinkish-white to light bluish-green, more or less thickly spotted with dark reddish-brown; the ground color and the spots have a diversity of shades; sizes range from .75 to .85 in length by .55 to .60 in breadth.

581a. *Melospiza fasciata fallax* (BAIRD.) [231a, part.]

Desert Song Sparrow.

Hab. Arizona.

A common bird in the lower regions of Arizona, inhabiting the willow thickets and marsh grass near water. Its general habits, nesting and eggs on the whole are said to be indistinguishable from those of *M. fasciata*; three of four eggs being the usual numbers laid.

581b. *Melospiza fasciata montana* HENSH. [231a, part.]

Mountain Song Sparrow.

Hab. Rocky Mountain district — Colorado, Utah, Nevada, Eastern Oregon and Eastern Washington Territory.

There is no essential difference between the nesting and eggs of this Song Sparrow and those of *M. fasciata*.

581c. *Melospiza fasciata heermanni*. (BAIRD.) [231b.]

Heermann's Song Sparrow.

Hab. Interior districts of California including the eastern slope of the Sierra Nevada mountains.

The California Song Sparrow was named in honor of Dr. A. L.

Heermann, who first obtained it in the Tejon Valley. It has been found in California as far north as San Francisco and to the south and southeast to San Diego and the Mohave River. This bird's favorite resorts are on the hillsides, canons and along the banks of streams. The nest is placed in bushes from two to six feet from the ground. Mr. Emerson states that the complement of eggs is generally four. The ground color in the eggs of *heermanni* is generally more bluish than in those of *samuelis* and the markings are heavier and of a darker brown and tend to be more confluent at the larger end than in the eggs of the latter. The egg of this species is also much larger. .87 x .64.

581*d*. *Melospiza fasciata samuelis* (BAIRD.) [231*c*.]

Samuel's Song Sparrow.

Hab. Coast regions of California.

Wherever there are salt marshes along the coast of California, Samuel's Song Sparrow is sure to be found. The bird is especially abundant in the neighborhood of San Francisco. Mr. Emerson informs me that he has found the nest placed on the ground beneath tussocks of grass or in salt weeds and more often in a kind of low shrub that grows on the old sand drifts. Mr. Walter E. Bryant records a nest containing three eggs taken by Mr. Emerson from a round oyster can, which had lodged sideways among some driftwood, in a willow tree. A nest before me taken March 26, near Haywards, California, is composed of coarse, dry grasses and weed stems externally, the inside and lining being made of finer material of the same. Three or four eggs are deposited by this bird; their color is of a bluish-gray, spotted and blotched pretty generally over the surface with reddish-brown. A set of three eggs collected by Mr. Emerson, May 1, gives the following respective sizes: .79 x .63, .75 x .59, .83 x .59; another, .75 x .59, .83 x .59, .75 x .59.

581*e*. *Melospiza fasciata guttata* (NUTT.) [231*d*.]

Rusty Song Sparrow.

Hab. Pacific coast region, from Northern California north to British Columbia.

The Oregon or Rusty Song Sparrow is restricted to the Pacific coast district, breeding from Northern California northward. The eggs are described as being indistinguishable from those of *M. fasciata*, of the Eastern States, averaging the same in size.

582. *Melospiza cinerea* (GMEL.) [232.]

Aleutian Song Sparrow.

Hab. Aleutian Islands, east to Fort Kenai, Alaska.

This is the Cineaeous or Kadiak Song Sparrow of peculiar size, shape and color, and very long, slender bill. It inhabits the Aleutian

Islands, where it nests among the tall grass and in the low shrubbery. Eggs similar to those of *M. fasciata*, but averaging larger, .89x.65.

583. *Melospiza lincolni* (AUD.) [234.]

Lincoln's Sparrow.

Hab. Entire of North America, breeding from the Northern border of the United States northward, and South in higher mountain ranges.

Lincoln's Finch is found throughout North America at large breeding sparingly in the United States from Wisconsin and Northern New York northward, and in the west as far south as the mountains of Southern Colorado. Breeds not uncommonly in the valleys of Oregon. From its habit of skulking through the underbrush and shrubbery of marshes, more like a mouse than a bird, it is seldom seen, and consequently it seems to be little known. Nests on the ground like the Song Sparrow. Mr. Norris has two sets of the eggs of Lincoln's Sparrow taken in Boulder county, Colorado, on June 22, and July 18, respectively. One of the nests was placed in a mossy bank among small swamp bushes, and composed entirely of grasses; the other was built at the base of an aspen tree. The eggs of one set, three in number, are light greenish-white heavily marked, principally at the larger end with chestnut and lavender-gray; sizes .81 x .58, .81 x .59, .82 x .60. The nest taken June 22 is of four eggs; these are light pea-green thickly marked with chestnut and measure, .79 x .58, .76 x .57, .81 x .58, .79 x .57.

584. *Melospiza georgiana* (LATH.) [233.]

Swamp Sparrow.

Hab. Eastern North America, breeding from Northern United States northward; west to the Plains, casually to Utah.

The Swamp Sparrow breeds from the Northern United States northward. On account of its secretive and retiring habits, the bird, its nest and eggs are very apt to escape notice unless perseveringly hunted and purposely looked for. The Swamp Sparrow dwells in the deep recesses of marshy thickets environed with a canopy of tangled foliage, whose treacherous quagmire abounds in a luxuriant growth of wild grasses. In these retreats the bird may exist in abundance and still be considered rare in certain localities where it has been overlooked. Its neat, trim form and tasteful colors render it one of the handsomest smaller Sparrows.

The Swamp Sparrow builds its nest on the ground in low, damp places; in construction and composition it is like that of the Song Sparrow and the eggs of the two species are somewhat similar. Those of *M. georgiana*, however, may generally be distinguished by the peculiarly clouded and indistinct appearance of the markings. The

eggs of *M. fasciata* on the contrary, as a rule have smaller markings and much more distinct ones, while the clouded effect of those of *M. georgiana* is entirely wanting. A series in Mr. Norris' cabinet show great variation in size and coloring, but in only one set is the clouding of the markings wanting. A set of four containing the largest eggs give the following measurements: .80 x .56, .81 x .56, .80 x .57, .80 x .57; another set (five eggs) measure respectively: .72 x .58, .74 x .59, .71 x .57, .73 x .58, .74 x .56.

585. *Passerella iliaca* (MERR.) [235.]

Fox Sparrow.

Hab. Northern North America, breeding north of the United States; in winter south over the whole of the Eastern United States to the Gulf coast.

The Fox-colored Sparrow is one of the largest and finest of its tribe. Breeds from the Gulf of St. Lawrence and Labrador north into Alaska. It is met with in Eastern United States during the spring, fall and in winter.

The Fox Sparrow in its summer home is said to be a charming songster, possessing a clear thrush-like song of exquisite melody, fairly rivaling the warblings of the ablest feathered performers in the sweetness and purity of tone and beauty of expression. Audobon met with it breeding in Labrador, and found its eggs from the middle of June to the 5th of July. It also breeds in Newfoundland. Nests of this species were, according to the reports of Mr. MacFarlane and Mr. Kennicott, found in trees and on the ground in the Arctic regions. Mr. W. H. Dall obtained the eggs on the Yukon river in Alaska, and the birds were very abundant at the mouth of this river in July and also at St. Michael's. Mr. Maynard found this species nesting on the Magdalen Islands. According to these observers the nests are, for the most part, placed on the ground, usually concealed by the drooping branches of evergreens. They are composed of grass and moss, lined with fine grass and feathers. The eggs are four or five, pale bluish-green, speckled, spotted and blotched with reddish-brown, or uniform chocolate-brown; size .93 x .65.

585a. *Passerella iliaca unalaschensis* (GMEL.) [235a.]

Townsend's Sparrow.

Hab. Pacific coast region, from Kadiak south in winter to Southern California.

This bird breeds north of the United States—from British Columbia north to Kadiak and coast Alaska, west to Unalashka Islands. It has been found breeding on Vancouver Island, British Columbia, in May and June, and at St. Michaels, Alaska. In its habits it is said to be shy and retiring, frequenting the tangled thickets and brush-piles. In these its nest is built, commonly a few inches above the ground.

The nest is described as being made of grasses, moss, and vegetable fibres compactly woven together. The eggs, three to five in number, are described as of a greenish or dull brownish-white, spotted and blotched with reddish-brown; size .90 x .66.

585*b*. *Passerella iliaca megarhyncha* (BAIRD) [235*b*.]

Thick-billed Sparrow.

Hab. Mountain ranges of California and Oregon, including eastern slope of the Sierra Nevada.

This species is confined to the restricted area of the mountainous regions of California and Oregon. Its habits are much the same as those of *P. unalaschcensis*, inhabiting the shrubbery of the mountain ravines, where it breeds. It is said to be an exquisite songster, its song resembling in richness and volume that of the Louisiana Water-Thrush. The Thick-billed Sparrow has been found breeding in several places in California and Southeastern Oregon. Mr. L. Belding found it nesting in Calaveras county, California, in June. The nest is said to be built just above the ground, and sometimes at a height of five feet, and always in bushes amongst thickets. The eggs are like those of *P. unalaschcensis* or those of *schistacea*, and average .86 x .64.

585*c*. *Passerella iliaca schistacea* (BAIRD) [235*c*.]†

Slate-colored Sparrow.

Hab. Rocky Mountain region, west across the Great Basin into California and Oregon; east in winter to the Great Plains (Kansas.)

The Slate-colored Sparrow was met with by Prof. Ridgway in Parley's Park among the Wahsatch Mountains, nesting plentifully in the willows and other shrubbery along the streams in the month of June. It was always found in company with the Mountain Song Sparrow, *M. f. montana*, which, in song, it greatly resembles. The nests of the two species were also much alike in manner of construction and situation and the eggs so similar that it required careful observation to identify a nest when one was found.

A set containing three eggs of this species is in Mr. Norris' cabinet which was collected by Captain Charles E. Bendire, at Camp Harney, Oregon, on June 21, 1875. The nest was in a rose thicket, two and a half feet from the ground, close to Rattlesnake Creek. The eggs are of a pale bluish-green, heavily spotted with burnt umber, and measure .83 x .62, .80 x .62, .87 x .63 respectively.

586. *Embernagra rufivirgata* LAWR. [236.]

Texas Sparrow.

Hab. Valley of the Lower Rio Grande in Texas and southward.

Dr. Merrill and Mr. Sennett both note this species as a common resident on the Lower Rio Grande, in Texas, where it frequents the thickets, brush-fences and low shrubbery. Dr. Merrill says: "I have

found the nests with eggs at intervals from May 9 to September 7. These are placed in low bushes, rarely more than three feet from the ground; the nests are rather large, composed of twigs and straws, and lined with finer straws and hairs; they are practically domed, the nests being placed rather obliquely, and the part above the entrance being built out. The eggs are from two to four in number; thirty-two average .88 x .65, the extreme being .97 x .67 and .81 x .61; they are pure white. Two, and probably three broods are raised in a season."

Mr. Sennett obtained on April 10th young birds and a nest containing two eggs about to hatch.

587. *Pipilo erythrophthalmus* (LINN.) [237.]

Towhee.

Hab. Eastern United States, west to Eastern Dakota, Kansas, Texas and Gulf coast.

The Red-eyed Towhee, Chewink, Ground Robin, or Marsh Robin, as it is variously called, has an extended distribution throughout Eastern United States, from Florida and Eastern Texas on the south to the Selkirk Settlements on the northwest, and as far west as the edge of the Great Plains, where it is replaced by other closely allied races. Breeds almost wherever found. It is a spirited bird and spends a great deal of its time on the ground, hopping about among the thick underbrush, frequently uttering its peculiar notes, *tohee, tohee, chewink, chewink*, in quick succession. The shady retreats of woodlands are also favorite resorts of this species.

The nest is generally placed on the ground, at the foot of some bush, or under a fallen log. It is often built on the ground in the midst of deep, damp woods, well hidden in the rank grass. Occasionally, however, this Bunting places its nest in a bush or sapling. Mr. Poling states that he has taken the nest from trees as high up from the ground as seven and a half feet. It is a rude structure of grapevine bark, twigs, weed-stalks, leaves and grasses, lined with finer grasses and rootlets.

The eggs of the Towhee are three or four, rarely five in number. Their ground-color is white, pinkish, or of a faint bluish-white. There is a wide variation in the shapes and sizes of the eggs, likewise in the style and distribution of their markings. In shape they will vary all the way from oblong oval to globular; rounded-oval however, being the characteristic type. They are thickly sprinkled or speckled with light reddish-brown; in some the markings are so bold and sparsely scattered that the eggs resemble very closely those of the Cowbird, Meadow-lark or Cardinal Red-bird. The markings in the eggs of the Towhee, as a general rule, have a constant pinkish cast rarely found in the

eggs of the other species. We have already stated a means of distinguishing the eggs of this species from those of the Cowbird—page 272. Ten eggs measure .89 x .66, .89 x .68, .89 x .68, .90 x .71, .88 x .75, .90 x .73, .94 x .75, .96 x .74, .93 x .72, .96 x .73; average .95 x .72.

587a. *Pipilo erythrophthalmus alleni* COUES [237a.]

White-eyed Towhee.

Hab. Florida, Eastern Georgia and Southern South Carolina.

The Florida or White-eyed Towhee has been found breeding as far north as Beaufort county, South Carolina, by Mr. Walter Hoxie in the months of May and June. Mr. G. Noble, of Savannah, Georgia, informs me that he found the White-eye in that region building chiefly in young pines from three to ten feet above the ground, and that the nest resembles that of the Yellow-breasted Chat. Mr. Hoxie found it nesting in pine trees ranging in height from four to twenty feet above the ground. The nests were made of coarse weeds, pine needles and grass, lined with finer grasses. The complement of eggs varies from two to four, and considerable variation exists in their size and markings. Mr. Norris has several sets of eggs taken near Frogmore, South Carolina. Their ground color is white, thickly speckled with pinkish-vinaceous and pearl-gray. A set of three has one egg which is covered all over with faint yellow specks, giving to the specimen a light yellow-brown appearance; the other two are bluish-white *unmarked*; sizes, .90 x .69, .85 x .70, .82 x .68. Another set of two are of the same light bluish-white tint, unmarked, and offers the following sizes: .85 x .67, .87 x .62. The sizes of a set of three are, 1.00 x .74, .95 x .72, .87 x .70.

588. *Pipilo maculatus arcticus* (SWAINS.) [238.]

Arctic Towhee.

Hab. Plains of the Platte, Upper Missouri, Yellowstone and the Saskatchewan Rivers; west to the base of the Rocky Mountains; south in winter to Kansas, Colorado and Texas.

The Northern or Arctic Towhee Bunting has been found in the valley of the Saskatchewan, where it breeds, and on the high central plains of the Upper Missouri and the Yellowstone and Platte Rivers. An abundant species in the valley of the Great Slave Lake. Dr. Merrill found it in all parts of Montana wherever a stream with bordering underbrush afforded shelter. There is great diversity in the time of laying, or rather in the contents of nests found on about the same dates from the middle of May until late in July, which was attributed more to the great number of nests that must be destroyed by snakes, birds and small mammals, and to the attempt of the parents to raise another brood, than to any other cause. The nests are placed on the ground under some bush, favorite places being growths of cherry bushes often

seen near streams in that region; lower on the plains any growth of shrubbery is selected. The rim of the nest is flush with the level of the ground, the birds scratching the hollow large enough to contain the nest, which is strongly built of bark strips, blades of dry grass, and usually lined with yellow straw. The eggs are four or five, averaging .94 x .69. Their ground color is white, slightly tinged with greenish and covered with dots and small spots of reddish-brown and lavender most numerous at the large end. Some specimens are so densely covered with the markings that the ground color is hardly distinguishable.

588a. *Pipilo maculatus megalonyx* (BAIRD.) [238a.]

Spurred Towhee.

Hab. Rocky Mountain region westward to Southern California, north to Eastern Washington Territory, south into Northern Mexico and Lower California.

The Spurred Towhee Bunting is the prevailing form of the Rocky Mountain region — New Mexico, Arizona, etc. Its habits, nesting and eggs are substantially the same as those of *P. erythrophthalmus*. Mr. S. C. Evans found several nests of this bird near Riverside, California, all of which were placed in low bushes. Mr. Emerson says the bird is quite common in the vicinity of Haywards, California, where he has taken many of its nests. The nearest he has ever found the nest to the ground was about ten inches. In other localities, however, it is known to nest on the ground like the Eastern Towhee.

The sizes of a set of four eggs in Mr. Norris' collection taken near Haywards, California, are .89 x .70, .90 x .70, .89 x .70, .88 x .71. They have a light pinkish-white ground, thickly sprinkled and speckled with vinaceous-cinnamon.

588b. *Pipilo maculatus oregonus* (BELL.) [238b.]

Oregon Towhee.

Hab. Pacific coast from British Columbia south to Santa Cruz, California.

The Oregon Ground Robin is a resident in the western portion of the State of Oregon and Washington Territory during the summer, and in the more northern portions of California. The nest is placed on the ground and sometimes in bushes, on stumps, etc., like the Eastern Towhee's. It is composed of grasses and leaves, with a lining of fine grass. Mr. Anthony mentions finding an egg of this species in the nest of the Rusty Song Sparrow. In color and general appearance the eggs resemble those of *P. erythrophthalmus*. A set of four in Mr. Norris' collection, taken May 12, are pinkish-white, thickly speckled with vinaceous and vinaceous-cinnamon; their sizes: .94 x .70, .92 x .69, .91 x .71, .95 x .71.

590. *Pipilo chlorurus* (TOWNS.) [239.]**Green-tailed Towhee.**

Hab. Whole of Middle Province, including the Rocky Mountains and eastern slope of the Sierra Nevada—Eastern Oregon, Idaho, Montana, etc., south into Mexico.

Called the Chestnut-crowned Towhee, Green-tailed Bunting and Blanding's Finch. It is generally distributed in all bushy places throughout the fertile mountain portions of the interior. It is a characteristic bird of the eastern slope of the Sierra Nevada, and a summer resident arriving at Virginia City about the middle or latter part of April. Habits, nesting, eggs and song generic. The late Mr. Snowdon Howland informed me that he collected a set of four eggs of this species in Wyoming, in 1871. The nest was placed on the ground in the usual manner of that of the Eastern Towhee, and was composed of dry grasses and shreds of bark. It was well concealed by a dense growth of low bushes.

The eggs are white with a bluish tint, profusely dotted with pinkish-drab, sometimes so thickly distributed as to give the egg the appearance of a uniform color, or as an unspotted pinkish-drab, and again more sparsely diffused; nearly oval in shape; four eggs is the usual complement; the sizes of a set of five eggs in Mr. Norris' cabinet, taken May 28, near Fort Klamath, Oregon, are .85 x .64, .90 x .68, .85 x .65, .90 x .68, .84 x .64; their average size is .85 x .65.

591. *Pipilo fuscus mesoleucus* (BAIRD) [240.]**Canon Towhee.**

Hab. New Mexico and Arizona, south into Mexico.

The Canon Bunting or Brown Towhee is abundantly distributed throughout the warmer portions of New Mexico and Arizona, from the valley of the Rio Grande to that of the Colorado. It prefers the dense bushes of the valleys, and like the Eastern Red-eye, passes the greater part of its time on the ground, in thickets, generally in company with the Arctic Towhee. The nest is usually built in shrubs and low mesquite trees.

A set of three eggs of this species in Mr. Norris' cabinet was collected July 14, 1882, by Captain Charles E. Bendire, near Riletto Creek, Arizona. The nest was placed in a mesquite bush about four feet from the ground. The eggs are white, spotted, principally at the larger ends, with black and vandyke brown. There are also a few spots of lavender-gray, and quite a number of the curious pen lines common to the eggs of the oriole. They measure .90 x .71, .89 x .66, .94 x .71.

591*a*. *Pipilo fuscus albigula* (BAIRD) [240*a*.]**Saint Lucas Towhee.**

Hab. Lower California.

The White-throated Brown Towhee is a common species at Cape St. Lucas where it breeds abundantly, placing the nest usually in thickets, a few feet from the ground and often on the ground, in a slight hollow. It is composed of wiry grasses, a few leaves, and fine, slender roots.

The eggs are usually four in number, pale greenish-white or very pale greenish-blue, with markings, dots, dashes and lines about the larger end, of a deep dark shade of purplish-brown, so dark as sometimes to be undistinguishable from black; average size .91 x .65.

591*b*. *Pipilo fuscus crissalis* (VIG.) [240*b*.]**Californian Towhee.**

Hab. California.

An abundant bird in California and known as the California Brown Towhee, Crissal Towhee Bunting and Canon Finch. Mr. A. M. Shields states that in Southern California this species is a constant companion of the Californian Thrasher, frequenting the dense beds of chapparal and the scrub bushes which line the mountain canons. The bird nests early in April, and fresh eggs may be found until the middle of May. The nest complement is generally four, often five, sometimes only three. The situation of the nest according to Mr. Shields is quite variable, sometimes it is placed on the ground, occasionally in crevices of vine-covered rocks, in hollow trunks of trees, etc., but the favorite nesting place is a thick, scrubby bush from three to five feet above the ground. Prof. Evermann found young birds as early as April 3 in Ventura county. The nest in that region is usually built in a sage, greasewood, or cactus, one to five feet from the ground. Occasionally, however, it is placed in live oaks, ten to fifteen feet up, and composed of twigs, bark and grass, lined with rootlets.

A large series of the eggs of this species is before me. In their general appearance they resemble the eggs of the Red-winged Black-bird, being of a blue, spotted and blotched with varying shades of dark and light purple, in some the color is not distinguishable from black, except in a strong light. The markings are chiefly or wholly at the larger ends and sometimes in the shape of scrawls and daubs. Ten eggs measure .87 x .72, .90 x .73, .92 x .71, .92 x .73, .94 x .74, .95 x .70, .95 x .73, .97 x .73, .99 x .71, .99 x .73.

592. *Pipilo aberti* BAIRD [241.]**Abert's Towhee.**

Hab. Arizona and New Mexico north into Southern Utah and Colorado.

This very large and long-tailed species, known as the Gray Tow-

hee is abundant in all suitable localities of Arizona and New Mexico. One of the most abundant birds throughout the valleys of the Gila and Colorado Rivers. Its favorite resorts are the dense chapparal thickets along streams. Said to be a very shy species keeping close within its retreats upon the approach of an intruder. The nest is rather loose and bulky, usually built in bushes near the ground and again in trees. Mr. Stephens found one in a bunch of mistletoe at a height of at least thirty feet. The nest is made of strips of bark, twigs and leaves, with finer lining of the same materials. The eggs are three or four in number and look exactly like those of the California Towhee — pale greenish-blue or bluish-white, speckled, spotted and scratched about the larger end, sometimes sparsely over the whole surface with dark brown. Average size 1.00 x .74. A set of three eggs in my cabinet taken by Dr. Chas. Carter, U. S. A., in Pinal county, Arizona, on April 21, 1885, exhibits the following sizes: 1.01 x .75, 1.02 x .75, 1.00 x .74.

593. *Cardinalis cardinalis* (LINN.) [242.]

Cardinal.

Hab. Eastern United States; west to Kansas, Nebraska; south to Texas and Florida; north to the Middle States; rare in New York, casual in Connecticut, accidental in Massachusetts; represented by varieties in the Southwest.

Commonly called Redbird or Cardinal Grosbeak, and by some Virginia Nightingale or Virginia Cardinal. It is not migratory but resident nearly wherever found, and is distributed throughout the eastern part of United States from the latitude of Ohio southward. The nest of this species is placed in a variety of situations, usually from three to ten feet above the ground in a dense thicket, which is its favorite nesting site. I have found the nest placed on the top rail of a fence in the midst of a clump of brambles. The late Dr. Wheaton mentions finding it "on the top of vine-covered stumps, in wild-goose-berry bushes overhanging water, and in brush-heaps," and says: "I have found the nest ready for the reception of eggs as early as April 17." Mr. Davis states that in Cook county, Texas, the Redbird begins nesting before the trees put forth their leaves. The nest is a loose, frail structure, made of slender twigs, strips of grape-vine bark, stems, grass, and a few leaves, lined with fine rootlets and grasses, sometimes with horse hair.

There is a great diversity in the coloration and general appearance in a large series of the eggs of this species. The ground-color in the various specimens runs from white through bluish or greenish-white to that of a brownish tint. The markings are reddish-brown, lavender and gray of various shades and are pretty generally scattered over the entire surface; in other specimens they tend to cluster more thick-

ly about or on the larger ends; some are so thickly marked as to almost conceal the ground color. The specimens generally considered handsomest are those with a greenish-white ground heavily and distinctly blotched with reddish-brown. Some of the smaller eggs and more finely dotted ones resemble very closely those of the Cowbird. Mr. Ragsdale has an egg of this species with a large chocolate blotch covering one-fourth of the shell. The eggs are three or four in number.* Eight eggs (two nests of four each) measure respectively: .98 x .71, .93 x .73, 1.02 x .74, 1.06 x .74, .98 x .77, 1.00 x .75, 1.01 x .76, 1.03 x .78; average 1.00 x .73.

593a. *Cardinalis cardinalis superbus* RIDGW. [242a, part.]

Arizona Cardinal.

Hab. Southern Arizona and Western Mexico.

A bird very similar to *C. cardinalis* but larger, and the female more richly colored. Its general habits, nesting and eggs are not in anywise distinguishable from those of the Redbird of the Eastern States.

593b. *Cardinalis cardinalis igneus* (BAIRD) [242a, part.]

Saint Lucas Cardinal.

Hab. Lower California.

A smaller bird than *superbus* and called Fiery-red Cardinal as its specific name implies, but is not any more so than *cardinalis*, and its habits, nests and eggs are the same.

594. *Pyrrhuloxia sinuata* BONAP. [243.]

Texan Cardinal.

Hab. Northern Mexico and Southern border of the United States—Southern Texas to Southern Arizona and Lower California.

This species inhabits the southern border of the United States. Dr. Merrill found it abundant at times at Fort Brown, Texas, particularly in the Spring. Mr. Sennett records it as tolerably common at Lomita and a probable resident in that region along with the Virginia Cardinal, and breeds fully as early. There is, he states, little difference between the habits of the two Cardinals, but the Texan is more confined to open and exposed situations near settlements, and is always shy and suspicious, so that he rarely came upon it unawares. The nest is built in thickets, sometimes in isolated bushes, from three to eight feet above the ground, and is said to be very much smaller than that of *C. cardinalis*. The materials are bark strips, twigs and dry grasses. The eggs are usually four in number and resemble those of *C. cardinalis* except in their smaller size, averaging .92 x .73. Mr. G. B. Benners gives the sizes of a set of four eggs which he obtained on the Rio Grande, April 21, as follows: .87 x .69, .87 x .69, .89 x .69, .85 x .67.

* There are a number of sets of five eggs of the Cardinal on record but I have never seen or taken that number from a single nest myself. Sets of three are as common as those of four.

595. *Habia ludoviciana* (LINN.) [244.]**Rose-breasted Grosbeak.**

Hab. Eastern United States, north to Southern Canada; south in winter through Cuba, Central and into Northern South America.

The rose-bud of our North American *Oscines*—everywhere noted for its beauty and musical ability. Breeds from the Northern States northward, but it is nowhere an abundant bird. Trees and shrubbery along the banks of streams or the borders of dense woods are its favorite resorts. A bird with a plump, round form, the male with head and neck black, bill whitish, wings and tail white and black, the breast and under wing-coverts rosy or carmine red. The parts which in the male are black, are streaked with blackish and olive-brown in the female, and the under wing-coverts saffron-yellow, and though not so striking in contrast, makes a bird of handsome appearance. The nest is placed in the thick foliage of trees at the edge of woods or on the banks of streams. It is a flat, shallow structure, composed of small twigs, vegetable fibres and grass. Breeds in May and June.

The eggs are three to five in number, the latter being uncommon. They are greenish-blue or bluish-green, more or less spotted over the entire surface with blotches of reddish-brown; the eggs resemble very closely those of the Summer Redbird or Scarlet Tanager; sizes range from .95 to 1.08 in length by .70 to .76 in breadth.

596. *Habia melanocephala* (SWAINS.) [245.]**Black-headed Grosbeak.**

Hab. Western United States, east to the Great Plains, south into Mexico.

This bird occurs from the high Central Plains to the Pacific, and from the northern portions of Washington Territory to the table lands of Mexico. Breeds throughout its United States range. Col. Goss gives it as a quite common summer resident in Middle and Western Kansas; begins laying the last of May. Quite common in California; begins nesting about the first of April—nesting abundantly in the willow and water-mootic copse near Santa Clara River and among the live-oaks along the small streams and creeks. The nests are placed from five to twenty feet from the ground, and composed of a few slender twigs, weeds, grasses and rootlets.

Two to four eggs are laid. Sets of this bird's eggs are in my cabinet collected at San Gorgonia Pass, California, by Mr. Herron, in May and June. These are of two and three eggs each. They were taken from nests in oak bushes five to ten feet from the ground. They are bluish-green sprinkled and blotched with reddish and rusty-brown; some heavily spotted while others are sparingly marked, the spots in all cases become more numerous towards the larger ends. Eight eggs

measure .84 x .65, .86 x .67, .87 x .65, .92 x .69, .94 x .68, .90 x .67, 1.07 x .72, 1.07 x .73.

597. *Guiraca cærulea* (LINN.) [246.]

Blue Grosbeak.

Hab. Southern half of the United States from the Atlantic to the Pacific; north regularly, but very locally, to Pennsylvania, Kentucky, etc., rarely north to Massachusetts and even Maine; south in winter throughout Mexico, Central America, Cuba, Yucatan, etc.*

The Blue Grosbeak is nowhere an abundant bird but breeds throughout its United States range, occasionally as far north as Southern Pennsylvania. In the west it is found in New Mexico, Arizona, Colorado and California. Col. Goss gives it as a summer resident of Kansas, being quite common in the Middle and Western portion; begins laying the last of May. A common species in the South Atlantic and Gulf States. Mr. C. S. Brimley says that in the vicinity of Raleigh, North Carolina, it begins nesting about the first part of June. Mr. G. Noble, of Savannah, Georgia, has sent me a typical nest which he collected in June.

In Texas, it commences to build about the first part of May. Mr. T. D. Perry has found eggs as early as May 10, slightly incubated, near Savannah, Georgia, and fresh eggs as late as July 7, indicating that at least two broods are reared in a season. The nest resembles that of the Painted Bunting, being invariably lined with fine brown rootlets, and occasionally it contains some horse hair. A characteristic of the Blue Grosbeak's nest is that it almost invariably contains pieces of snake-skin in the outer material of withered leaves and plants. It is placed in blackberry bushes along road-sides and on the border of woods. Mr. J. A. Singley, of Giddings, Texas, says that in Lee county a favorite nesting place is in the vicinity of houses where the first growth of timber has been cut down and a growth of low thick bushes replaces it. He says he has taken the nest in peach, apple, hickory and post-oak trees, ranging from fifteen to thirty feet. Mr. E. C. Davis states that in Cooke county, Texas, this species usually nests in alder bushes in swampy places.

The eggs are three or four in number, plain light blue, and when exposed to light a little while, fade into dull white; oval in shape and average .84 x .66. On the 24th of May, 1887, Mr. Perry found a nest containing four spotted eggs of this species. They were distinctly marked with dots and spots of chestnut and subdued lilac. One of the eggs was accidentally broken; the remaining three measure .87 x .63, .82 x .62, .82 x .62 respectively.

* Within this habitat is also included the Western form of the Blue Grosbeak, *G. cærulea eurhyncha* Coues, inhabiting Southwestern United States, north to Colorado, California, etc., south throughout Mexico.

598. *Passerina cyanea* (LINN.) [248.]**Indigo Bunting.**

Hab. United States and Southern British Provinces; west to the Great Plains; south in winter to Veragua.

The Indigo Bluebird or Indigo Painted Bunting is quite an abundant bird in various parts of the United States from the valley of the Missouri to the Atlantic, and from Florida to New Brunswick. The male of this species is of an intense indigo-blue color, and the female plain grayish-brown. Breeds throughout its United States range. The nest is built in a bush or low shrubby tree, generally in an upright crotch; it is composed of weed stalks, twigs and coarse grass, and lined with finer material of the same. It is on the whole an inartistic nest for a bird of gay plumage. The eggs are four in number, white, with a bluish or greenish tinge, unspotted or rarely thinly dotted with brown; average size .75 x .53. Sometimes the eggs of this species are pure white unmarked.

599. *Passerina amœna* (SAY.) [249.]**Lazuli Bunting.**

Hab. Western United States from the Great Plains to the Pacific; south in winter to Western Mexico.

The Lazuli Painted Finch is common in Colorado, Arizona, and very abundant in California; in fact it is generally distributed throughout the west, and along the Pacific Coast is found as far north as Puget Sound during the summer. It replaces the Indigo Bunting from the Plains to the Pacific and is found in all suitable localities. The nest is usually built in a bush or in the lower limbs of trees, a few feet from the ground. It is composed of fine strips of bark, small twigs, grasses, and is lined with hair.

The eggs are usually four in number, light bluish-green which readily fades when exposed to light; they resemble very closely the eggs of the Bluebird; some specimens are not distinguishable with certainty; average size, .75 x .58. Sets of these eggs are in my cabinet collected by Mr. R. B. Herron at San Gorgonia Pass, California, between May 4 and June 13, 1883. The sizes of two sets, four eggs each are .76 x .55, .77 x .55, .74 x .58, .74 x .56; .74 x .53, .75 x .59, .78 x .55, .79 x .56. A set of four taken June 10 gives the following dimensions: .81 x .62, .83 x .64, .79 x .62, .83 x .64.

600. *Passerina versicolor* (BONAP.) [250.]**Varied Bunting.**

Hab. Lower Rio Grande Valley in Texas, southward into Eastern Mexico.

This bird is called Purple Painted Finch, Western Nonpareil, Prusiano. It inhabits the region of the Lower Rio Grande in Texas south into Eastern Mexico. Habits and nesting like those of *P. amœna*. Eggs dull bluish-white; size .75 x .57.

601. *Passerina ciris* (LINN.) [251.]**Painted Bunting.**

Hab. Southern Atlantic and Gulf States, north to North Carolina and Southern Illinois, south in winter to Panama.

Called Nonpareil, Painted Finch and "Mexican Canary." In Mexico and in some of the Southern States it is a favorite cage-bird. The male is a bird of handsome variegated plumage—blue, green, vermilion-red, yellowish-green, etc., and the female plain olive-green. A common species in the South Atlantic and Gulf States, nesting in May, June and July, often rearing two broods in a season. In Georgia, Mr. Perry states that he has found nests as early as April 7 and as late as July 20 with eggs. A nest before me collected by Mr. G. Noble, of Savannah, Georgia, is composed of leaves, bark strips, twigs, rootlets and fine grasses. It is on the whole a neat, compact structure. The nest is sometimes lined with horse hairs. It is built in the smallest bushes, in saplings and also in the tallest trees. Mr. Perry has found two or three nests in a single tree, and one nest built upon another, with eggs in the cavities of both.

The eggs are four or five in number, dull pearly-white or bluish, speckled and blotched with reddish-brown particularly at the larger end; average size .79 x .60. Four eggs measure .76 x .57, .75 x .55, .80 x .60, .80 x .57.

602. *Sporophila morelleti sharpei* LAWR. [252.]**Sharpe's Seed-eater.***

Hab. Lower Rio Grande Valley in Texas, and adjacent parts of Mexico.

This curious little Sparrow is found in the Rio Grande Valley in Southern Texas and adjacent portions of Mexico. Dr. Merrill states that it is not uncommon in the vicinity of Fort Brown. The birds were usually seen in patches of briars and low bushes at no great distance from water, and were very tame. During the breeding season the male has a very sprightly song much resembling that of the Indigo Bunting, but sweeter. At least two pairs built within the Fort during the season of 1877. One of the nests, found early in May, was in a bush about three feet from the ground; it was not pensive; placed between three upright twigs, composed entirely of a peculiar yellow root. This was destroyed by a violent storm before the eggs were deposited. A second nest found May 25, placed in a young ebony-bush, four feet from the ground, was deserted immediately after completion. It was a delicate structure supported at the rim and beneath by twigs, and built of very fine, dry grass, with a few horse hairs. Unfortunately no eggs were obtained. The eggs we believe remain at the present time unknown.

* *Sporophila morelleti* (Bonap.), Morellet's Seed-eater in A. O. Check List.

603. *Euetheia bicolor* (LINN.) [253.]**Grassquit.**

Hab. Bahamas; accidental or casual in Southern Florida.

This is the Black-faced Grassquit which is common in various islands of the Bahama group. It appears to be accidental in Florida. Said to construct a large domed-shaped nest with a lateral entrance. It is built in bushes and low shrubbery.

Eggs three to five, white or greenish-white, speckled with reddish; average size .65 x .50. Mr. Norris has two sets in his collection. One of three was taken near Fort Nassau, on one of the Bahamas. The nest was made of dried grasses. The eggs are white, speckled and spotted, principally at the larger end, with walnut-brown and lavender-gray; sizes .68 x .51, .69 x .52, .67 x .54. The other set consisting of two eggs, was collected in the same locality, on March 30, 1884. They are white, sprinkled and speckled with lavender-gray and cinnamon; they measure .71 x .52, .69 x .52.

604. *Spiza americana* (GMEI.) [254.]**Dickcissel.**

Hab. Eastern United States (chiefly west of the Alleghanies) to the Rocky Mountains, north to Massachusetts, New York, Wisconsin, Minnesota, etc., south in winter to Northern South America.

Known as the Black-throated Bunting, "Little Field Lark," and "Judas-bird." In general appearance it looks like the European House Sparrow, *P. domesticus*, averaging a trifle larger. The favorite resorts of the Black-throated Bunting are pastures with a sparse growth of stunted bushes and clover fields. In these places its unmusical, monotonous song may be heard throughout the day during the breeding season. Its song is uttered from a tall weed, stump or fence-stake and is a very pleasing ditty when its sound is heard coming far over grain fields and meadows in the blaze of the noon-day sun, when all is hushed and most other birds have retired to shadier places.

The nest of the Black-throated Bunting is built on the ground, in trees and in bushes. In Central Ohio I have never found the nest in any other position than on the ground under the shelter of a tuft of grass or bush. In Western Illinois, Mr. Poling states that they are placed in the tall grass or in clover fields. Mr. L. Jones informs me that in Iowa the nest may be found almost anywhere, not above twenty feet in trees and bushes, or on the ground in prairie lands. Nesting is begun in May, and the second nests are built in July or August. The materials are leaves, grasses, rootlets, corn husks and weed stems; the lining is of fine grasses, and often horse hair. On the whole the nest of this species is a compact structure.

The eggs are four or five in number, almost exactly like those of

the Blue bird; average size .80 x .60. Ten eggs measure .76 x .60, .76 x .62, .77 x .60, .79 x .62, .79 x .59, .80 x .62, .81 x .60, .80 x .59, .75 x .56, .82 x .59.

605. *Calamospiza melanocorys* STEJN. [256.]

Lark Bunting.

Hab. Plains of Dakota and Middle Kansas west to the Rocky Mountains, northward to or beyond the United States, south in winter to Texas, New Mexico, Arizona, Lower California and Northern New Mexico; occasional west of the Rocky Mountains. Accidental in Massachusetts.

A bird of the plains—a summer resident in Middle and Western Kansas, breeding from thence northward to or beyond the United States boundary. The bird is said to utter the most delightful songs, and its warbles are described as similar to those of the Bobolink and the soft cadence of the Skylark. The nest is placed on the ground, sometimes sunken even with the surface, and beneath the shelter of a bush or tuft of grass. It is composed of fine stems, grasses, and lined with finer grasses and vegetable down.

The eggs are four or five in number, light blue, and measure .85 x .65. Mr. Norris has a set of four collected by Capt. Chas. E. Bendire, near Fort Custer, July 2, 1885. These measure .84 x .65, .84 x .67, .84 x .65, .84 x .66.

606. *Euphonia elegantissima* (BONAP.) [160.]

Blue-headed Euphonia.

Hab. Eastern Mexico, Central America, south to Veragua, Southern Texas. (Giraud.)

This Tanager of variegated plumage is admitted to our fauna on the above authority and it doubtless does occur over the Mexican boundary. Its eggs are described as creamy-white, with a few scattered spots and blotches of two shades of brown, principally at the larger end.

607. *Piranga ludoviciana* (WILS.) [162.]

Louisiana Tanager.

Hab. Western United States, from the Plains to the Pacific, north to British Columbia, south in winter to Guatemala.

Throughout the evergreen forests from Oregon and Montana southward to Southern California and Arizona this Tanager is a common species, breeding in suitable localities, wherever found. It is called crimson-headed and Western Tanager. The nesting season is in April, May, June and July, according to locality. The nest is a thin, saucer-shaped structure, made of bark strips and grass stems, placed on the horizontal branches of trees, preferredly evergreens and usually in the lower branches. The eggs are three to five in number, of a clear, light bluish-green, finely and rather sparsely sprinkled chiefly at the larger end with clove-brown. The eggs are of a brighter bluish tint and the markings are more speck-like than those of the Scarlet Tanager or Summer Tanager. The average size is .95 x .65.



BALTIMORE ORIOLE AND NEST.

(*Icterus galbula.*)

A set of three in Mr. Norris' cabinet taken in Larimer county, Colorado, measure .97 x .69, .92 x .68, .91 x .64.

608. *Piranga erythromelas* VIEILL [161.]

Scarlet Tanager.

Hab. Eastern United States, north to Southern Canada, west to the Great Plains, south in winter to the West Indies, Central America and Northern South America.

The male Scarlet Tanager is one of the most brilliant and striking of all our birds. From its black wings resembling pockets it is frequently called "Pocket-bird." The female is plain olive-green. Breeds as far north as Southern Canada and west to Eastern Kansas, south to South Carolina and Texas. It inhabits woodlands and is particularly fond of swampy places. The breeding season begins in the latter part of May. The nest is generally found in low, thick woods, or in the skirting of tangled thickets; very often, also, in an orchard, on the horizontal limb of some low tree or sapling. The nest is usually very flat, loosely constructed of twigs, fine bark strips; lined with rootlets and fine inner bark.

The eggs are three to five in number, commonly four, and of a greenish-blue, speckled, spotted and blotched with rufous-brown, more or less confluent, in some chiefly at the larger end. The markings have a reddish tint while those of the Summer Redbird, *P. rubra*, are more of a brownish hue. Ten eggs measure respectively .89 x .60, .89 x .62, .92 x .64, .94 x .62, 1.00 x .64, .98 x .65, 1.00 x .65, .95 x .64, .94 x .62, .97 x .63; average size .96 x .65.

609. *Piranga hepatica* SWAINS. [163.]

Hepatic Tanager.

Hab. Southern Arizona and New Mexico, southward.

Mr. W. E. D. Scott gives this species as a summer resident in the oak region of the Catalina Mountains of Southern Arizona, at an altitude of 5000 feet, breeding late in the season, from May 6 to 9. A nest found July 12 containing three young was built on the outer branch of a live oak and was entirely similar to that of the Scarlet Tanager. No reliable description of the eggs are at hand. The male of this species is of a dull red color, females and young males greenish-yellow.

610. *Piranga rubra* (LINN.) [164.]

Summer Tanager.

Hab. Eastern United States west to the edge of the Plains; north regularly to about 40°—New Jersey, Central Ohio, Illinois, etc., casually north to Connecticut and Ontario, accidentally to Nova Scotia, wintering in Cuba, Central America and Northern South America.

The Summer Redbird or Rose Tanager breeds nearly throughout its United States range. The adult male is a plain vermilion red; the plumage of the female is olive. In habits this species resembles

the Scarlet Tanager but is not so retiring, frequenting open groves and often visiting towns and cities. According to Col. N. S. Goss it is a common summer resident in Eastern Kansas where it begins laying about the 20th of May. The nesting season of this bird extends to the latter part of July, but varies with the degrees of latitude and season.

The nest is composed chiefly of bark-strips and leaves interwoven with various vegetable substances. The structure is usually built on a horizontal or drooping branch, near its extremity, and situated at the edge of a grove near the roadside. All the nests of this species which I have seen collected in Ohio, are very thin and frail structures; so thin that the eggs may usually be seen from below. A nest sent me from Lee county, Texas, by Mr. J. A. Singley, is compactly built of a cottony weed, a few stems of Spanish moss, and lined with fine grass stems and a few catkins. Mr. L. O. Pindar states that nests of this species in Kentucky are compactly built but not very thickly lined.

The eggs are bright, light emerald green, spotted, dotted and blotched with various shades of lilac, brownish-purple and dark brown; they cannot, with certainty, be distinguished from the eggs of the Scarlet Tanager, but the brown tint in the markings predominate. Ten specimens offer as great variation in their sizes as do those of *P. erythromelas*, and average about the same, .94 x .64.

610a. *Piranga rubra cooperi* RIDGW. [164a.]

Cooper's Tanager.

Hab. Arizona, New Mexico, north to (Denver) Colorado south to Western Mexico.

According to Mr. Scott this sub-species is a common migrant and summer resident about Tucson, Riverside, Florence, and at Mineral Creek and in the San Pedro Valley of Southern Arizona. They seem to be more rare than either of the other species of the Tanager in the oak region of the Catalinas, where a few breed. The eggs are described as being not distinguishable from those of *P. rubra*.

611. *Progne subis* (LINN.) [152.]

Purple Martin.

Hab. Whole of temperate North America, south in winter to Mexico and farther.

The Martin, conspicuous for its striking color and screaming, crackling noise, breeds throughout its United States range. It originally built in hollow trees, and some of the "old fogies" do yet, but those who find suitable nesting places in eaves and cornices of buildings or in boxes prepared for their use, are thus bred to American ideas and never return to their old log cabins in the air. This jolly fellow who puts life into the quiet streets of country towns, and large cities

also, by his noise and activity, constructs a nest out of anything that is handy—leaves, twigs, straws, bits of string, rags and paper.

Commonly four or five eggs are laid, rarely six. They are pure, glossy white, oval-oblong, pointed at one end, and average .98 x .73. Six specimens measure .94 x .69, .95 x .70, .95 x .69, .98 x .75, 1.00 x .75, .99 x .69.

612. *Petrochelidon lunifrons* (SAY.) [153.]

Cliff Swallow.

Hab. North America in general; in winter south to Central and portions of South America.

The "Republicans," as they are sometimes called, or Eave Swallows, are known to occur and breed throughout the whole of North America. As the name implies, and as almost every one knows, this bird fixes its queer bottle-shaped nest to the perpendicular faces of rocks and hard embankments, also on the walls of houses and under shelter of the eaves. The nests are not always retort or flask-shaped, some have no necks, and the degree of perfection in style depends upon circumstances. They are made entirely of mud, tempered by the bill of the bird and are well lined with straw, wool and feathers. The birds are always found in colonies during the breeding season, which extends all through the summer months.

The eggs are white, marked with dots, blotches and points of reddish-brown, chiefly about the larger end; they are less elongated than those of the Barn Swallow, but the markings of the two are hardly distinguishable. The eggs of the Cliff Swallow average a trifle larger; they are four to five and sometimes six in number; .82 x .56.

613. *Chelidon erythrogaster* (BODD.) [154.]

Barn Swallow.

Hab. Whole of North America; south in winter to Central America, West Indies, and various portions of South America.

Nearly everyone knows this beautiful, deeply forked-tailed Swallow which builds its nest in barns and under the eaves of other out-buildings. The female bird of this species, however, does not possess as deeply a forked tail as is common in the male bird. The nest is a bowl-shaped structure, entirely open above, composed of pellets of mud, mixed with straws, and warmly lined with soft feathers. It is attached by one side to the rafters within barns, on the sides of caves, etc. From three to five or six eggs are deposited; they are white, marked with spots and blotches of bright reddish-brown, chiefly at the larger end. The eggs appear rather narrow for their length; sizes range from .68 to .78 in length by .50 to .56 broad; average size, .75 x .55.

614. *Tachycineta bicolor* (VIEILL) [155.]**Tree Swallow.**

Hab. Whole of North America in summer; wintering from Southern Florida, Cuba, and Gulf coast to Guatemala.

This is the White-bellied Swallow, which breeds in all suitable localities throughout its North American range. The nesting season is in May, June, and July. Its favorite resorts are in the vicinity of ponds, marshes, and rivers, and even in its migrations it is seldom seen far away from running water. In these places lofty, leafless tree-trunks are its nesting sites—in the old excavations of woodpeckers, natural cavities, etc. Sometimes it nests in cliffs or buildings. In the Eastern States this bird frequently nests in bird-boxes. Mr. C. S. Shick, of Sea Isle City, New Jersey, says that a pair had taken possession of a box which he had put up in his yard. The materials used in nest-building are grasses and straw, thickly lined with feathers. Mr. Walter E. Bryant found a nest of this bird under the projecting and decayed deck of a lumber lighter, moored at Oakland (Cal.) harbor. From four to seven, and occasionally nine, pure white eggs are laid. The average size of ten eggs is .75 x .53.

Mr. Edson A. McMillan informs me that he took from a single nest in regular succession no less than five sets, each containing five eggs. This was in the Adirondack Mountain region, beginning with set No. 1 the first part of June.

615. *Tachycineta thalassina* (SWAINS.) [156.]**Violet-green Swallow.**

Hab. Western United States, from the Rocky Mountains to the Pacific; south in winter to Guatemala.

This lovely Swallow is common from the Central Plains of the United States to the Pacific coast. It breeds abundantly in California, Oregon, and Washington Territory. The most characteristic Swallow of the pine regions of Arizona, and is also found in considerable abundance in Colorado, nesting in all suitable localities, and, like the Eave Swallow, usually in colonies. It nests in knot-holes of oak and other deciduous trees and in the deserted excavations of woodpeckers, and more recently it has been found breeding under the eaves of houses, like the Cliff Swallow. The nest is made of dry grasses, lined with a thick mass of feathers. This species has also been found nesting in holes in banks. Four or five pure white eggs are laid; average size, .74 x .52. Mr. Norris has a set of five eggs taken in Marion county, Oregon, June 7. The eggs measure .74 x .52, .78 x .52, .75 x .52, .77 x .52, .76 x .53.

616. *Clivicola riparia* (LINN.) [157.]**Bank Swallow.**

Hab. Northern Hemisphere in general; in America, south in winter to Northern South America.

The Bank Swallow, or Sand Martin, found throughout Europe, is also equally common throughout North America, and breeds in the greater part of its range. The holes in which this bird nests are excavated by the bird in the perpendicular face of sand or gravel banks; the depth ranges from two to four feet. The termination is usually somewhat enlarged and the bottom is thinly covered with a few twigs, grasses, and feathers. In suitable localities immense numbers will occupy a large bank and so perforate it with holes as to present the appearance of a huge honeycomb alive with bees. From four to six, rarely seven, pure white eggs are deposited, with an average size of .72 x .50; five specimens measure .68 x .49, .71 x .52, .72 x .49, .73 x .51, .72 x .52. Average size .71 x .50.

617. *Stelgidopteryx serripennis* (AUD.) [158.]**Rough-winged Swallow.**

Hab. United States, from Atlantic to Pacific, and adjoining British Provinces (rare). Rare in New England, except in Connecticut.

This species and the Bank Swallow are often confounded. The Rough-winged, however, is larger, has a more labored flight, lacks the pure white of under parts, and the pectorial collar is incomplete and obscured. The hooklets of the wings of the present species are only fully developed in adult birds. The Rough-winged Swallow breeds throughout most of its United States range, nesting in the crevices of stone walls and arches over bridges, sometimes in a chink in the boarding of a building; almost invariably over running water. The nesting season is in May and June. The nest is simply constructed of grasses, straws, and lined with a few feathers. The eggs are four to seven in number, pure white, and closely resemble those of the Bank Swallow, but the shells are more tender, and they average a trifle larger, .75 x .53.

618. *Ampelis garrulus* LINN. [150.]**Bohemian Wax-wing.**

Hab. Northern portions of the Northern Hemisphere. In America, south regularly to the Northern tier of States, and in the Rocky Mountains to Colorado; irregularly or casually to about 35° (Pennsylvania, Ohio, Indiana, Illinois, Kansas, New Mexico, and Arizona).

The Bohemian Wax-wing looks like the Cedar-bird, but is much larger. It is a restless, roving species, and its visits in the Northern States are uncertain. Breeds in high latitudes, and in the West down to the United States border in the Rocky Mountains. Its nest has been found by Mr. Kennicott on the Yukon, and by Mr. McFarlane in the Anderson River region. Its nesting is substantially the same as that of the Cedar Wax-wing. Captain B. F. Goss has a set of four eggs of this

species which was taken in Labrador, June 18, 1885. Their color is bluish-white, spotted with lilac, and very dark brown, being like those of the Cedar-bird, but are larger; sizes, .99 x .70, .98 x .70, 1.05 x .69, 1.06 x .70. Mr. Norris has a set of three Bohemian Wax-wing's eggs taken in Lapland, June 20, 1875. These are exactly like large eggs of *A. cedrorum*, and measure .91 x .69, .93 x .68, .89 x .68.

619. *Ampelis cedrorum* (VIEILL.) [151.]

Cedar Wax-wing.

Hab. North America in general, from the Fur Countries southward. In winter south to Guatemala and West Indies.

The Cherry-bird, Cedar-bird, Southern, or Carolina Wax-wing, is found throughout North America, as far as the wooded country extends, and breeds from Florida to the Red River country. It goes in flocks nearly the entire year. The usual position of the nest of these species is in a cedar bush or orchard tree, and it is often placed in a sycamore, the distance varying from four to eighteen feet from the ground. It is sometimes a very handsome structure, being rather bulky, and made of bark, leaves, roots, twigs, weeds, paper, rags, and twine, lined with finer grasses, hair, and wool. The nesting time is late—June, July, and August.

The eggs range from three to five in a set, average .84 x .61, and are from a light slate to a deep shade of stone-color, tinged with olive, marked with blotches and spots of a dark brown and purple, almost black. A set of four eggs taken by E. H. Huffman in Franklin county, Ohio, August 19, 1888, is before me. The eggs offer the following dimensions: .93 x .63, .85 x .65, .92 x .66, .94 x .65. These seem to be uncommonly large; a common size is .85 x .60.

620. *Phainopepla nitens* (SWAINS.) [26.]

Phainopepla.

Hab. Northern Mexico and contiguous border of United States, from Western Texas to Southern California.

A singular bird, known as the Shining Fly-snapper, or Black-crested Fly-catcher. It inhabits the southern portion of Western United States—abundant in Western Texas, Southern New Mexico, Arizona, and California. Its resorts are regions of low shrubbery and wooded land in the vicinity of water. According to Mr. W. E. D. Scott, this bird has a peculiar, bell-like, whistling note that is very musical.

The breeding season is in May and June. The nest is built in trees of various kinds, oftener perhaps in oaks and mesquites, ranging in height from eight to twenty-five feet above ground. It is a flat, loosely made affair, and the curious, light-colored vegetable sub-

stances — twigs, stems, mosses, and soft, downy or cottony fibres — seem to harmonize well with the odd coloration of the eggs. These are two or three in number. The majority of the nests found by Mr. Scott in Pima county, Arizona, contained three eggs, while a large series of nests, with eggs, collected at San Gorgonia Pass, California, by Mr. Herron, during the months of May and June, 1883, were of two eggs each. They are of a yellowish or light or dull gray, thickly speckled (some grotesquely marked) with a neutral tint, dark brown, and blackish. Ten eggs measure, .84 x .64, .87 x .63, .88 x .69, .89 x .69, .90 x .70, .90 x .69, .91 x .70, .91 x .67, .90 x .63, .91 x .69.

621. *Lanius borealis* (VIEILL.) [148.]

Northern Shrike.

Hab. Northern North America; south in winter to the Potomac, Ohio Valleys, Kansas, Colorado, Nevada, California, and Arizona.

The Shrikes are birds of a cruel, reckless, quarrelsome nature — rapacious and carnivorous, feeding on grasshoppers and other insects, together with lizards, small birds, and quadrupeds which they are able to overpower. They often boldly attack cage-birds, even in the presence of their owners. Their most noted trait is that of impaling small birds, mice, and other prey on thorns and sharp twigs. In the breeding season the Great Northern Shrike, or Butcher-bird, is found throughout the whole of North America, north of United States. It is said to breed in Maine and it probably does in other New England States. It inhabits woodland and thicket, and is often found in upland fields. When insect food becomes scarce this species frequently visits cities in pursuit of the European House Sparrow.

The nest is a rather rude, bulky affair, made of twigs, grass, and stems, matted together and lined with down and feathers. It is usually built in thorny trees, bushes, or hedges, and often no attempt is made at concealment. The eggs are four to six in number, dull whitish or greenish-gray, marked and spotted with obscure purple, light brown, or olive; average size, 1.08 x .79.

622. *Lanius ludovicianus* LINN. [149.]

Loggerhead Shrike.

Hab. More southern portions of Eastern United States; north regularly to Southern Illinois, Central Ohio, and Virginia; irregularly to Vermont, etc.

This form of Shrike inhabits the more southeastern portions of Eastern United States. Dr. Coues says, in its typical manifestation it is characteristic of the South Atlantic States; but specimens more like *ludovicianus* than *excubitorides* occur north to New England and west to Ohio.* It is a common resident in Central and

* Key to N. A. Birds, p. 338.

Southern Ohio. Its habits are essentially the same as those of the Northern Shrike and is not less savage and blood-thirsty. The construction of the nest is begun in Ohio as early as the middle of April, and frequently at this time the birds are sitting on the full complement of eggs. The nesting season, however, is in the month of June, and a second brood is reared some weeks later. The full complement of eggs is six. The nest is built in hedges, scrubby, isolated little trees in cultivated fields, thorn trees growing along streams or roadsides; thickets along railroads are favorite resorts, and the telegraph wire is their favorite perch. The nest is large, loose, and bulky, composed of weed-stems, grasses, corn-stalks, rootlets, paper, wool, and chicken feathers (the latter being the lining, it is often very thick), the feathers concealing the eggs from view.

The eggs are identical with those of *borealis*, but average smaller, .97 x .73. Eleven eggs measure, .91 x .72, .92 x .70, .92 x .73, .95 x .76, .98 x .79, 1.00 x .78, .99 x .77, 1.02 x .80, 1.00 x .82, .96 x .79, .98 x .72.

622a. *Lanius ludovicianus excubitorides* (SWAINS.) [149a.]

White-rumped Shrike.

Hab. Central region of North America, from the Saskatchewan country southward, over table-lands of Mexico; west to Lower California, Arizona, Nevada, Utah, etc.; eastward across the Plains to the Middle and New England States. Rare or local east of the Alleghanies.

More recent investigations develop the fact that this bird, once described as a western form, has extended its range eastward, north of that of *ludovicianus*. It breeds nearly throughout its entire range. In Western Manitoba, according to Mr. Thompson, it is abundant all over from May to September. Col. N. S. Goss records it as a common summer resident of Kansas; begins laying early in May. Mr. Scott notes it as rather common throughout the year about Tucson, Arizona. In the Catalinas, at an altitude of 3700 feet, he found a nest of this species containing five eggs almost ready to hatch, April 1, 1885. Breeds as far north as Northern New York and Northern New England. This is the common breeding form in the northern portion of Ohio, where also occasionally well-marked individuals of *ludovicianus* are taken. Prof. Evermann states that until recently this bird was a very rare resident of Carroll county, Indiana, becoming more common since 1882.* This bird builds a nest and lays eggs in every particular like the Loggerhead, and its general traits are the same. A large series of eggs from Cuyahoga and Huron counties, Ohio, do not exhibit any difference whatever.

* * *Lanius ludovicianus gambeli* RIDGW. [149a, part.]

California Shrike.

Hab. Coast of California.

Mr. A. M. Shields states that this new variety of Shrike is well

* Birds of Carroll county, Indiana. By Barton W. Evermann: *The Auk*, Vol. V, 344-351; VI, 22-30.

known in Los Angeles county, from its frequent appearance in the orchards and gardens, and from its favorite pastime of pulling off the heads of canaries, wherever a cage is hung in the open air. My friend, Mr. Arnold Boyle, states that in the region about Banning, California, this bird feeds largely on lizards, which it often impales on thorns and leaves them sticking there. The nest is usually built in some scrubby tree—this being like the structure made by *ludovicianus* or *excubitorides*.

Five sets of eggs in my cabinet, from Banning, San Gorgonia Pass, California, do not differ at all from those of the Loggerhead and White-rumped Shrikes. They exhibit the same variations in size and coloration.

[623.] *Vireo altiloquus barbatulus* (CAB.) [137.]

Black-whiskered Vireo.

Hab. Cuba, Bahamas, and casually to Southern Florida.

This bird, which is common to Cuba and the Bahamas, is entitled to a place in our avifauna on account of its occasional occurrence in Southern Florida; it has several times been taken in the region of Charlotte Harbor. From the supposed resemblance of its notes, it is called Whip-tom-kelly. The bird looks very much like the Red-eyed Vireo, but has a longer bill and other characters which distinguish it. Like other Vireos, the Long-billed Greenlet builds a beautiful, pensile, cup-like nest, which is attached by the brim and suspended from forked twigs in trees and bushes, ranging in height from five to twenty feet. The materials used in its construction are dry grasses, shreds of bark, cotton, lichens, and spider's web; the lining being soft, cotton-like fibres. The walls of the structure are not only very thick but neatly and firmly interwoven.

The eggs are three or four in number, white, with a pinkish hue, speckled and spotted, chiefly at the larger end, with reddish-brown. The average size is .78 x .55.

624. *Vireo olivaceus* (LINN.) [135.]

Red-eyed Vireo.

Hab. Eastern North America, as far north as Hudson Bay, etc.; west to the Rocky Mountain region; south in winter through Eastern Mexico and Central America to Northern South America.

The Red-eyed Greenlet is a common species in Eastern United States, where it breeds abundantly in the months of May and June. It frequents woodland and is especially fond of sycamore groves along streams. A tireless, joyful songster, singing throughout the day nearly all summer long. Its voice is often the only sound heard in the woods in sultry summer days. Compared with the song of the Warbling Vireo, it is shorter, louder, and more vigorous. The nest of this species is

built in the horizontal branches of trees, usually from five to twenty-five feet above the ground, sometimes much higher. Like other nests of the birds of this family, it is pensive—a beautiful little well woven, pendulous cup, its rim being attached to a horizontal fork of a branch in the thick foliage. It is made of vegetable fibres, strips of pliable bark, etc., lined with fine, round grasses, sometimes mingled with horse hairs and bits of newspapers. On two occasions I have found the nest containing two or three eggs before the frame-work was nearly completed—in fact the nests in both cases were not ready for the reception of the eggs, and were finally completed by the female with material carried by the male bird.

Three or four eggs are generally laid, rarely five, pure white, sparsely sprinkled with fine, dark reddish-brown dots, chiefly at the larger end. Ten eggs measure .82 x .56, .80 x .56, .82 x .58, .84 x .59, .85 x .58, .87 x .54, .87 x .56, .85 x .53, .86 x .53, .88 x .54. The average size of these ten specimens is .85 x .56.

626. *Vireo philadelphicus* (CASS.) [138.]

Philadelphia Vireo.

Hab. Eastern portion of North America, north to Hudson Bay; south in Winter to Guatemala and Costa Rica, etc.

This is apparently not a very common bird, wherever found in Eastern United States. From its close resemblance to the Warbling Vireo, the bird is doubtless often confounded with that species. In portions of the Mississippi Valley it appears to be more common than in the Eastern States, occurring regularly and in considerable numbers during the spring and fall migrations. In Ohio it is not a very common spring and fall migrant in May and September.

From the best information at hand, the Philadelphia or Brotherly-love Vireo breeds chiefly north of the United States. Mr. Ernest E. Thompson found a nest of this species containing four eggs near Duck Mountain, Manitoba, June 9, 1884. These were probably the first authentic eggs of this species on record. The nest was hung from a forked twig, about eight feet from the ground, in a willow which was scant of foliage, as it grew in the shade of a poplar grove. The nest was pensive, as usual with the genus, formed of grass and birch bark. The eggs presented no obvious difference from those of the Red-eyed Vireo. The eggs were accidentally destroyed before they were measured.*

627. *Vireo gilvus* (VIEILL.) [139, 139a.]

Warbling Vireo.

Hab. North America in general, from the Fur Countries; south in winter to Mexico.

The Warbling Vireo, in its two forms, inhabits North America in

* Auk, II, 305-306.

general and is abundant. The form, *V. g. swainsoni*, which is described as the smaller, with slenderer bill, etc., occurs in Western United States. Every collector is doubtless familiar with the incessant, mellow warblings of this Greenlet, as it rambles through the foliage of trees in open woodland, in parks, and in those along the banks of streams. In these places it diligently searches the under sides of leaves and branches for insect life, "in that near-sighted way peculiar to the tribe." It is one of the most stoical of birds, and seems never surprised at anything; even at the loud report of a gun, with the shot rattling about it in the branches, and, if uninjured, it will stand for a moment unconcerned, or move along, peering on every side amongst the foliage, warbling its tender, liquid strains.

The nest of this species is like that of the Red-eyed Vireo—a strong, durable, basket-like fabric, made of bark strips, and fine grasses on the inside. It is suspended by the brim in slender, horizontal forks of branches, usually at a greater height than the nest of the Red-eye. The nesting time is in May and June.

The eggs are spotted, frequently blotched at the larger end with brown and reddish-brown on a clear white ground—sometimes over the surface will be found small specks of reddish-brown. The complement of eggs is three or four; size, .70 to .77 in length by about .55 in breadth. Seven eggs, taken in Ohio, measure .70 x .51, .73 x .50, .74 x .53, .75 x .52, .72 x .55, .74 x .55, .77 x .53; four from California, .72 x .50, .72 x .53, .70 x .53, .73 x .51.

628. *Vireo flavifrons* VIEILL. [140.]

Yellow-throated Vireo.

Hab. Eastern United States, west to the Great Plains; south in winter to Costa Rica.

The Yellow-throated Greenlet is common in the woodlands of Eastern United States. Mr. McIlwraith gives it as a summer resident of Southern Ontario, but is by no means common. Col. N. S. Goss records it as a quite common summer resident of Kansas; begins laying about the 20th of May. He states that the bird inhabits the timber away from settlements. In the Eastern States it is found frequenting and nesting in the orchards and gardens, as well as in wooded country. It is a common summer resident in Ohio, especially the northern portion. It frequents secluded woods and the banks of ravines and streams, and appears to be partial to oak forests.

The nest of this species is pensile, like those of other Vireos, but the architectural taste and skill displayed in its building is perhaps superior to any of the family. It is composed of strips of thin bark, grasses, etc. The outside of the structure is beautifully adorned with

lichens, which are held in place by caterpillar's silk. Its size is between three and three and a half inches wide, and nearly as deep. It is built in the fork of a horizontal branch, from five to fifteen and sometimes thirty feet above the ground.

The eggs vary from three to five in number, four being a common set. They are easily distinguished from those of the Redeye and Warbling Greenlets by their roseate hue, and are generally more heavily marked, having the same family resemblance, speckled and spotted with rosy and chestnut-brown, chiefly at the larger end. A set of four, taken in Franklin county, Ohio, June 2, 1885, measure .82 x .60, .80 x .61, .83 x .58, .79 x .58.

Mr. Norris has three sets of eggs of this species that have a decided pinkish-buff tinge. One of three, collected near Oxford, Mississippi, April 30, 1885, exhibits the following measurements: .83 x .57, .75 x .54, .76 x .56. Another, of four eggs, from the same locality, taken May 12; their sizes are, .78 x .58, .78 x .58, .79 x .58, .78 x .59. The third set was taken by the well-known oologist, "J. M. W." (C. L. Rawson), near Norwich, Connecticut. It consists of four eggs, and their dimensions are, .80 x .61, .82 x .62, .83 x .63, .80 x .59. These have the heaviest roseate tinge of all.

629. *Vireo solitarius* (WILS.) [141.]

Blue-headed Vireo.

Hab. Eastern North America, north to Fort Simpson (on the Mackenzie River) and Hudson Bay; south in winter to Mexico and Guatemala.

The Blue-headed or Solitary Vireo breeds chiefly north of the United States; quite common in Manitoba. It has been found breeding in Connecticut and Massachusetts and in some of the Middle States. It is probably a summer resident in Northern Ohio. C. M. Jones found it breeding near Eastford, Connecticut, in May and June, building the nests from five to eight feet above ground, in laurel bushes and hemlock trees. Mr. F. W. Andros records a nest taken by F. T. Lincoln, in Bristol county, Massachusetts, May 30, 1887. The birds, according to the above observers, are close sitters—not easily startled from the nest, frequently permitting themselves to be taken with the hand. The nest of the Blue-headed Vireo is similar in construction to others of the family—a handsome, pendant, cup-like fabric, which is suspended by the brim from the forked twigs of a horizontal branch. The materials used are strips of fibrous bark, leaves, fine dry grass, plant-down, the outside being covered with caterpillar's silk, and sometimes ornamented with mosses and lichens.

The eggs, which are three or four in number, resemble those of

some of the larger Vireos. Mr. Norris has a set of four eggs, which was taken in Merrimack county, New Hampshire, May 29, 1884. These are white, with a faint creamy tinge; they are very much pointed at the smaller ends. The markings are in the form of wreaths of chestnut specks around the larger ends. Sizes, .81 x .52, .79 x .51, .80 x .51, .80 x .52.

629a. *Vireo solitarius cassinii* (XANTUS.) [141a.]

Cassin's Vireo.

Hab. Western United States, from the Rocky Mountains to the Pacific.

During the breeding season, which is in May, June, and July, this bird is confined chiefly to the Pacific Coast region. Mr. A. W. Anthony gives it as a common summer resident of Washington county, Oregon, where it frequents the coniferous growth, and is often found in the alders and aspens. He states that it is more common than the Warbling Vireo. Nests were found in oaks and alders. About Fort Klamath, Oregon, Dr. Merrell says that the bird shows a marked predilection for pines and firs, and is also found, but much less frequently, in aspen groves, with *Vireo gilvus swainsoni*. The nests and eggs of this species resemble those of the Warbling Vireo. The eggs measure .80 x .58 Mr. Norris has a set of three eggs of this species in his cabinet that was taken June 10, 1888, near Fort Klamath, Oregon. They are white, sparsely speckled with burnt umber; sizes, .77 x .55, .74 x .55, .83 x .60. The last egg is abnormally large.

629b. *Vireo solitarius plumbeus* (COUES.) 141b.

Plumbeous Vireo.

Hab. Rocky Mountain region of the United States; south in winter into Mexico.

This sub-species is abundant in the Rocky Mountain region of the United States, especially the southern portion, breeding in the pine districts up to an altitude of 9000 feet. In suitable localities in Colorado this Greenlet is a common summer resident; also in the mountainous regions of New Mexico and Arizona. Its nest is built very similar to that of the Solitary Vireo, *V. solitarius*, of the Eastern States, but is usually placed higher, and the eggs are indistinguishable.

* *. *Vireo solitarius alticola* BREWST. [141, part.]

Mountain Solitary Vireo.

Hab. Southern Alleghanies (Western North Carolina, etc.).

According to Mr. William Brewster, this bird differs from *solitarius* proper, in being larger, with a stouter bill, and duller, darker, and more uniform coloring above. Throughout the elevated plateau in the southeastern corner of Macon county, North Carolina, he found this new Vireo to be one of the most abundant forest birds, frequenting exclusively open oak and chestnut woods, mingling its wild, ring-

ing voice with the rich music of the equally numerous Rose-breasted Grosbeaks and Scarlet Tanagers. On the Black Mountains it was very common, ranging from about 4200 feet to the lower edge of the balsams (5000 feet), and inhabiting woods similar to those just described.* Mr. Brewster and Mr. R. B. McLaughlin both simultaneously published accounts of the first nests and eggs of this bird ever taken.†

The nest described by Mr. Brewster contained four perfectly fresh eggs, and was found by Mr. J. S. Cairns, May 27, 1887, on Craggy Mount, Buncombe county, North Carolina. It was in a chestnut, ten feet out from the main trunk and about twenty feet above the ground. The nest is a substantial structure, suspended after the usual Vireo fashion in the forks of a terminal twig. In places the rim is nearly an inch in thickness. The exterior is beautifully diversified with white and purplish-brown sheep's wool, grayish lichens, small strips and fragments of decayed wood, and a few spider's cocoons, bound firmly to or hanging loosely from the frame-work proper, which is composed of coarse grass stalks and strips of bark. The interior lining is fine bleached grasses, stems, and moss. Upon comparing this nest with four New England nests of *V. solitarius*, Mr. Brewster states that it is much larger, with thicker walls and more elaborate external decorations. The eggs are also larger and finer spotted than any of the series of fifteen eggs of *solitarius* in his collection. The eggs belonging to this nest measure, respectively, .84 x .49, .78 x .58, .78 x .58, .80 x .58. They are ovate to elongate-ovate in shape; in color, pure white, with a few fine spots, and rather numerous minute dots of brown, varying in tone from vandyke to seal brown.

Mr. McLaughlin found the Mountain Solitary Vireo breeding in the vicinity of Statesville, Iredell county, North Carolina, in June, 1888. He obtained two nests containing eggs on the 11th and 15th, respectively. Mr. McLaughlin's observations indicate that the bird in that region confines itself to the pine woods, the summer home of the Pine Warbler, *Dendroica vigorsii*. Both nests found were suspended from the limbs of pines and were less than a hundred yards apart. One contained three, the other four eggs. The nests were similar in composition to that of Mr. Brewster's, except that they lack the sheep's wool on the exterior.

Mr. Norris has a set of three eggs, taken May 4, 1888, in Buncombe county, North Carolina. These are pure white, speckled at the

*The Auk, 111, pp. 111-112.

† In Ornithologist and Oologist, XIII, pp. 113-114.

larger ends with seal brown; sizes, .80 x .59, .82 x .59, .83 x .60. The nest from which these were taken was situated fifteen feet from the ground, in an oak tree.

630. *Vireo atricapillus* WOODH. [142.]

Black-capped Vireo.

Hab. Mexico, and Texas north to Southwestern Kansas.

The first authentic account of the nests and eggs of this species was that given by Mr. Brewster, from specimens collected in Comal county, Texas, in May, 1878, by Mr. W. H. Werner. Other Texas records of this species are those of Mr. Ragsdale (who considers it a rare summer visitant in Cook county, on the northern boundary,) and Mr. William Lloyd, who notes it as tolerably common in Concho county during the fall migrations, and breeds in two localities in Tom Green county. Here he found several nests, which were always situated in some low tree at the edge of thick shrubbery, and at once distinguishable from the nests of Bell's Vireo (which breeds in the same vicinity), in that the latter is lined with wool, while the Black-cap's is not. Col. N. S. Goss gives the Black-capped Vireo as a summer resident in the gypsum hills in Southwestern Kansas. He found it breeding plentifully in Comanche county. According to the observations of those who have found this species breeding, it generally frequents brushwood and builds the nest low down, about five feet from the ground, in elm, oak, and mesquite trees. It is suspended from a forked twig, after the usual type of Vireo architecture, is hemispherical in shape, and composed of broken fragments of bleached leaves, strips of bark, grasses, catkins, spider's or caterpillar's silk. These are all firmly interwoven and form thick walls, making a nest that belongs to the higher order of bird architecture.

The eggs are usually four, pure white, and measure .72 x .52. Mr. Norris has three sets of eggs of this species in his cabinet. One set, containing four eggs, was collected June 5, 1886, in Comal county, Texas. The nest was in a mesquite tree, very low down. The eggs are pure white, entirely unmarked. They measure: .69 x .51, .69 x .51, .68 x .53, .71 x .52. Another set, also of four eggs, was collected June 18, 1888, in the same locality, by G. B. Benners. The nest was in a Spanish oak tree, three feet from the ground. The eggs are also pure white, entirely unmarked: .69 x .54, .70 x .55, .69 x .53, .70 x .54. The third set was taken June 5, 1888, by Mr. Benners, in the same locality. The nest was in a Spanish oak, six feet from the ground. The set consists of three eggs and two of the Dwarf Cow-

bird's. The Vireo's eggs are pure white, unmarked, and measure: .72 x .52, .72 x .51, .69 x .52.

631. *Vireo noveboracensis* (GMEL.) [143.]

White-eyed Vireo.

Hab. Eastern United States, west to the Rocky Mountains; south in winter through Eastern Mexico to Guatemala; resident in the Bermudas.

The White-eyed Greenlet is a common species in Eastern United States as far north as Maine and west to Kansas, and occasionally to Eastern Colorado. Breeds throughout most of the Mississippi Valley south of Minnesota. Low swampy places, near the edges of woods, covered with briers, or the tangled thickets of blackberry bushes and wild vines, are its favorite nesting places. The nest is usually a purse-shaped structure, swaying from a forked twig, and is rather large for the size of the bird. It is seldom placed more than three or four feet from the ground, and is composed of a mass of odd and miscellaneous materials, such as straws, bits of decayed wood, blades of grass, mosses, lichens, and various vegetable substances. Wilson nicknamed this bird "Politician," because it frequently used bits of newspaper in the construction of its nest.

The eggs are three to five in number, speckled with reddish-brown and dark purple on a clear white ground; the average size is .76 x .56, which is smaller than those of *V. Olivaceus*.

632. *Vireo huttoni* CASS [144.]

Hutton's Vireo.

Hab. California, resident.

This Vireo which resembles the White-eyed Greenlet is found in various portions of California, where it is resident. Concerning its nesting and eggs Mr. William Cooper writes as follows: "Hutton's Vireo (*Vireo huttoni*) breeds in the vicinity of Santa Cruz, though not in abundance. Retiring in habits, their nests and eggs are rarely found. April 7, 1874, I found a nest placed ten feet from the ground, suspended from a dead branch of a *Negundo*, containing three eggs incubated about five days. March 30, 1875, I found another nest placed eight feet from the ground, suspended from the small twigs of a *Frangula*. The nest—a neat, compact structure, composed of fine vegetable fibres, bits of paper, and grasses covered on the outside with green and gray mosses, lined with fine grasses—measures 3.25 inches in diameter outside, 1.75 inside; depth 2.25 outside, 1.50 inside.

The eggs, four in number, are white (a delicate blush-color before blown), marked with minute dots of reddish-brown, more numerous towards the larger end. They measure respectively, .70 x .52, .70 x .51, .69 x .51, .68 x .52. Two other nests were found, each containing four

eggs. They were placed, one in a *Negundo*, thirty feet high, the other at the extremity of an oak limb, twenty-five feet from the ground.”*

Mr. Walter E. Bryant notes a pair of these Vireos (observed by C. W. Knox) which built in the outer branches of a live oak, only a few feet above the exhaust pipe from a steam pump, where at times they were compelled to suspend work, owing to the dense vapor which enveloped them. Four eggs were laid in this nest.

632a. *Vireo huttoni stephensi* BREWST.

Stephens's Vireo.

Hab. Mexico, western portion of Texas, New Mexico, Arizona and Lower California.

This new race was first described by Mr. William Brewster, from specimens collected by Mr. F. Stephens in the Chiricahau and Santa Rita Mountains, Arizona. It is stated that he also took its nest and eggs near Fort Bayard, New Mexico, in 1876, but there appears to be no published account of them. Capt. Charles E. Bendire describes a nest of this bird containing three fresh eggs, taken by Lieut. Benson on June 21, 1887, near Fort Huachuca, Arizona, which are now in the National Museum. † The nest was attached to the fork of a small twig of some species of buttonwood, growing in a canon of the Huachuca Mountains, and was well concealed. It is very peculiar looking, being outwardly exclusively composed of a yellowish-buff plant down, with similarly colored grass-tops incorporated, giving the nest a uniform light color, not unlike a very fine cup-shaped sponge. It is lined with the extreme tops of grasses, also of a golden tint, and measures externally two and three-fourth inches in width by two and one-half inches in depth. The inner diameter is two inches by one and three-fourth inches. The three eggs are ovate in shape, pure white in color, with little gloss, sparsely spotted about the larger end, with fine dots of dark amber-brown and brownish-red; sizes .72 x .53, .70 x .52, .69 x .52.

633. *Vireo bellii* AUD. [145.]

Bell's Vireo.

Hab. Middle districts of the United States, from Illinois and Iowa west to the eastern slope of the Rocky Mountains, south in winter to Southern Mexico.

Bell's Vireo is a common bird in the interior districts of United States, as far west as the Rocky Mountains. It breeds in a great portion of the Mississippi Valley, from Dakota and Minnesota southward. Messrs. Keyes and Williams give it as a common summer resident of Iowa, where it is perhaps the most familiar bird of its genus. Here, Mr. L. Jones informs me, it frequents the brush fringing the woods or roadsides, where it attaches its nest to the twigs of the hazel bush.

*Bull. Nutt. Ornith. Club, III, p. 68.

†Notes on a Collection of Birds' Nests and Eggs from Southern Arizona Territory. By Capt. Charles E. Bendire, U. S. A., Proceedings of the National Museum, 1887, pp. 356-557.

The height of the breeding season is about the first week of June. The bird is an abundant summer resident from Kansas to Southeastern Texas. In Kansas it begins laying the last of May. Mr. Edwin C. Davis states that the favorite nesting places of this species in Northern Texas are well shaded orchards and the north side of osage-orange hedges. The nest seems to be the favorite receptacle for the eggs of the Cowbird, and rarely is a nest found without one or more eggs of this parasite. Mr. Davis observes that he has never found a young Cowbird in the Vireo's nest, which suggests the probability that the eggs are disposed of by the parent birds in some manner. The nest is a neat, cup-shaped structure, suspended by the brim in slender, forked twigs of a bush or small tree. It is compact and smooth, made of fine bark strips and strong, flax-like fibres of different plants, lined with fine grasses, feathers and down, rootlets and hair.

The usual number of eggs is four. According to Mr. William Lloyd, this species rears two broods in a season in Western Texas, nesting from May 1 to July 3, and the average clutch of eggs is six. He has taken sets of five, six, and two of eight eggs each. They are white, sparingly dotted with dark umber-brown around the larger end. Six eggs measure .69 x .50, .70 x .50, .70 x .50, .72 x .51, .73 x .50, .68 x .47.

633a. *Vireo bellii pusillus* (COUES) [146.]

Least Vireo.

Hab. Southern and Central California, Lower California and Arizona.

This bird occurs in Arizona, chiefly its lower portion, and California, from Sacramento to Cape St. Lucas. Its habits correspond closely with those of Bell's Vireo. Mr. Scott found it common in the Catalina Mountains of Arizona, arriving about the 25th of March, and are apparently mated at that time, as they proceed to build nests and lay eggs, the latter commonly three in number. Nests from Arizona are described as substantially like those of the former species.

The eggs measure about .69 x .48, and are of crystalline whiteness, speckled with red and reddish-brown, the markings being very minute and scarcely discernible in some cases, in others larger and more distinct.

634. *Vireo vicinior* COUES. [147.]

Gray Vireo.

Hab. Northwestern Mexico, Western Texas, New Mexico, Arizona and Southern California.

A very limited number of specimens of the Arizona or Gray Vireo had been procured since its discovery and description by Dr. Coues in 1866, and the species was considered rare until Mr. W. E. D. Scott, in 1884, found it to be fairly abundant on the mesas and foothills of the San Pedro slope of the Santa Catalina Mountains, in Pinal

county, Arizona. The limits of its distribution while breeding, were between the altitudes of 2800 and 4000 feet, and the locality where it was found most abundant is where the mesquites terminate and the oaks begin. The smooth, flat mesas, and the broad, open bottoms of the wilder canon are quite as much frequented by it as the rough and broken hillsides. The bird is exceedingly active, rapidly searching the limbs of trees and bushes for food, constantly uttering its clear liquid song. It is rarely found higher up than fifteen feet in trees and bushes. Two young males which had just left the nest were taken by Mr. Scott on May 26, and a nest was discovered the same day and others were found at different dates till June 11. They were built in mesquites and thorn bushes ranging from four to seven feet from the ground. One was attached at the rim for almost the entire circumference, very much like a Red-eyed Vireo's nest, but here the resemblance ceases, for it is not fastened to the many small twigs, on which it rests, that pass diagonally downward, so that it is not even a semi-pensile structure. Others were found situated in upright V shaped forks, with the rims partially attached to small twigs and the bottom resting in the crotch—a Vireo's nest resting in a crotch and in no degree pensile. The materials used in the composition were coarse dry grasses and shreds of bark externally, while the inner portion is composed of fine, dry grasses arranged in concentric layers. The nests found by Mr. Scott contained three and four eggs each respectively. The one discovered on May 26 did not contain any eggs until the 30th. This habit of sitting on a finished nest for a considerable time before any eggs are laid he found to be characteristic of the Arizona Jay, *Aphelocoma sieberii arizonæ*, (see pages 262-263 of this work). The eggs are rather rounded in their general shape, rosy when fresh, dead white when blown, and rather sparsely spotted with reddish and umber-brown spots, some chiefly at the larger end. Mr. Scott gives the sizes of three eggs from a set of four as .77 x .59, .78 x .58, .75 x .57, respectively; another of three, .72 x .53, .70 x .55, .68 x .53.*

635. *Certhiola bahamensis* REICH [159.]

Bahama Honey Creeper.

Hab. Bahamas, Florida Keys and adjacent coast of Southern Florida.

This little bird as its name indicates belongs to the Bahamas. It occurs in the Florida Keys and strays to the adjacent portions of the southern coast of Florida as far north as Charlotte Harbor. In the Bahamas it nests in April, May and June. It builds in small trees or

* For a detailed account of the habits, nests and eggs of this species see Mr. Scott's article: Breeding Habits of some Arizona Birds, in *The Auk*, II, pp. 321-326.

bushes, constructing a globular shaped nest with an entrance in one side. The structure is very large for so small a bird. Exteriorally it is built of weed stems, dry grasses, and lined with finer and softer vegetable fibres. The eggs are two to four in number, commonly four, are white, finely speckled with reddish-brown, chiefly at the larger end; average size .60 x .50.

636. *Mniotilta varia* (LINN.) [74, 74a.]

Black and White Warbler.

Hab. Eastern North America, north to Fort Simpson, west to the Great Plains; in winter Gulf States, West Indies, Central America and Northern South America.

The little Black-and-white Creeping Warbler, which climbs around the trunks of trees and among their branches in the manner of a true Creeper, breeds throughout its range, and winters from the southern border of the United States southward.

Nests usually in the latter part of May and in June, constructing a neat, compact domicile of leaves, bark-strips, grasses, with a lining of hairs and hair-like roots. The nest is built on the ground in woods, usually imbedded in a depression, and built on a foundation of decayed wood or leaves. It is generally placed under the shelter of weeds, by the side of a stump, fallen log, or under a projecting stone on a hillside.

The eggs are usually five in number. A series of ten sets in Mr. Norris' cabinet exhibit considerable variation in size and markings, yet on the whole the eggs have an individuality of their own which enables one to distinguish them from the eggs of any other Warbler. The typical egg of this species is white or creamy-white, speckled and spotted with chestnut and hazel, generally in the form of a wreath around the larger end, although the rest of the surface is not unspotted. A typical set measures .65 x .51, .63 x .51, .60 x .50, .65 x .49, .64 x .50; the average is .65 x .55.

637. *Protonotaria citrea* (BODD.) [75.]

Prothonotary Warbler.

Hab. Mississippi Valley and Gulf States north regularly as far as Iowa, Illinois, Indiana, etc., casually to Wisconsin; rare or casual on the Atlantic Coast, north of Georgia, south in winter to Cuba, Central America and Northern South America.

The vicinity of willow swamps, the borders of ponds and streams in the bottom lands of the Mississippi Valley and Gulf States is the summer home of the Golden Swamp Warbler. Messrs. Keyes and Williams record it as a summer resident of Iowa and not uncommon, especially in the eastern part of the State. Col. Goss gives it as a summer resident of Kansas; common in the eastern portion. It is abundant in portions of Indian Territory and Texas. Prof. Evermann notes the Prothonotary Warbler as a rare summer resident of Carroll county, Indiana. It is a summer resident in Western Ohio, where it

has been observed breeding. Mr. William Brewster found this species to be one of the most abundant and characteristic birds of Southern Illinois and Southwestern Indiana. In his charming account* of its life-history he describes its song as resembling the note of the Solitary Sandpiper, and its alarm note that of the Water Thrush.

The typical nesting-site, he states, was the deserted hole of the Downy Woodpecker or Carolina Chickadee. The height varied from two to fifteen feet, though the usual elevation was about four. If the cavity was old and broken out, or otherwise enlarged, it was far more likely to be chosen than a neater and newer one close at hand. The stump selected almost invariably stood in or projected over water. When the hole was deep it was usually filled up to within four or five inches of the entrance—the material being moss, leaves and cypress twigs.

Mr. O. C. Poling found this Warbler breeding in abundance in the latter half of May, 1887, in Western Illinois, about twenty miles above Quincy, and obtained a large series of the eggs. These are four to seven in number, usually six, sometimes five, rarely seven. Their shape is usually rounded-oval of nearly equal size at both ends, some being nearly spherical, others much elongated. The ground color is glossy creamy-white or buff, spotted, blotched and dotted with rich chestnut red, in some the ground being almost obscured by the markings. The sizes of a typical set taken by Mr. Poling are, $.73 \times .55$, $.73 \times .52$, $.73 \times .52$, $.73 \times .52$, $.72 \times .50$; another set of six, taken May 21, $.72 \times .57$, $.71 \times .56$, $.70 \times .58$, $.71 \times .54$, $.70 \times .59$, $.72 \times .58$. In a series of sixty-six sets in Mr. Norris' cabinet one contains the unusual number of eight eggs.

638. *Helinaia swainsonii* Aud. [76.]

Swainson's Warbler.

Hab. Southeastern portion of the United States—from South Carolina to Florida and Eastern Texas—northward in the Mississippi Valley to Southern Indiana (Knox county), Jamaica in winter.

Until recently this was one of our rarest North American birds. Its nests and eggs were first described by Mr. William Brewster from specimens collected by Arthur T. Wayne, near Charleston, South Carolina, June 5 and 6, 1885. † Since that date many nests, eggs and skins of the bird have been taken by various collectors, chiefly, however, by Mr. Wayne, T. D. Perry and George Noble, in the vicinity of Charleston, South Carolina, and Savannah, Georgia. From these collectors I gather that the bird nests in wild shrubbery of swamps or pools of stag-

* Bull. Nutt. Ornith. Club, III, pp. 153-162.

† In "Forest and Stream," July 9, 1885.

nant water, along running streams, and on high, dry land at a considerable distance from water.

The nests are built in bushes, canes, palmettos, and clumps of vines from three to ten feet above the ground or surface of the water. Mr. Perry observes that the birds breed in small colonies; two or more pairs are usually found nesting near one another. He describes their song as being exactly like that of the Hooded Warbler—a low, sweet call, consisting of a few notes. The nests are all essentially the same, being made outwardly of leaves, placed in layers, and lined with pine needles and fine, fibrous roots.

Three, rarely four, eggs are laid, and their color is a plain white, with a faint, bluish tinge—the only eggs among our North American Warbler which are unmarked. The eggs are deposited in May and June. Mr. Perry has found nests containing eggs slightly incubated as late as July 13. Two eggs taken May 16, 1885, measure .80 x .60; two taken by Mr. Noble, May 16, 1887, .78 x .57, .77 x .58. The sizes of a complement containing the smallest eggs in a series of nine sets in Mr. Norris' cabinet are .68 x .52, .68 x .54, .69 x .54; a set of the largest eggs .83 x .53, .84 x .53, .80 x .57.

639. *Helmitherus vermivorus* (GMEL.) [77.]

Worm-eating Warbler.

Hab. Eastern United States, north to Connecticut Valley, casually to Maine; west to Missouri, Kansas, and Indian Territory; south in winter to Florida, Cuba, Jamaica, Mexico, Central America.

The Worm-eating Warbler breeds throughout its United States range, which extends as far west as Kansas and Nebraska. In some sections, however, it is only an occasional or a rare summer visitor, while in others it breeds abundantly. It has been found breeding frequently in Southern Connecticut and various parts of Southern New England, in New York and Pennsylvania. This bird may be seen scratching the leaves on the ground, or rustling in the leaves of a fallen tree in search of worms and spiders. Sometimes while in the higher branches its actions are much like those of a Vireo. In Ohio the Worm-eating Warbler is a rare summer resident. It has been found breeding abundantly in Chester county, Pennsylvania, by Mr. Thomas H. Jackson and Samuel B. Ladd, in the months of May, June, and July.

The nest is usually built in a depression of the ground on a hillside, beneath a bush, beside a fallen log, at the foot of a sapling or tree. It is, according to the observations of Mr. Ladd and Mr. Jackson, likewise built on level ground in rather open places, with little shelter from the sun. It is composed outwardly of leaves, and lined with hair-like moss; sometimes fine grass and horse hair is part of the lining.

The eggs are four to six in number, usually five, and exhibit a great variation in size, shape and markings, some being faintly marked with light reddish spots, chiefly about the larger end, while others are heavily blotched with lavender and rich chestnut. The shape varies from equal ended to those that are quite pointed. A set containing the smallest normal specimen, collected June 30, in a large series of eggs described by Mr. Ladd, offers the following dimensions: .64 x .49, .64 x .50, .65 x .48, .64 x .49; a set of five taken June 6, measure .71 x .57, .72 x .58, .71 x .58, .76 x .57, .77 x .55. The last set is now in Mr. Norris' cabinet. Mr. Ladd also found a set of runt eggs of this species, which are smaller than those of a Hummingbird, and several nests were found containing an egg of the Cowbird. The average size is .68 x .54.

640. *Helminthophila bachmani* (AUD.) [78.]

Bachman's Warbler.

Hab. Coast of South Atlantic and Gulf States, from South Carolina to Louisiana. Cuba in winter.

An extremely rare bird. Said to nest in low trees. Eggs four. One of a set of four, taken April 30, and found in the collection made between the years 1853 and 1865 by the late Dr. S. W. Wilson in Georgia, is described by Mr. H. B. Bailey as dull white; around the larger end is a wreath of dark brown, covering nearly one-third of the egg; while a few obscure spots of lilac are scattered over the rest of the surface. It has no resemblance to any Warbler's egg, and especially none of any of this genus.* Size about .74 x .60: Ridgw.

641. *Helminthophila pinus* (LINN.) [79.]

Blue-winged Warbler.

Hab. Eastern United States north to Connecticut and Southern New York, the Great Lakes and Minnesota; south in winter to eastern Mexico, Guatemala.

The Blue-winged Yellow Warbler breeds throughout its United States range, chiefly however, north of 40° latitude. Apparently it is not found in great abundance wherever observed during the breeding season. Records are at hand of its breeding in Southern Connecticut, New York, Southeastern Pennsylvania, Central Ohio, Indiana and Southeastern Illinois. Col. Goss gives it as a rare summer resident of Kansas. It has probably been found breeding most abundantly in Southeastern Pennsylvania by Isaac S. Reiff. The site generally selected for a breeding place in that locality is a clump of blackberry bushes on the edge of a wood, and high ground a short distance from water seems to be preferable. Nest building begins as early as May 10, and nests were found containing young as early as June 3. The nest is built on the ground in thickets; sometimes it is raised two or three

* Bull. Nutt. Ornith. Club, VIII, 38.

inches above the ground and hidden by tall grass or a cluster of small oak sprouts or vines. The materials used in the construction of the nests were dry leaves, strips of wild grape bark, becoming finer towards the inner part; the lining is of very fine grass.

The eggs are four or five in number, white, faintly and sparsely speckled with burnt umber and seal brown. A set of five eggs in Mr. Norris' collection, taken by Mr. Reiff, May 28, 1887, in Bucks county, Pennsylvania, exhibits the following measurements: .70 x .50, .69 x .52, .67 x .51, .68 x .51, .67 x .52; another of four taken in Montgomery county, Pennsylvania, June 16, 1887, measures respectively, .60 x .51, .64 x .52, .60 x .50, .63 x .51.

642. *Helminthophila chrysoptera* (LINN.) [81.]

Golden-winged Warbler.

Hab. Eastern United States and British Provinces; in winter south to Cuba, Eastern Mexico and Central America.

The breeding range of this handsome Warbler is about the same as that of the last, but it seems not to extend its range so far west in the summer months. It has been found nesting in Georgia, North and South Carolina, and as far north as Southern New England. Breeds in Minnesota, Wisconsin and Michigan and is a rather common summer resident of Ohio. Mr. O. C. Poling found the Blue Golden-winged Warbler breeding in limited numbers in the bottom lands of Western Illinois, along the Mississippi River. The birds seem to prefer low land covered with long grass with here and there a bush or grove of trees. Swampy lands that skirt small woods are its favorite resorts in Central Ohio. The nest is built on or near the ground under tussocks of grass or bushes. All the nests found by Mr. Poling were placed above the ground. The composition consists of leaves, vegetable roots, sedges, and fine strips of bark, lined with fine grasses — on the whole the situation and style of the nest is like that of the Maryland Yellowthroat.

The eggs, four to six in number are white, speckled with burnt umber, chestnut and lilac-gray. Four sets in Mr. Norris' cabinet exhibit the following sizes: one of four from Monroe county, Michigan, taken May 17, 1880, .60 x .48, .60 x .49, .58 x .49, .60 x .49; another from the same locality collected May 21, 1886, .65 x .49, .63 x .52, .63 x .51, .63 x .52; a set of five taken near Detroit, Michigan, May 30, 1887, .65 x .50, .64 x .49, .65 x .50, .64 x .50, .64 x .49; the fourth from Adams county, Illinois, taken May 27, consists of five eggs. These measure .68 x .54, .74 x .51, .67 x .54, .66 x .52, .72 x .51.

643. *Helminthophila luciæ* (COOPER.) [83.]**Lucy's Warbler.**

Hab. Valleys of the Colorado and Gila Rivers in Arizona and Southern California, south into Sonora.

Captain Bendire discovered the nest and eggs of this species near Tucson, Arizona, May 19, 1872. The nest was built between the loose bark and the trunk of a dead tree, a few feet from the ground, similar to that of the Brown Creeper. Mr. F. Stephens found it abundant in the vicinity of Tucson in 1882. The birds frequented the willows along the banks of streams, and like the Kinglets, spent much of their time in searching for insects in the outer branches. Many nests and eggs were examined after May 8. These were variable, the characteristic place being like that found by Captain Bendire, but the nests were also built in deserted woodpecker's excavations, knot-holes and all sorts of crevices. A brood of young was actually taken from the deserted domicile of a Yellow-headed Titmouse.

The eggs are three or four in number, white, usually sparsely speckled with brown and black, chiefly at the larger end. A set of four taken by Mr. Stephens is described by Mr. Brewster as being handsomely wreathed about the larger ends with reddish-brown and umber spots, a few of which are scattered over the general surface. Their sizes are .58 x .46, .58 x .46, .62 x .46, .60 x .47.*

644. *Helminthophila virginiaë* (BAIRD.) [84.]**Virginia's Warbler.**

Hab. Chiefly the Rocky Mountain districts, north to Wyoming, Colorado, Utah and Nevada; south into Central Mexico.

In some portions of the Rocky Mountain region this is an abundant species, as in Colorado, Wyoming and Utah. It frequents the shrubbery along creeks, where it breeds. A nest with eggs obtained by Prof. Ridgway, near Salt Lake, Utah, is described as being embedded in the deposits of dead or decaying leaves, on ground covered by dense oak-brush. Its rim was just even with the surface. It was built on the side of a narrow ravine, at the bottom of which was a small stream. It consists of a loose but intricate interweaving of fine strips of the inner bark of the mountain mahogany, fine stems of grasses, roots, and mosses, and is lined with the same with the addition of the fur and hair of the smaller animals.

The eggs were four in number, and measured .64 x .47 of an inch. They are of a rounded-ovoid shape, have a white ground with a slightly roseate tinge, and are profusely spotted with numerous small blotches and dots of purplish-brown and lilac, forming a crown around the larger end.

* Bull. Nutt. Onith. Club, VII, pp. 83-84.

645. *Helminthophila ruficapilla* (WILS.) [85, *part.*]**Nashville Warbler.**

Hab. Eastern North America to the Great Plains, north to the Fur Countries, south in winter to Eastern Mexico and Guatemala.

The Nashville Warbler breeds from the Northern United States northward to Hudson Bay and interior British America. Throughout New England it is a common summer resident, breeding in any suitable locality in the latter part of May and in June. At this season it may also be found in Michigan, Wisconsin, Northern Illinois, etc. The nest is placed on the ground and is composed of leaves, bark strips, sometimes almost entirely of pine needles, the lining being finer material of the same with grasses and hair. Often the nest is imbedded in the ground flush with the surface, and it is usually hidden under a tussock of grass. The ground color of the eggs varies from white to creamy-white, and are speckled with minute dots over the surface, but chiefly at the larger end with reddish-brown, hazel and lilac. Six sets of this bird's eggs are in Mr. Norris' cabinet. One of five, taken by "J. M. W." (Mr. C. L. Rawson) near Preston, Connecticut, June 6, 1882, are very small for eggs of the Nashville Warbler; they measure .56 x .45, .56 x .46, .56 x .46, .57 x .46, .57 x .47. A set of three collected near Hudson, Massachusetts, May 30, 1886, measures .65 x .49, .64 x .49, .64 x .50, respectively. The third, consisting of four eggs, was taken May 30, 1887, near Detroit, Michigan; their sizes are .60 x .50, .61 x .49, .62 x .49, .62 x .48. Three other sets in the same cabinet show a considerable variation.

646. *Helminthophila celata* (SAY.) [86.]**Orange-crowned Warbler.**

Hab. Northern North America, breeding in high latitudes, as in the Yukon and Mackenzie River regions, southward into the Rocky Mountains. Winters in the South Atlantic and Gulf States and eastern Mexico, rare in the Northeastern States.

As mentioned in the above habitat the Orange-crowned Warbler breeds north of the United States. Its nests and eggs were found by Mr. Kennicott, in the middle of June, in the vicinity of Great Slave Lake. They were generally built on the ground among clumps of bushes, often in the side of a bank, and usually hidden by the dry leaves among which they were placed. They were large for the size of the bird, and were composed almost entirely of long, coarse strips of bark, loosely interwoven with a few dry grasses and plant stems. They were warmly lined with hair and fur of small animals. The bird was found breeding near Fort Resolution on the Yukon, at Fort Rae, and at Fort Anderson. The eggs are white or creamy-white, finely speckled, chiefly on the larger end, with reddish or chestnut-brown; average size .64 x .46.

646a. *Helminthophila celata lutescens* (RIDGW.) [86a.]**Lutescent Warbler.**

Hab. Pacific coast region north to Kadiak, Alaska, south in winter to Lower California and Western Mexico and eastward during the migrations to Colorado, Arizona, etc.

The Lutescent Warbler breeds in the coast ranges of Southern California and northward to Kadiak Island, Alaska. Mr. W. O. Emerson states that it may be seen during the entire year in the vicinity of Haywards, California, where Dr. J. G. Cooper took the first known nest. Mr. Emerson also informs me that Mr. A. M. Ingersoll has collected large numbers of the nests and eggs of this bird in Alameda county, California. The nest is built on the ground, often concealed by tall grass or bushes. It is composed of dry grass, rootlets, moss and lined with a few horse hairs and fine vegetable fibres.

The eggs range from three to five in number, and vary from white to dull creamy-white, finely speckled with lilac-gray and cinnamon-rufous, chiefly at the larger ends. A set of four taken near Salem, Oregon, April 14, 1885, in Mr. Norris' collection gives the following measurements: .61 x .47, .61 x .46, .59 x .47, .60 x .45; one of three collected near the Golden Gate, California, June 6, 1885, .64 x .49, .64 x .49, .61 x .47.

647. *Helminthophila peregrina* (WILS.) [87.]**Tennessee Warbler.**

Hab. Eastern North America, breeding from Northern New England, Northern New York and Minnesota northward into the Fur Countries; migrating through Eastern United States, chiefly west of the Alleghanics, as far west as the Rocky Mountains; south through Mexico and Central America.

A nest of this bird was taken by Prof. Horsford, near Springfield, Massachusetts. It is described by Dr. Brewer as being built in a low clump of bushes, just above the ground, and made of fine, vegetable fibres, grasses, mosses, etc., lined with hair. The eggs were pearly white, wreathed about the larger end with brown and purplish markings; size .60 x .50.

648. *Compothlypis americana* (LINN.) [88.]**Parula Warbler.**

Hab. Eastern United States and Canada; in winter Southern Florida, more Northern West Indies, Eastern Mexico and Northern Central America (Guatemala).

Better known as the Blue-yellow-backed Warbler. Breeds in suitable localities throughout its United States range. It has been observed rearing its young in various parts of Nebraska and Illinois, and its nest and eggs have been taken in Missouri. Mr. Nehrling saw old birds feeding their young in July and August in Southeastern Texas, and Col. Goss makes note of the same fact occurring near Neosho Falls, Kansas, in July, 1879. This species is a summer resident in Northern Ohio, but not common. It seems to be more abundant during the breeding season in the States bordering the Atlantic coast, especially

from New Jersey northward. The Parula Warbler loves to make its summer home midst swampy groves, whose trees and bushes are draped in festoons of a long, light green moss, with fine, hair-like filaments—the pendulous tree moss—the *usnea* of the botanists. In the bunches of this thread-like lichen the Parula usually makes its nest with an entrance at one side. “J. M. W.,” (Mr. C. L. Rawson), who is well acquainted with the habits of this species in New London county, Connecticut, says that the bird simply gathers together the lower strands of the *usnea*, felting it with the same material, and the nest is done. This very accurate naturalist and charming writer also observes that at first sight the nest might indicate a greater degree of skill than the little architect possesses. Such is doubtless the case with the one represented in our illustration, which is a faithful picture of a specimen selected from five beautiful nests, furnished by Mr. W. W. Worthington, of Shelter Island, New York, where the birds breed abundantly.

The nests are situated in low trees and bushes at heights ranging from three to forty feet, usually from six to twelve feet. Mr. Worthington and Mr. Griffing both found nests in the moss attached to the sides of the trunks of large trees. Sometimes one or two horse hairs are woven into the nest, and occasionally a piece of fine grass. In regions destitute of tree moss, in which this species can make its nest, it frequently adapts itself to circumstances by nesting in the bunches of dead leaves, caught on branches during freshets. Dr. C. Hart Merriam records a nest of this kind taken near St. Louis, Missouri, June 8, 1885. Mr. William Brewster makes note of an unusual nest of the Parula Warbler, which was made by the birds and suspended by the upper edges to the drooping boughs of a live hemlock. In general style of construction it closely resembles a wide-mouthed nest of the Baltimore Oriole open at the top. It is composed entirely of *usnea*, closely woven or felted with a scanty lining of fine grasses and pine needles. The breeding season is in May, June and July.

The usual number of eggs laid by this species is four, sometimes five. Mr. Rawson and Mr. Worthington have both taken sets containing seven, and one of that number taken by the former collector is in Mr. Norris' cabinet, which contains thirty-nine sets of the eggs of this species. The ground-color of the eggs is white or creamy-white, more or less glossy, and speckled with reddish-brown, cinnamon-rufous, chestnut, and in some gray tints. Many eggs are wreathed near the larger ends. Ten selected specimens before me offer the following sizes;

.62 x .42, .67 x .46, .64 x .46, .65 x .47, .65 x .45, .69 x .48, .67 x .47, .69 x .43, .70 x .45, .66 x .46.

649. *Compothlypis nigrilora* (COUES) [89a.]

Sennett's Warbler.

Hab. Valley of the Lower Rio Grande in Texas.

This is a common species at various localities on the Lower Rio Grande in Texas. It was observed by Dr. Merrill to be quite common at Brownsville, and also by Mr. George B. Sennett at Lomita. Mr. Sennett states that it is truly a bird of the forest, where it delights to flit about in the upper branches of the tallest trees continuously warbling its clear song, which is readily distinguished from that of all other birds. On May 17 a nest containing one egg was found; it was made in a gray misleto-like orchid, an air-plant very common on the Rio Grande, which establishes itself on the small branches of trees and varies in size up to eight or ten inches in diameter. This one is six inches long by four and one-half inches wide, quite firm in texture, and was fastened some ten feet from the ground, to the end of a drooping branch of a brazil tree in open woodland. The nest is constructed by simply parting the gray leaves of the orchid, and digging into its center from the side, a cavity some two inches in diameter being made with an opening one and one-quarter inches. The bottom and sides are lined with short cottony wood fibres. The birds evidently build also in the hanging trusses of Spanish moss so abundant everywhere, as a nest was found by Dr. Merrill, July, 5, 1877, in a small bunch of moss about eight feet from the ground.

The single egg is described by Mr. Sennett as similar to that of *C. americana*; its spots of lilac and brown forming a broad incompact band near the larger end, and the entire surface is sparingly marked with the same colors on a dull white ground; size .67 x .46.

650. *Dendroica tigrina* (GMEL.) [90.]

Cape May Warbler.

Hab. Eastern North America, north to Hudson Bay, Lake Winnipeg, etc. Breeds from Northern New England northward, also in Jamaica; winters in Greater Antilles.

Not a common bird wherever found in Eastern North America, except in restricted areas during the migrations, when great numbers are seen in a day. Some years, in certain localities it is more frequently observed than at other times. Forests of evergreens are its favorite resorts. It is known to breed in Northern New England and northward. A nest with eggs taken by James W. Banks near St. John, N. B., is described by Mr. Montague Chamberlain.* The nest was hidden in a cluster of low cedars, growing in an exposed position on

* In *The Auk*, II, pp 33-36.

a rather open hill-side; it was placed less than three feet from the ground, and within six inches of the tips of the branches amidst the densest part of the foliage, and well screened from observation. June 13 the nest was completed and contained two eggs, and on the 16th four eggs. The nest somewhat resembles that of the Magnolia Warbler, *D. maculosa*, being composed of minute twigs of dry spruce, grasses, with spider's webs interwoven. The lining is composed entirely of horse hair laid with precision, and shaped into a prettily formed cup, the brim being turned with exquisite grace.

The eggs of this species are described as dull or buffy-white, or grayish, speckled or spotted round the larger end with dark brown or reddish-brown and lilac-gray, sometimes a few specks of blackish are scattered over the greater part of the surface. The ground-color of the eggs belonging to the nest just described, is dull white like that of the Magnolia's; their sizes .69 x .49, .65 x .49, .66 x .49, .66 x .48. The average is .68 x .49.

652. *Dendroica æstiva* (GMEL.) [93.]

Yellow Warbler.

Hab. North America at large, south in winter to Central America to Northern South America.

Known by several names, such as Summer Warbler, Summer Yellow-bird, Blue-eyed Yellow Warbler and Golden Warbler. An abundant bird everywhere throughout its range, in woodland, orchards, parks and gardens. Nests in fruit or shade trees, low shrubbery and brushwood. Sometimes the nest is built at heights ranging from ten to forty feet in large trees, but their favorite nesting places are hedges and low bushes. The nest is usually skillfully fastened to several small twigs, and is a neat, compact, cup-shaped structure, made of grayish, hempen fibres, slender stems of plants and leaves, lined with soft plant down and feathers. The Cowbird makes the nest of this Warbler a favorite receptacle for depositing her egg. In United States the Yellow Warbler begins nest building about the first of May.

The eggs are four or five in number. They have a greenish-white or even a decided green ground-color, spotted, usually in a wreath around the larger end, with umber-brown, blackish and lilac-gray. They vary in size from .62 to .70 long by .48 to .53 broad. A common size is .67 x .47.

654. *Dendroica cærulescens* (GMEL.) [94.]

Black-throated Blue Warbler.

Hab. Eastern North America to the Great Plains; breeding from the northern and more elevated portions of Eastern United States northward; in winter, Florida and West Indies.

In most of the Eastern United States this beautiful Warbler is known only as a spring and fall migrant. It has been observed breeding

in Northern New England, New York, and in Ontario. The Rev. C. M. Jones found it breeding at Eastford, Connecticut, in deep, swampy woods, which the birds seem to make their favorite resorts. Four nests were discovered placed in laurel bushes, from five to about eighteen inches above the ground. They were composed of dry grape vine bark, twigs and roots, and partially covered on the outside with the woolly substance of cocoons; the lining was of fine black roots and hair, and they contained four eggs respectively. These nests were found in the first half of June. Mr. William L. Kells found the Black-throated Blue Warbler breeding in the thick underbrush of the high timber land, near Listowel, Ontario, in June, and on the 5th of that month, 1886, discovered a compactly built nest of this species in a small maple. On the 9th it contained three eggs of the Warbler and one of the Cowbird. These are now in Mr. Norris' collection. Another nest found placed in a small leafy shrub at the edge of a thicket contained three young of *D. caerulescens* and one young Cowbird. Mr. Egbert Bagg and Dr. William M. Ralph found this Warbler nesting in swampy and heavily timbered woods, thickly overgrown with brush, near Holland Patent, New York. Four nests were taken between May 29 and June 14, 1886; they were built in the upright forks of little maple bushes, from nine inches to two feet above the ground.

The sizes of two sets of four eggs each are given as follows: .66 x .50, .66 x .51, .64 x .51, .64 x .51; .75 x .54, .72 x .55, .76 x .54, .72 x .52. The eggs are buffy-white or greenish-white, more or less heavily blotched with pinkish-brown, reddish-brown, of varying shades; some specimens in general shape and appearance resemble the eggs of the American Redstart, being marked with chestnut and hazel, chiefly at the larger ends. The sizes of Mr. Norris' set are .64 x .49, .64 x .51, .64 x .51.

655. *Dendroica coronata* (LINN.) [95.]

Myrtle Warbler.

Hab. Entire of North America, rare west of the Rocky Mountains, except on the Pacific coast, where more or less common. Breeds from Northern United States northward. Winters from the Middle States and Ohio Valley (40°) southward to West Indies and Panama. Breeds also in Jamaica.

The Yellow-crowned or Yellow-rumped Warbler is a common and well-known species in Eastern United States, breeding from the northern portions northward in May, June and July. Breeds abundantly in the coniferous forests of Maine, New Hampshire and Vermont. In Central and Northern Ohio it is a rather common breeder. Dr. Howard E. Jones has several times found it nesting in Pickaway county, and has observed it in the extreme southern portions of the State in July. In the vicinity of Listowel, Ontario, Mr. W. L. Kells met with this

species breeding in swampy woodland, in company with the American Redstart, Black-and-White Warbler, Chestnut-sided and Bay-breasted Warblers.

The Myrtle Warbler spends most of its time in the higher branches of trees searching for food, but builds its nest down on the lower branches, preferred in pine, hemlock, spruce and other coniferous trees; the height of the nest from the ground is seldom more than eight or ten feet, usually four or five. The locality in which Mr. Kells found this species breeding was woods of black ash, intermingled with balsams and cedars. The nest is composed of soft vegetable fibres, with a few grass stems for a lining; in some there is a lining of feathers when they are obtainable.

The eggs are four or five, usually four, in number, and vary from creamy-white to dull white, speckled and spotted, and frequently blotched, generally in wreaths near the larger ends, with various shades of reddish-brown and lilac-gray. The sizes of a set containing the largest eggs in a series in Mr. Norris' collection are .70 x .54, .69 x .54, .72 x .55; these were taken at Grand Manan, New Brunswick, June 24, 1878. A set of four exhibiting the smallest sizes was taken by Mr. William Brewster at Lake Umbagog, Maine, June 11, 1876. These measure .64 x .51, .64 x .49, .66 x .50, .66 x .50, respectively.

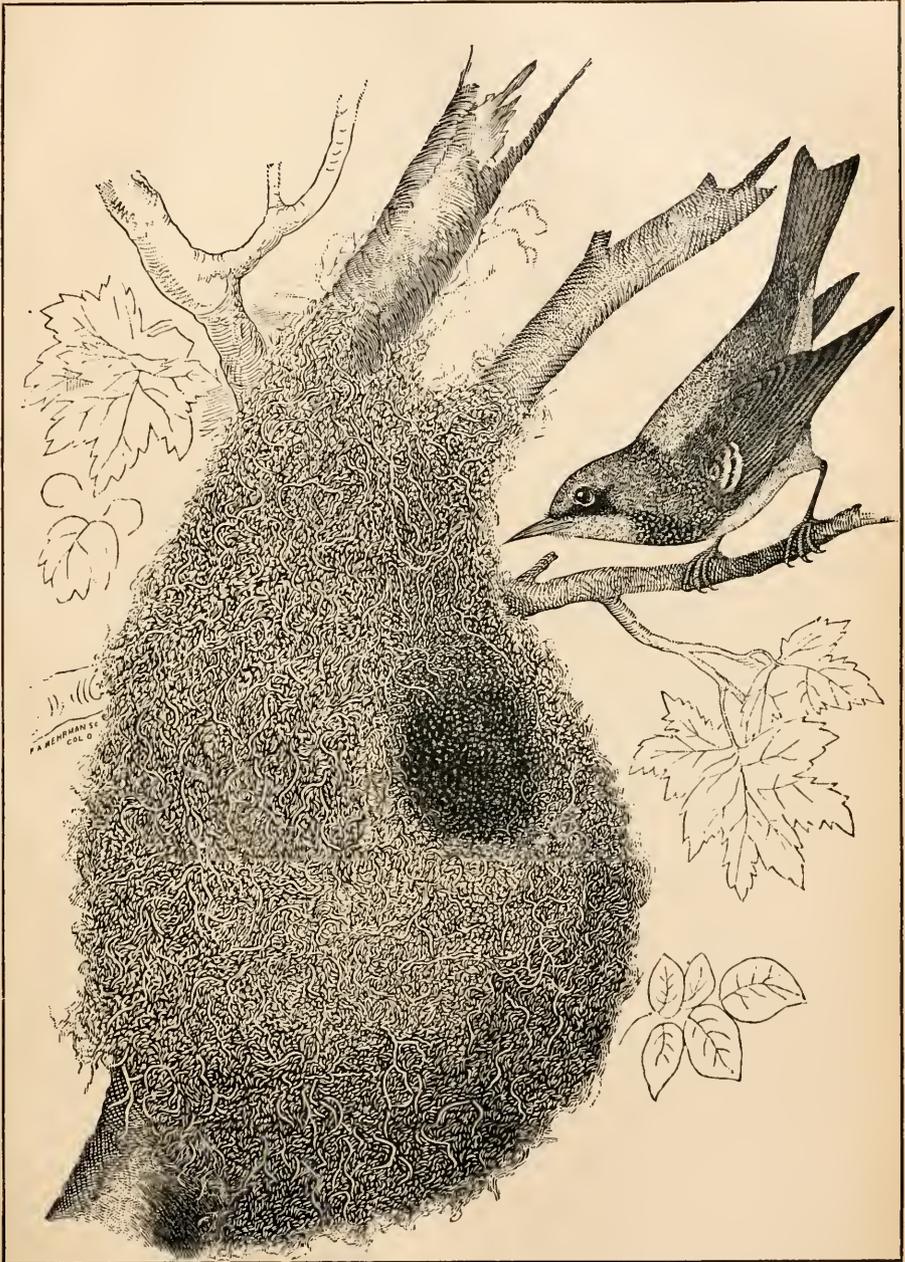
656. *Dendroica auduboni* (TOWNS.) [96.]

Audubon's Warbler.

Hab. Western North America, east to the eastern slope of the Rocky Mountains, north to British Columbia; south in winter to Guatemala. Accidental in Massachusetts.

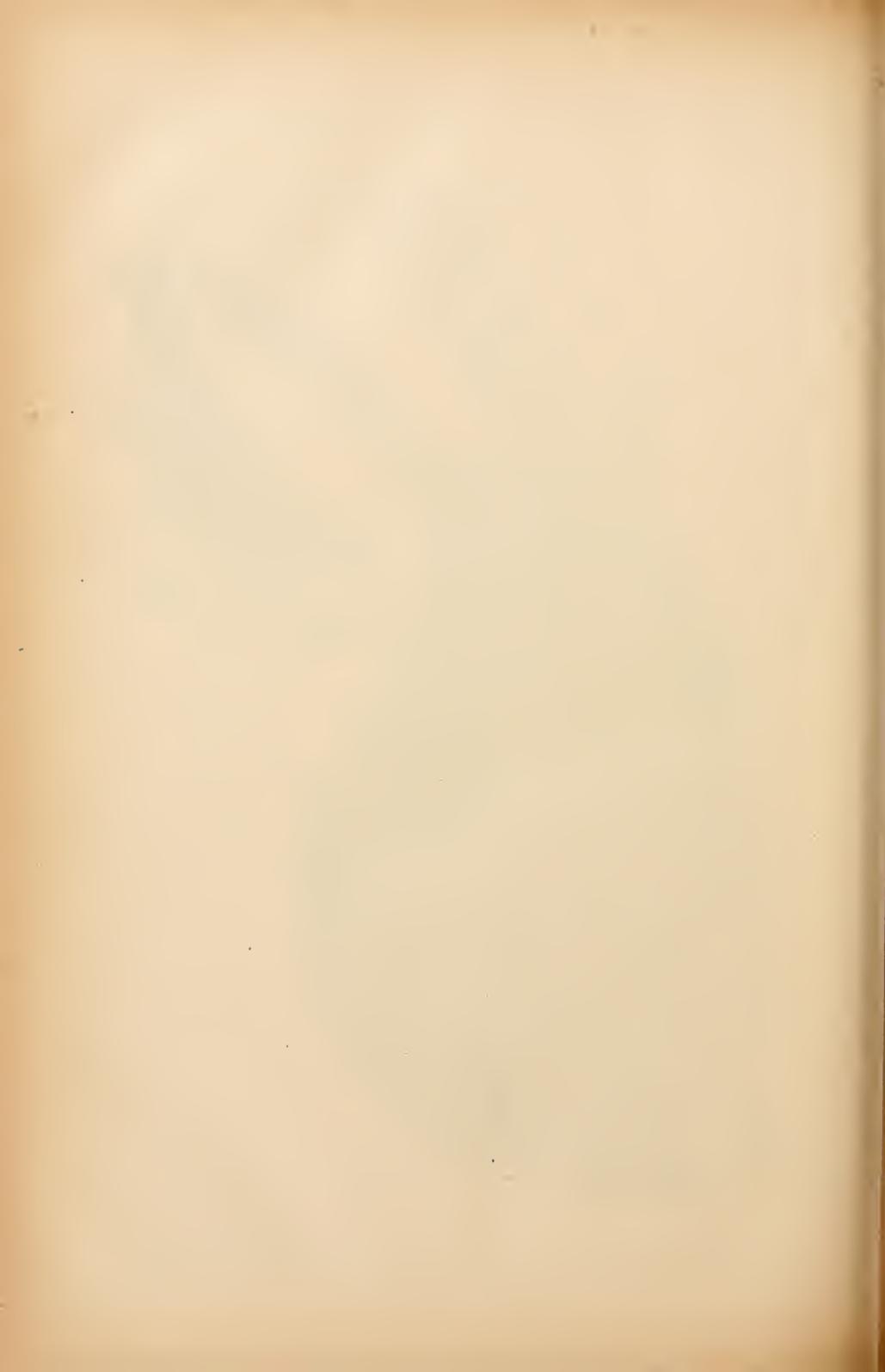
Audubon's Warbler looks like the last species except that its throat is yellow instead of white. An abundant species in all suitable places throughout the west. Mr. Scott found it nesting at Twin Lakes, Colorado, and Mr. D. H. Minot notes it as a summer resident in the region about Boulder, where the bird prefers high willow swamps and spruce timber. He found nests June 24, at Seven Lakes. Mr. Frank M. Drew gives it as an abundant resident in San Juan county, Colorado. Dr. Merrill states that it breeds rather abundantly in the Big Horn Mountains, Montana. Mr. H. W. Henshaw states that Audubon's Warbler breeds abundantly throughout the pine woods of the mountains about Santa Fe, New Mexico. Mr. A. W. Anthony says that a few breed in the more elevated parts of Washington county, Oregon.

The nests of this species are situated at various heights ranging all the way from three to thirty feet, and usually on the outer branches of pine or spruce trees. Their composition is fine strips of bark, grass, small stems of the sage bush, pine needles, etc., lined with fine roots, hairs and feathers.



PARULA, OR BLUE-YELLOW-BACKED WARBLER AND NEST.

(*Compothlypis americana.*)



The eggs are usually four in number, sometimes five. Some specimens are somewhat like the common type of the Yellow Warbler's, being greenish-white, marked chiefly about the crown with olive-brown. The ground color, however, varies from dull olivaceous-white to pale green or even pale blue, and the markings are usually blackish-brown and lilac-gray; average size .67 x .52. A set of four eggs in Mr. Norris' cabinet was taken in Larimer county, Colorado. They measure .72 x .56, .71 x .55, .73 x .56, .77 x .55.

657. *Dendroica maculosa* (Gmel.) [97.]

Magnolia Warbler.

Hab. Eastern North America as far west as base of Rocky Mountains. Breeds from northern parts of New England, New York, and Michigan northward to about Hudson Bay. In winter, Bahamas, Cuba and Central America.

An elegant little bird, and perhaps better known as the Black-and-Yellow Warbler. Breeds commonly in Northern New England, New York, Michigan and northward. Not an abundant summer resident in Northeastern Ohio. Accounts of this species nesting in New Hampshire and Maine have been given by Mr. William Brewster, Ruthven Deane, C. J. Maynard and others. It was found breeding quite abundantly on Grand Manan by Mr. Charles H. Andros. The time of laying for this species is usually in the first half of June.

According to Mr. Brewster it is found everywhere common throughout the White Mountains of New Hampshire.* Its favorite resorts are little clumps of fir and spruce shrubs, also willow thickets near streams and ponds and other damp places. Its gay colors and sprightly song will at once attract the attention of even the casual observer. The nest is usually placed in the horizontal twigs of a fir or spruce at heights ranging from five to six feet, four being the average elevation, and the favorite localities are the edges of wood-paths, clearings or roads bordered by woods. Sometimes the nests are built in the tops of young hemlocks ten to fifteen feet up, or in the heart of the forest, thirty-five feet above the ground. The nest Mr. Brewster states is loosely put together, of fine twigs, preferredly hemlock, coarse grasses, dry weed-stalks; the lining is fine black roots, closely resembling horse hair. In general style it approaches more nearly the nest of the Chestnut-sided Warbler. The eggs are four in number, very rarely five. A series of forty-three sets of the eggs of this species is in Mr. Norris' cabinet. The ground color of the specimens is usually creamy-white, spotted and blotched with various shades of reddish-brown, hazel and chestnut. The markings are generally large and well defined and often form wreaths about the larger ends; again the ground-color of the

* Bull. Nutt. Ornith. Club, II, pp. 1-7.

eggs will be almost wholly obscured by innumerable fine specks. The sizes of two sets containing the smallest and largest eggs are as follows: .56 x .48, .59 x .48, .59 x .45, .56 x .47; .70 x .49, .68 x .47, .70 x .49, .68 x .49.

658. *Dendroica cærulea* (WILS.) [98.]

Cerulean Warbler.

Hab. Eastern United States (west of the Alleghanies) and Southern Canada, east to Central New York; south in winter to Cuba and Northern portions of South America.

A beautiful little sky-blue feathered creature, and well named Azure Warbler. Its home is in the top branches of trees in sylvian groves, where it may be seen, sometimes in numbers, flitting about in search of insect food, and uttering its peculiar syllables which sound like *zee, zee, zee, ze-ee-eeep*. It is not strange that the nest of this species has been so seldom discovered, even where the bird is very abundant during the breeding season. The nest is built in the higher horizontal branches of forest trees, always out some distance from the trunk, and ranging from twenty to fifty feet above the ground. The Blue or Cerulean Warbler is an abundant summer resident in Central Ohio, where it prefers damp woods for nesting. Mr. J. A. Allen describes a nest and four eggs which were taken in Munroe county, New York, June 7, 1878. The nest was placed in the forks of a small ash, about twenty-five feet from the ground. One taken near Drummondsville, Ontario, near Niagara Falls, and described by Dr. Brewer, was built in a large oak tree, fifty feet from the ground. This and another nest containing four eggs taken by Mr. Wm. Bryant at Mount Carmel, Illinois, May 16, 1878, are in the Museum of Comparative Zoology. Mr. Allen states that the Mount Carmel nest was also placed at an elevation of twenty-five feet.*

Prof. Evermann gives the Cerulean Warbler as a common summer resident of Carroll county, Indiana.

Mr. J. L. Davidson secured two nests of this species with eggs, in Niagara county, New York, on June 8 and 23, 1888. They were built in small basswood trees, about twenty feet above the ground. On June 30 another nest was discovered, but was too high and inaccessible. Two broods were observed in July in the same woods. The nests are compactly made of fine, dry grasses, bound together with spiders' silk to which are attached pieces of whitish lichen; the lining is strips of bark and fine grass.

The eggs are bluish-white or greenish-white, speckled with reddish-brown and lilac, chiefly at the larger end, and often in the form of a wreath. Mr. Davidson gives the measurements of two specimens that were saved out of the first nest, as .70 x .52, .71 x .52. The second nest

*Bull. Nutt. Onith. Club IV, 25-27.

contained three eggs of the Warbler and one of the Cowbird; sizes, .64 x .50, .63 x .49, .64 x .50.

659. *Dendroica pensylvanica* (LINN) [99.]

Chestnut-sided Warbler.

Hab. Eastern United States and Canada. Breeds north of 40° except in higher mountain ranges. In winter, south to Bahamas, Eastern Mexico, and Central America to Panama.

This well-known Warbler breeds abundantly in the Middle and Northern States within its range. Mr. McIlwraith gives it as a common resident of Ontario, breeding in suitable places near Hamilton and throughout the country, raising two broods in a season. Breeds, but not commonly, in Central Ohio, more abundant in the northern portion. Nests in the latter part of May and in June.

The nest is commonly built in a low bush, shrub or sapling from two to eight feet above the ground. The situations chosen are the "scrub-lands" or open woods in low grounds, with a growth of bushes, vines, etc. The nest is generally coarser than the Yellow Warbler's, and contains fewer woolly materials. It is composed of narrow strips of thin bark or dried grasses, mixed with plant-down, fine bleached grasses, and lined with hairs.

The eggs are four, rarely five, in number, and vary from clear-white to creamy-white in ground-color, speckled with rusty-brown and chestnut, often tinged with lilac-gray, chiefly at the larger end, where they frequently form wreaths. A set of four offers the following sizes: .68 x .50, .65 x .47, .67 x .49, .68 x .49; average .68 x .50. Eggs of the Cowbird are commonly found in nests of this species.

660. *Dendroica castanea* (WILS.) [100.]

Bay-breasted Warbler.

Hab. Eastern North America. Breeds from Northern New England and Northern Michigan northward to Hudson Bay; south in winter through Eastern Mexico and Central America.

The Bay-breasted Warbler is known to breed from Northern New England and Northern Michigan northward. Mr. William L. Kells found it breeding in the vicinity of Listowel, Ontario, in low, swampy woods, where there is a mixture of evergreens, ash, birch, elm and other trees.

The nests are compact, cup-shaped structures, usually placed in coniferous trees from five to fifteen or even twenty feet above the ground. Mr. Kells found a nest placed between a slender limb and the trunk of a small cedar about five feet up; another was found in a hemlock at an elevation of fourteen feet. The nest is composed of fine shreds of bark, small twigs, fibrous roots and pine hair; the interior is a little more than two inches in diameter by one in depth.

The eggs are deposited in the latter half of May or first half of June. Four is the usual number laid; they are white, with a bluish tinge, finely speckled on or round the larger end with reddish-brown; average size .70 x .50.

661. *Dendroica striata* (FORST.) [101.]

Black-poll Warbler.

Hab. Eastern and Northern North America, breeding from Northern New England, Labrador, etc., to coast Alaska (north of the Alaskan Peninsula) and to the Arctic Ocean; accidental in Greenland. In winter, south to Bahamas, Cuba and Northern South America.

In the United States the Black-poll Warbler is known as a spring and fall migrant, except in Northern New England, where a few pair remain to breed. Its breeding grounds are from thence northward into the Arctic regions.

The nests are usually built in the month of June, and are placed in low, thick spruce trees about eight feet from the ground. They are made of small twigs, lichens, slender rootlets, sedges, and lined with feathers. Mr. Norris has fifteen sets of the eggs of this species taken at Grand Manan, N. B.

They show great variation in size, shape and coloration. In shape they vary from ovate to elongate-ovate, and the ground-color varies from white to creamy and buff, and occasionally a light shade of greenish-white is found. They are speckled, spotted and blotched with various shades of reddish-brown and frequently lilac-gray. Occasionally a set shows such small specks all over the surface as to almost obscure the ground-color. The markings are always much heavier at the larger ends, but they rarely form wreaths. The eggs are four or five in number. The set containing the smallest eggs exhibits the following sizes: .70 x .52, .71 x .52, .65 x .49, .68 x .49, .71 x .53; the largest eggs measure .80 x .50, .79 x .54, .79 x .53, .78 x .54, .77 x .54.

662. *Dendroica blackburniæ* (GMEL.) [102.]

Blackburnian Warbler.

Hab. Eastern North America to the Great Plains, casually to Utah and New Mexico. Breeds from Northern United States northward. South in winter to the Bahamas, Central America and Northern South America.

A lovely Warbler, with throat and chest of intense orange yellow. Breeds from the northern States northward, occurring as it does in most of the United States as a spring and fall migrant. Its nests and eggs have been taken in Massachusetts and other more northern New England States. Dr. C. Hart Merriam found a pair of these birds breeding in a grove of large white pines in Lewis county, New York. In the latter part of May the female was observed building, and on the 2d of June the nest contained four fresh eggs of the Warbler and one of the Cowbird. The nest was saddled on the horizontal limb about

eight feet from the ground and about ten feet from the trunk. Blackburn's Warbler has been found breeding in Southern Michigan, where nests have been taken in pine trees at an elevation of forty feet. In all cases the nests are placed high in hemlocks or pines, which are the bird's favorite resorts. Mr. J. W. Preston met with the Blackburnian Warbler breeding in the hemlock and spruce regions of Northern Minnesota. One nest was found placed against the trunk and upon a small branch which grew from the tree at a height of twenty feet; another was built in the fork of a horizontal branch near the end, five feet from the trunk and thirty feet from the ground. One nest contained two, the other three eggs, and in each was a Cowbird's egg. From all accounts the nests of this species are elegantly and compactly made, consisting of a densely woven mass of spruce twigs, soft vegetable down, rootlets and fine shreds of bark; the lining is often intermixed with horse hairs and feathers.

The full complement of eggs is four, and they are described as greenish-white or very pale bluish-green, speckled or spotted, chiefly around the larger end, with brown or reddish-brown and lilac-gray; average size .69 x .50. The sizes of the set taken by Dr. Merriam are .69 x .50, .70 x .45, .71 x .49, .69 x .50, respectively.

663. *Dendroica dominica* (LINN) [103.]

Yellow-throated Warbler.

Hab. South Atlantic States north along the sea coast regularly to Maryland; casually to New York, Massachusetts, etc., south to the West Indies.

The Yellow-throated Warbler breeds commonly in the South Atlantic States, in some portions of which it is resident throughout the year. The nest is placed on branches of pine trees, usually at a considerable elevation. It is also not infrequently built in the pendulous tufts of Spanish moss, which grows abundantly on the live oaks and other trees. Mr. William Brewster found a nest of this species in Camden county, Georgia, May 2, which was placed at a height of thirty-five feet from the ground, on the stout, horizontal branch of a Southern pine, in a thinly scattered grove. The nest was set flatly on the limb—not saddled to it—nearly midway between the juncture with the main trunk and the extremity of the twigs, and was attached to the rough bark by silky fibres. It is composed of short twigs, strips of bark, bound together with Spanish moss and silky down; the lining is soft, hair-like vegetable down. Mr. Arthur T. Wayne obtained nests and eggs of this Warbler in the mixed woods near Charleston, South Carolina. The nests were found built in the tufts of tree moss, and lined with feathers. The heights range from thirty to about forty feet above

the ground. Mr. R. B. McLaughlin found, on June 4, a nest of this species built close to the main body of a small pine tree, in woods near Statesville, North Carolina. The nest rested on a short, dead twig, nineteen feet from the ground. It contained three young birds and one egg.

The eggs are three or four in number, rarely five. They are of a dull greenish or grayish-white, spotted with various shades of brown and lavender-gray almost entirely near the larger ends; in some specimens they form wreaths about the crown. This bird deposits its eggs early, usually in the first part of April. Mr. Norris has two sets taken by Mr. Wayne, April 11 and 14, and consisting of three and four eggs, respectively. They measure .65 x .51, .66 x .49, .60 x .49; .71 x .53, .71 x .53, .69 x .53, .69 x .53.

I can find no authentic account of the nests and eggs of the White-browed Yellow-throated Warbler, or Sycamore Warbler, *D. d. albilora*, inhabiting the Mississippi Valley and north to the Great Lakes.

665. *Dendroica nigrescens* (TOWNS.) [105.]

Black-throated Gray Warbler.

Hab. Western United States, north to Colorado and Oregon, etc.; south in winter into Mexico, etc.

Mr. A. W. Anthony gives this species as a summer resident of Washington county, Oregon, where it frequents the thick firs. In the breeding season it is quite shy and retired, inhabiting the younger growth of firs and dense thickets of alder and willows.

The eggs are four in number. The extensive cabinet of Mr. J. Parker Norris contains a set of four eggs of this Warbler, which was taken in Polk county, Oregon. The nest was situated in a fir tree twenty feet from the ground, and is composed of fine grasses, profusely lined with feathers. The eggs are pinkish-white, spotted with cinnamon-rufous and lilac-gray. The markings are nearly all at the larger ends. They measure .67 x .51, .71 x .54, .71 x .54, .68 x .53.

666. *Dendroica chrysoparia* SCL. & SALV. [106.]

Golden-cheeked Warbler.

Hab. Central Texas and southward to Guatemala.

So far as I am aware all the nests and eggs of this rare Warbler that are in various cabinets have been collected in Comal county, Texas. Mr. Wm. Brewster describes specimens of its nests and eggs taken by Mr. W. H. Werner in that region in the month of May, 1878.* The birds were found invariably in cedar timber. Four nests were discovered, all of which were similar in construction, being built in the forks of perpendicular limbs of the *Juniperus virginiana*, from ten

* Bull. Nutt. Ornith. Club, IV, pp. 77-79.

to eighteen feet from the ground. They were composed of the inner bark of this tree interwoven with spider webs, in color resembling the bark of the tree in which they were built, making them difficult to detect. The interior is lined with hair and feathers. The nest resembles the average nest of the Black-throated Green Warbler, but is larger. Mr. G. B. Benners met with this species breeding in Comal county, Texas, in April, 1884. The nests were placed in cedars from five to ten feet above the ground and similar in materials and construction to those found by Mr. Werner, being neatly and compactly built. The cavity of a typical nest measures about 1.50 to 1.60 across by 1.50 to 2.00 deep.

The eggs are four, rarely five in number. A series of six sets, each containing four eggs, is in Mr. Norris' cabinet. Their ground-color is creamy-white, with a slight gloss, speckled and spotted with shades of red and brown that vary from cinnamon-rufous to burnt umber. Some eggs have specks of lilac-gray. Eggs in a set containing the smallest specimens measure .61 x .51, .64 x .50, .62 x .51, .66 x .50; the largest .68 x .52, .68 x .52, .67 x .49, .67 x .50. The measurements of three eggs taken by Mr. Werner are given as .75 x .57, .77 x .56, .76 x .58.

667. *Dendroica virens* (GMEL.) [107.]

Black-throated Green Warbler.

Hab. Eastern North America, west to the Great Plains, breeding from Northern United States northward. In winter, south through Eastern Mexico and Central America to Panama; also to the West Indies. Casual in Greenland.

The Black-throated Green Warbler breeds from the Northern United States northward—wherever there are tracts of coniferous trees the bird is almost sure to be found during the breeding season, which is generally in the latter part of May or in June. Throughout the pine regions of New England it is an abundant species. Breeds in New York, Michigan, and it is also stated to breed in Northern Illinois. A few pairs are said to remain during the summer months in Northern Ohio. The nest of this Warbler is placed in the fork of a horizontal bough of a coniferous tree, usually at a considerable height—thirty to fifty feet, but frequently as low down as fifteen or even five feet above the ground. Mr. L. C. Holmes, of Standish, Maine, states that all the nests he has found were in low, scrubby firs. The typical nest is a compact, well-woven fabric made of thin bark strips, twigs, dry grasses, wool and feathers, lined with hair and vegetable down.

The eggs are four in number, and have a ground-color which ranges from white to buffy or creamy-white. The markings are specks and spots of cinnamon-rufous, chestnut, and lilac-gray, forming indistinct wreaths about the larger ends. This description is taken

from eight sets of the eggs in Mr. Norris' cabinet. The set containing the smallest eggs was collected on the Island of Grand Manan, New Brunswick, June 17, 1887. They offer the following measurements: .60 x .49, .61 x .49, .61 x .49, .62 x .49; another, the largest eggs: .70 x .48, .71 x .49, .69 x .50, .71 x .49.

668. *Dendroica townsendi* (NUTT.) [108.]

Townsend's Warbler.

Hab. Western North America (but chiefly near the Pacific coast), north to Sitka, east during the migrations to the Rocky Mountain region; south in winter to Northern Central America.

Townsend's Warbler is well known as a Pacific coast species. It inhabits the pine regions, nesting similar to *D. virens* in coniferous trees. The eggs are described as buffy-white, speckled and spotted with reddish-brown, blackish and lilac-gray; average size, .64 x .53.

669. *Dendroica occidentalis* (TOWNS.) [109.]

Hermit Warbler.

Hab. Western United States chiefly near the Pacific coast, east during migrations to the Rocky Mountains; south in winter to Northern Central America.

Two nests of the Western Warbler were found by C. A. Allen during the season of 1886, in Blue Canon, California. The first contained two eggs June 4, and was left for a full set. Three days after it was found in a dilapidated condition and the eggs destroyed, evidently the work of squirrels. The eggs, however, are described as resembling those of the Yellow Warbler, *D. aestiva*, but were more heavily marked. Another nest was found June 7, containing three young birds and one was found seven or eight years previous also containing three young. These nests were all similarly placed and well concealed in "pitch pines" from twenty-five to forty feet above the ground on thick, scraggy limbs, and very difficult to find. The cavity of the nest taken June 7, 1886, measures 1.25 deep by 2.50 across; external diameter 4.50 by 2.00 in depth. It was composed of fibrous stalks of plants, fine dead twigs, lichens, a little cotton twine, and is lined with soft inner bark and hair.

Captain Bendire has what he believes to be a set of the eggs of this Warbler taken at Big Meadows, Oregon, on the banks of the Des Chutes River near its head waters, June 12, 1882. The nest was placed in the crotch of a willow overhanging the water, and the parent was shot but fell in the water and was carried away. The eggs are described as being about the size of those of *D. aestiva*, and resemble the eggs of *D. blackburniæ*, with the exception of the ground color, the green of which is not as perceptible as in the eggs of *black-*

burniæ. They have a faint grayish-green ground, two of them heavily spotted with lilac and dark umber-brown.*

671. *Dendroica vigosii* (AUD.) [III.]

Pine Warbler.

Hab. Eastern United States, north to Ontario and New Brunswick; wintering in more Southern States and Bahamas; Bermudas.

The Pine-creeping Warbler breeds in various localities throughout its United States range and apparently only in regions where there are tracts of coniferous trees. Its nest is always placed on the horizontal boughs in pines or cedars, ranging all the way from eight to eighty feet above the ground, usually at an elevation of from thirty to forty feet. In the pine districts of the States along the Atlantic coast from the Carolinas northward the bird is a common breeder, nesting in March. Mr. R. B. McLaughlin took nests containing eggs in Iredell county, North Carolina, March 25. Mr. C. S. Brimley found the birds building nests in Wake county, of the same State, in the latter part of March. The nest, according to these observers, is hard to discover, and in most cases it is found by watching the birds carry building material, which consists of bark-strips, bits of weed and oak leaves, caterpillar's silk, and vegetable sedges. It is compactly built and warmly lined with horse hair and feathers. The eggs are four, rarely five in number. Nineteen sets of the eggs of this Warbler are in Mr. Norris' cabinet, eighteen of which have a ground-color that varies from a dull whitish to gray or purplish-white, and the markings are in the form of spots and specks of lilac-gray and burnt umber, more dense near the larger ends, and generally form wreaths. The nineteenth set seems to be of a very rare phase, being pinkish-white with brick-red markings. Two sets give the following respective measurements: .69 x .53, .66 x .51, .67 x .51, .69 x .51; .75 x .55, .75 x .55, .71 x .55, .76 x .55. The average size is .70 x .52.

672a. *Dendroica palmarum hypochrysea* RIDGW. [IIIa.]

Yellow Palm Warbler.

Hab. Atlantic coast of North America. Breeds from New Brunswick and Nova Scotia to Hudson Bay. Winters in the South Atlantic and Gulf States.

There are two forms of the Palm Warbler, *D. palmarum* (Gmel.) being the form of the interior region north in summer to Great Slave Lake, migrating south through the Mississippi Valley to the Gulf States, Florida, Bahamas, etc., and casually during migrations east of the Alleghanies. The present form, *hypochrysea*, breeds from Nova Scotia and New Brunswick northward. Its nest is placed on the ground in open situations, usually on the edge of a swampy thicket

* Cf. Brewster, *The Auk*, IV, pp. 166-167.

and it is composed of weed-stalks, grasses, rootlets and pine leaves, lined with fine grasses and hair. The eggs, usually four in number, are yellowish or buffy-white, with a roseate tinge, speckled with brown and lilac. Average size .65 x .51.

673. *Dendroica discolor* (VIEILL) [114.]

Prairie Warbler.

Hab. Eastern United States, north to Michigan and Southern New England; south in winter to Florida, Bahamas and West Indies.

The Prairie Warbler is a rather common breeding bird in many localities east of the Alleghanies from the latitude of Massachusetts southward; west of this region it appears to be rare during the summer months. It is known, however, to breed in Michigan and regularly (?) in Northern Ohio, but I have no late authentic records to that effect from the latter region. Mr. H. K. Jamison found the Prairie Warbler breeding abundantly on the 13th of May, in a scrubby oak thicket in Fairfax county, Virginia. The nests were placed from two to seven feet above the ground. Dr. Coues found it nesting in astonishing numbers within a small area, near Washington, D. C., in the latter part of May. The nests were only a few feet from the ground, and were placed preferably in hickory and dogwood bushes. Mr. Worthington found it nesting in low bushes and also in small birch and oak saplings on Shelter Island, New York, in the latter part of May and first half of June. The nest is a very pretty, deeply cup-shaped fabric, composed of vegetable fibres and fine grasses, closely felted and lined with hair.

Four, rarely five, eggs are laid. Twelve sets of these eggs are in Mr. Norris' cabinet, many of which were taken by C. L. Rawson, in New London county, Connecticut. Their ground-color appears white until they are compared with pure white eggs, when a very faint tinge of greenish is perceptible. The markings are specks of chestnut and burnt-umber, and usually in the form of wreaths about the larger end. Two sets taken, respectively, May 31, 1880, and June 14, 1888, near Norwich, Connecticut, exhibit the following sizes: .59 x .47, .64 x .48, .60 x .45, .63 x .47; .68 x .50, .66 x .50, .67 x .47, .67 x .47.

674. *Seiurus aurocapillus* (LINN.) [115.]

Oven-bird.

Hab. Eastern North America, breeding from about 38° northward, west to eastern base of Rocky Mountains. In winter, south to Southern Florida, West Indies and Central America.

Called Oven-bird on account of the remarkable nest which it usually builds. This, in its typical form, is roofed over, arched or domed, with an entrance more or less to one side like the mouth of an oven. It is placed on the ground, or rather embedded in a depression

in the earth amongst leaves, at the foot of a tree or bush near a fallen log, or under the shelter of tall grass in woods. On the whole, it is loosely constructed of skeleton leaves, grasses, strips of wild grape vine bark, slender weed stalks, with a lining of finer grasses and often horse hair. The bird is known by other names, such as Golden-crowned Thrush, Golden-crowned Wag-tail Warbler, and Golden-crowned Accentor. An abundant species in the woods of Eastern North America, where it is found breeding from Kansas, the Ohio Valley and Virginia northward into the Arctic regions in the months of May, June and July, according to latitude and season.

In the United States the nesting time is chiefly in the latter half of May and June. The birds inhabit dry and wet leafy woods, and seem to be partial to those through which a small stream flows, and where wild vines climb to the upper branches of trees whose foliage throws darkened shadows beneath. In these retreats, during the mating season, the bird's incessant, emphatic *crescendo* chant may be heard. It is repeated with such vehemence that it is really startling in solitary woods.

The eggs of the Oven-bird are four or five in number, rarely six. Their color is white or creamy-white, more or less glossy, and the markings are in the form of specks and spots, often sparsely scattered over the entire surface, but usually more heavily marked at the larger ends, and frequently wreathed. The color of the markings is reddish-brown of various shades and lilac-gray. Ten specimens measure .70 x .59, .74 x .57, .72 x .59, .76 x .58, .79 x .60, .79 x .63, .80 x .62, .82 x .62, .84 x .63, .82 x .61. A common size in a large series is .78 x .58. Though well concealed and hard to find by the collector, the nest of this species often contains the eggs of the notorious Cowbird. Mr. Lynds Jones found a nest near Grinnell, Iowa, containing no less than five eggs of the Cowbird.

675. *Seiurus noveboracensis* (GMEL.) [116.]

Water-Thrush.

Hab. Eastern North America as far west as the Mississippi Valley. Breeds from the Northern United States northward; south in winter to the Gulf States, West Indies, Northern South America.

The Small-billed Water-thrush, New York Accentor, or Wag-tail Warbler breeds from Northern United States northward. It frequents swampy woods and open, wet places, nesting on the ground or in the roots of overturned trees at the border of swamps. It is more or less abundant in all suitable places in the New England States and New York. It has been found breeding in Northern Illinois and, in Iowa, near Des Moines, according to Messrs. Keyes and Williams, a female was seen feeding its young in June, 1884. A common summer resident

in Manitoba. Mr. M. K. Barnum, of Syracuse, New York, found a nest of this species in the roots of a tree at the edge of a swamp, on May 30. It was well concealed by the overhanging roots, and the cavity was nearly filled with moss, leaves and fine rootlets. The nest at this date contained three young and one egg.

The eggs of this species are four or five in number. Two sets are in Mr. Norris' cabinet; one taken near Listowel, Ontario, from a nest under a stump in a swamp, on June 7, 1888; the other set is from New Canada, Nova-Scotia, and was taken July 30, 1886. The nest was built in moss on the side of a fallen tree. They are creamy-white, speckled and spotted, most heavily at the larger ends, with hazel and lilac, and cinnamon-rufous; in the last mentioned set forming wreaths near the larger ends. Their sizes are .78 x .54, .78 x .56, .77 x .55, .77 x .54; .78 x .61, .78 x .63, .77 x .60, .77 x .59.

676. *Seiurus motacilla* (VIEILL) [117.]

Louisiana Water-Thrush.

Hab. Eastern United States, north to the Great Lakes and Southern New England, west to the plains. In winter, Gulf States, West Indies, Eastern Mexico and Middle America.

The Large-billed Water-Thrush, or Large-billed Wag-tail Warbler breeds more or less commonly in suitable places throughout its United States range south of about latitude 42°. It is found during the summer months as far west as Kansas, where Col. Goss notes it as a common summer resident, and begins laying about the 8th of May. It is rare in Nebraska, and a few remain to breed in Iowa, but it does not appear to occur in Minnesota. It is a common summer resident in Ohio, but of irregular distribution. Mr. William Brewster found this species breeding in Knox county, Indiana, and gives an excellent account of its nest and eggs.* Hon. J. N. Clark met with it breeding quite commonly in Middlesex county, Connecticut, where he took complete sets of eggs as early as May 7.† In the northwestern portion of North Carolina (Iredell county), Mr. R. B. McLaughlin took eggs of this species in April and May. The nest, according to all observers, is built and carefully hidden in the cavities among the roots of fallen trees, old logs, stumps, or mossy banks—always in swampy places. They are usually bulky, and made of partially decayed leaves, which the female extracts from the bog with mud adhering to them. These are laid together, and when dry make a solid and compact structure. The inner nest is formed of grape-grass, and sometimes hair. The great similarity of the materials in the nest to the external surroundings makes it difficult to detect. Mr. McLaughlin says that

* Bull. Nutt. Ornith. Club, III, pp. 133-135.

† For Mr. Clark's extended account, see Ornithologist and Oologist, VII, pp. 145-147.

this bird in North Carolina prefers the smaller streams as breeding places—nesting in the exposed roots of trees along the banks. The eggs are four or five, sometimes six in number, the usual number being five. Twelve sets in Mr. Norris' cabinet exhibit considerable variation in their general coloration, size, etc. The ground color varies from a pure white to a deep creamy-white, thickly speckled with cinnamon-rufous or chestnut (more heavily near the larger ends) and lilac-gray. Some specimens have very bold spots of chestnut, and the specks are entirely wanting. A set taken April 30, 1888, in Iredell county, North Carolina, offers the following sizes: .71 x .57, .74 x .58, .73 x .48, .71 x .58, .74 x .59; another set taken May 1, .86 x .57, .83 x .57, .83 x .59, .81 x .59, .83 x .60.

677. *Geothlypis formosa* (WILS.) [119.]

Kentucky Warbler.

Hab. Eastern United States, chiefly west of the Alleghanies to the Plains, north to the Great Lakes and Southern New England; in winter, south through Eastern Mexico and Central America to Panama; Cuba.

The Kentucky Warbler is particularly an abundant species in the Lower Mississippi Valley—Southern Indiana and Illinois, and southward to Southeastern Texas. Col. Goss gives it as a common summer resident of Kansas; begins laying about May 20. Its nests and eggs have been taken in Southern Illinois and Indiana in the middle of May. It is a rare summer resident in particular localities in Ohio; more common in the southwestern portion. Mr. Frank W. Langdon found a nest containing four eggs of the Warbler and one of the Cowbird near Madisonville, Hamilton county, Ohio, on May 28. The eggs were far advanced in incubation. In Jones' magnificent work "Nests and Eggs of Birds of Ohio" there is a beautiful illustration of a nest which was found on the 20th of May, 1880, in Kentucky, near the Ohio line. The bird has been discovered nesting near Sing Sing, New York, in June; at Fort Lee, New Jersey. Its nests have also been taken in the District of Columbia in May. John S. Cairns found a nest of the Kentucky Warbler in Buncombe county, North Carolina, June 15, 1886.

Mr. C. J. Pennock in "Birds of Chester county, Pennsylvania"* gives it as a rather common summer resident. It has been found nesting in that region by Mr. Pennock, Mr. Ladd, Thomas H. Jackson and others. The nest of this species is placed on the ground in woods; it is usually very bulky, composed of leaves, grasses, and lined with rootlets or horse hair. It is generally situated at the foot of a bush or weed stalk. Mr. Pennock informs me that he found the nest deeply imbedded in leaves with weeds growing around

* In *The Oologist*, IV, pp. 1-10.

them; others were discovered among leaves at a considerable distance from grass or weeds.

The eggs are four or five, rarely six, in number. They are white, variously speckled or spotted with burnt umber, cinnamon-rufous and lilac-gray, chiefly and more heavily at the larger ends. Three sets of the eggs in Mr. Norris' collection, taken June 9 and 19, 1885, and May 28, 1888, respectively, give the following measurements: .79 x .59, .77 x .59, .77 x .58, .78 x .56; .77 x .56, .79 x .57, .78 x .56, .75 x .56; .65 x .54, .66 x .55, .67 x .55, .65 x .55; average .73 x .57.

678. *Geothlypis agilis* (WILS.) [118.]

Connecticut Warbler.

Hab. Eastern North America, breeding north of the United States.

This is one of the rarest of North American Warblers, seen in the United States only during the spring and fall migrations; in the latter season abundant in some localities. So far as I am aware the only authentic nest and eggs of this species that are known are those taken by Mr. Ernest E. Thompson, who found a nest June 21, 1883, on a moss mound in a tamarack swamp near Carberry, Manitoba. It was composed entirely of dry grass, sunken level with the surface. The eggs were four in number and measured .75 x .56. Before blown they were of a delicate creamy-white, with a few spots of lilac, brown, and black, inclining to form a ring at the large end. The nest with eggs and parent birds are now in the National Museum.*

679. *Geothlypis philadelphia* (WILS.) [120.]

Mourning Warbler.

Hab. Eastern North America, breeding from the Northern United States northward; in winter, south to Central and Northern South America.

The Mourning Warbler is known to breed in the mountainous portions of Pennsylvania, New England, New York, Michigan, Minnesota and Eastern Nebraska northward. It has been found nesting in Illinois, south of latitude 39°. Its nest is built on or near the ground in woods. One discovered by Mr. John Burroughs in the State of New York was built in ferns about a foot from the ground, on the edge of a hemlock wood. It contained three eggs. Mr. Wm. L. Kells found what doubtless was the nest of this species in a swampy woods near Listowel, Ontario, early in June, 1877. The nest was placed in the horizontal branch of a small cedar a little more than a foot above the ground. It was composed of fine strips of bark and other fibrous material, lined with fine hair. This nest contained four eggs which are white with a sprinkling of reddish dots near the larger ends.

The eggs are described as being colored like those of *G. formosa* or *G. agilis*; size .71 x .54.

* Cf. Steton, *The Auk*, Vol. I, pp. 192-193.

680. *Geothlypis macgillivrayi* (AUD.) [121.]**Macgillivray's Warbler.**

Hab. Western United States, north to British Columbia; in winter, south through Mexico, and Central America to Panama.

Macgillivray's Warbler breeds throughout its United States range—in Colorado, Utah, Montana, Idaho, Washington Territory, Oregon, and in the mountains of California. Mr. A. W. Anthony gives it as a common summer resident of Washington county, Oregon, where it frequents the low, tangled shrubbery, and is found much of the time on the ground. A nest was discovered placed in a hazel at an elevation of one foot. Mr. H. D. Minot obtained a nest at Manitou, Colorado, June 21, which was placed in a scrub-oak five feet above the ground and three feet from a traveled road. Mr. Charles F. Morrison states that this species is one of the most common birds of La Plata county, Colorado, where it nests in juniper bushes, four to six feet up.

A set of three eggs in Mr. Norris' cabinet was taken May 18, 1884, near Riverside, California. The nest was situated in a small bush near the ground, and was made of dry tules, lined with horse hair. Incubation had begun. The eggs are creamy-white, marked near the larger ends with spots and pen lines (somewhat like an Oriole's egg) of clove brown. Their sizes are .74 x .54, .73 x .53, .71 x .51. The eggs of this species are three to five in number, usually four, and average .72 x .52.

681. *Geothlypis trichas* (LINN.) [122, *part.*]**Maryland Yellow-throat.**

Hab. Eastern United States, north to Canada and Nova Scotia; in winter, South Atlantic and Gulf States and the West Indies.

This active little Warbler breeds throughout its United States range. Begins building about the middle of May. The nest is not an easy one to find, being built on the ground, snugly tucked under the foot of bush or tussock of rank grass, and sometimes partly roofed over like the Oven-bird's. The favorite resorts of this Warbler are in low, swampy places or in the shadowy undergrowth of woodland. It resembles a wren in its fondness for bush and brier. On approaching such places early in spring one is almost sure to be saluted with its sprightly song, full of energy. My friend, Mr. Thomas M. Earl, has given me the best description of this bird's song that I know of. One evening in May, 1884, he was returning from a day's hunt, and after a rest on an old log, he was about to start on his journey homeward. At this instant a little Yellow-throat mounted a small bush, and in quick succession said, *tackle me! tackle me! tackle me!*

The eggs of this species are four or five, rarely six in number, clear, crystalline white, but often creamy-white, speckled, chiefly at

the larger end with reddish-brown, dark umber and black; in some, occasional lines or scrawls appear. Two sets of four eggs each measure, respectively, .71 x .53, .71 x .50, .69 x .50, .69 x .51; .67 x .48, .69 x .50, .66 x .48, .68 x .49; the average is .69 x .52.

681a. *Geothlypis trichas occidentalis* BREWST. [122, part.]

Western Yellow-throat.

Hab. United States west of the Mississippi Valley. In winter, the more southern portion of the United States, chiefly west of the Mississippi, and south through Western and Central Mexico.

The same general habits which are common to the Eastern Yellow-throat are also characteristic of this sub-species in the West. Dr. Merrill states that its favorite haunt, and one in which it is very common in the region of Fort Klamath, Oregon, is among the tules in company with Marsh Wrens and Yellow-headed Blackbirds.

The eggs average a trifle smaller than those of *G. trichas*; and are less heavily marked; .67 x .50.

683. *Icteria virens* (LINN.) [123.]

Yellow-breasted Chat.

Hab. Eastern United States to the Great Plains, north to Ontario and Southern New England; south in winter through Eastern Mexico to Northern Central America.

The Yellow-breasted Chat may be found breeding in all suitable places throughout its range. It inhabits the thickets and brambles of low undergrowth, preferredly in the vicinity of a marsh, and the bird is oftener heard than seen. In the mating season it is the noisiest bird in the woods, at which time it may be observed in its wonderful aerial evolutions, uttering its medley of sputtering, cackling, whispering and scolding notes, interluded with loud whistles.

The nest is built in brier thickets from two to five feet above the ground, and is composed of withered leaves, dry grasses, strips of bark and lined with finer grasses. Large colonies of these birds are often found nesting in a single locality. A strange nesting place of a pair of Chats is recorded by Mr. Charles F. Batchelder as observed by Mr. C. W. Beckham in Howard county, Maryland, where a pair built in a Wren box attached to one of the pillars of a piazza which partially fronts a small ravine. The birds seemed little disturbed by the occasional visits of members of the family.

The eggs of the Chat are three or four in number, usually four. They are white with a glossy surface; some specimens have a pinkish tinge, others greenish. The markings are light reddish, cinnamon-rufous or chestnut, in the shape of specks and spots, which are heavier and bolder at the larger ends; again specimens are found with the markings evenly distributed over the entire surface or in a well defined wreath around the larger end, with the rest of the egg unmarked.

They vary from .84 to 1.02 in length by .62 to .70 in breadth. The average size of ten specimens is .92 x .71.

683a. *Icteria virens longicauda* (LAWR.) [123a.]

Long-tailed Chat.

Hab. Western United States from the Great Plains to the Pacific; south into Mexico.

The general habits, nests and eggs of this Western sub-species are the same as those of *Icteria virens*. Col. Goss says it is not an uncommon summer resident of Western Kansas and Mr. Lloyd gives it as an abundant breeder in Tom Green and Concho counties, Texas.

684. *Sylvania mitrata* (GMEL.) [124.]

Hooded Warbler.

Hab. Eastern United States, west to the edge of the Great Plains, north to Southern portions of Michigan, New York and New England; south in winter to Cuba, Jamaica; through Eastern Mexico and Central America.

The Hooded Flycatching Warbler breeds throughout its United States range. Col. Goss mentions it as a rare summer resident of Eastern Kansas where it begins laying the last of May. It is a common resident in the cane-brakes and low shrubbery along the Lower Wabash in Southern Illinois. In Georgia the Hooded Warbler deposits its eggs about the middle of May. Mr. Arthur T. Wayne has taken fresh eggs near Charleston, South Carolina, in the first week of June. The bird is a rare summer resident of Ohio but I have no recent records of its nest and eggs having been taken in the State. Dr. Kirtland notices its breeding in the vicinity of Cleveland. For a number of years the Hon. John N. Clark has observed this Warbler breeding in Middlesex county, Connecticut, usually in the latter part of May or first half of June. The bird is one of the liveliest of its tribe and is very active in catching insects on the wing in the manner of the true Flycatchers. It frequents thickets and undergrowth of high and low lands, where it skillfully conceals itself when pursued. It has a peculiarly graceful manner of closing and spreading its broad tail, like the Redstart.

The nest of the Hooded Warbler is built in the low bushes of undergrowth, usually within a few inches or feet of the ground. It is composed of leaves, shreds of bark, and scales of beech buds, all compactly woven and secured together with spider webs; the lining in some nests is entirely horse or cattle hair, others are found lined with fibres of grape-vine bark, or mixed with both.

The eggs are four in number, rarely five. The usual ground-color is white, or creamy-white, and the markings are generally specks and spots of chestnut or burnt umber and lilac-gray, principally near the larger end, and often forming wreaths. In a series of sixteen sets

in Mr. Norris' collection the sizes of the set containing the smallest eggs are, .66 x .51, .69 x .52, .68 x .53, .69 x .52; the largest, .75 x .53, .73 x .54, .72 x .53, .73 x .55; the average is .70 x .53.

685. *Sylvania pusilla*. (WILS.) [125.]

Wilson's Warbler.

Hab. Eastern North America, west to and including the Rocky Mountains, and to the coast of Behring Sea. Breeds from northern border of United States and higher Rocky Mountains northward. South in winter through Eastern Mexico and Central America.

The Green Black-capped Flycatching Warbler, or Wilson's Black-capped Warbler, breeds from the northern border of the United States northward, chiefly however in the higher latitudes. Mr. H. D. Minot found a nest of this bird containing five fresh eggs, on June 22, at Seven Lakes, on Pike's Peak, Colorado. The nest was found on the ground, under a low, spreading branch of a dwarf willow, at the edge of a swamp.*

The eggs of this species are four or five, sometimes six in number. A set of five in Mr. Norris' cabinet was taken June 15, 1887, in Boulder county, Colorado. The nest was well imbedded in the ground among some willow twigs, and was composed of leaves and swamp grass externally, lined with fine grasses and a few hairs. The eggs are white, speckled with cinnamon-rufous and lavender-gray. Nearly all the markings are near the larger ends, where they form wreaths. Their respective measurements are .59 x .49, .60 x .49, .60 x .48, .58 x .48, .60 x .48.

685a. *Sylvania pusilla pileolata*. (PALL.) [125a.]

Pileolated Warbler.

Hab. Western North America, chiefly along or near Pacific coast, north to Kadiak Island, Alaska. South in winter through Western Mexico to Costa Rica.

The Western Black-capped Flycatching Warbler is a common breeding bird in various sections on the Pacific coast from Southern California northward. Mr. W. Otto Emerson states that in the vicinity of Haywards, California, he has taken eggs as early as April 22, and full-fledged young were observed by May 17. The birds nest in the thickets along water courses, and rear at least two broods in a season. Prof. Evermann found a nest near San Buenaventura, California, on May 23, 1881, placed about a foot from the ground, in a clump of blackberry bushes. Dr. Merrill notes that the bird breeds in considerable numbers in the swampy willow thickets along Wood River and Fort Creek, in the region of Fort Klamath, Oregon. The nest is composed of leaves, bark strips, weed stems, vegetable fibres, rootlets, lined with finer grasses. Often it is made entirely of leaves and lined

* See foot-note in New England Bird Life, Vol. I, pp. 172-173.

with fibrous roots. It is placed in bushes from one to four feet above the ground.

The eggs are four in number, white or creamy-white, speckled with reddish-brown and lilac-gray; in some specimens these markings are in the form of a wreath near the larger ends. A set in Mr. Norris' collection, taken at Waterville, California, May 6, 1875, gives the following measurements: .62 x .48, .60 x .49, .60 x .48, .60 x .48; another, collected at Alameda, California, April 11, 1885: .57 x .49, .58 x .49, .58 x .50. Average size, .60 x .48.

686. *Sylvania canadensis*. (LINN.) [127.]

Canadian Warbler.

Hab. Eastern North America, west to the Great Plains, north to Newfoundland, Southern Labrador and Lake Winnipeg, south in winter through Eastern Mexico and Central America to Ecuador.

The Canada Flycatching Warbler breeds occasionally from the Middle States, and regularly from New England northward. In other Northern States it breeds sparingly. Mr. Robert B. Lawrence found a nest of the Canadian Warbler in the mountains of Pike county, Pennsylvania, on June 9, 1887. The nest was placed in the roots of an old stump, and contained four young birds and one unhatched egg. It has been known to nest in Northern Illinois. In some portions of Canada it is a common breeder. Thomas McIlwraith says that a few remain to spend the summer in Southern Ontario, while the majority go farther north. Mr. William L. Kells found it nesting in the low, swampy woodlands near Listowel, and obtained sets of its eggs in the latter part of May and first week of June. The nests were found in the cavities of upturned roots of trees, and in the depressions in banks near pools of water. They are generally well hidden by weeds or grass, and are commonly placed on the ground, in underbrush, by the side of a log or at the foot of a bush. Their composition is dry weeds, fine roots, with a lining of hair.

The eggs are four or five, white or buffy, speckled or spotted, chiefly round the larger end, with reddish-brown and lilac-gray. Their average size is .68 x .51. Mr. Norris has a set of five which were taken near Barnard, Maine, June 14, 1875. These measure .67 x .50, .67 x .49, .66 x .48, .66 x .48, .66 x .49.

687. *Setophaga ruticilla* (LINN.) [128.]

American Redstart.

Hab. Eastern North America, north to Fort Simpson, west to and including the Rocky Mountains. In winter, West Indies, Eastern Mexico, Central America, and south to Northern South America.

The richly-colored Redstart breeds in most of its United States range and wherever found in British America. It is an abundant breeding species from the Northern States northward. Nests in May

and June. In Ohio I have invariably found it in the woods which are the favorite haunts of the Oven-bird, *Senirus aurocapillus*. About four miles east of Columbus, in a thick damp woods of about fifteen acres in extent, I counted no less than twenty-seven nests in a single day. In many sections the birds are really more common than the Yellow Warbler, *D. æstiva*. The nest built by the Redstart is a beautiful, compact, cup-shaped structure, made of shreds of plants and hempen fibres, held together with spiders' webs; the lining is of fine grasses and hair. It is either saddled on a branch or placed in the forked twigs of a small tree or sapling, usually from six to twelve feet above the ground, but often as high as thirty. A curious habit of the Redstart is that of opening and closing its fan-like tail while flitting about in the trees and bushes.

The eggs are four, rarely five, in number and they are subject to a remarkable variation in size and color. In a large series the ground color will vary from white to greenish-white or grayish-white. The markings are specks or spots of cinnamon, brown and lilac-gray, chiefly round the larger end. Ten specimens selected on account of their sizes give the following measurements: .57 x .47, .60 x .45, .61 x .47, .62 x .48, .64 x .52, .66 x .51, .67 x .48, .68 x .49, .69 x .48, .70 x .50.

688. *Setophaga picta* SWAINS. [129.]

Painted Redstart.

Hab. Southern Arizona and New Mexico, south to highlands of Mexico.

This is the Painted Flycatching Warbler of so striking colors. It is found in Southern Arizona and New Mexico southward into Mexico. It frequents shrubbery near water and in some localities is abundant. Mr. Walter E. Bryant gives the first description of the nest and eggs of this species from specimens obtained by Mr. Herbert Brown in the Santa Rita Mountains, Arizona, June 6, 1880.*

The nests and eggs do not resemble those of *S. ruticilla*. The nesting-site is within cavities in banks or under projecting stones. A nest was taken by Mr. Brown from a hole in a road bank in the mountains; this Mr. Bryant describes as being loosely constructed of dry gray grasses and fine shreds of vegetable bark, and lined with black and white horse hairs. It contained four incubated eggs of a light pearl-white thickly dotted with brownish-red and traces of lilac on the larger end. They measure .57 x .48, .60 x .50, .64 x .50, .58 x .49. Another set of four was taken from a similar nest beneath a small bush. The eggs are somewhat larger and spotted over the entire egg, the markings clustering about the larger end. The sizes of three of them are .69 x

* Bull. Nutt. Ornith. Club, VI, pp. 176-177.

.52, .65 x .51, .66 x .50; the fourth was broken. Mr. William Brewster describes a nest and eggs of the Painted Redstart obtained by Mr. F. Stephens in the Santa Rita Mountains.* The nest was under a projecting stone in a bank near a small stream.

The three eggs which this nest contained were clear, dead white, delicately spotted with light reddish-brown, the markings being sparsely distributed over the surface and handsomely wreathed about the larger end. They measure .64 x .51, .64 x .50, .66 x .49. The average size is .65 x .48.

690. *Cardellina rubrifrons*. (GIRAUD.) [131]

Red-faced Warbler.

Hab. Highlands of Northern Central America (Guatemala) and Mexico, north to Southern Arizona.

The first knowledge we have concerning the nests and eggs of this handsome Warbler is from specimens taken by Mr. W. W. Price on May 31, 1888, in the pine regions of Southern Arizona — the Huachuca Mountains. The nest was placed on sloping ground, in a slight hollow, and contained four fresh eggs, and dissection of the female showed that the full clutch had been laid. The nest was so well hidden by a few sprays of columbine that it would have been overlooked had the bird not been started directly from it. It was so loosely built that it crumbled to fragments on being removed. The chief substance was fine, fibrous weed stalks, while the lining consisted of fine grass, rootlets, plant fibres and a few hairs. Skeleton leaves and bits of fine bark were intermingled throughout the nest, and the ground on which it was placed was so damp that the bottom part was badly decayed. The eggs from this nest were presented by Mr. Price to the National Museum Collection, at Washington, D. C., and are described by Capt. Charles E. Bendire as ovate in shape; their ground color "a delicate creamy-white, spotted with small blotches of cinnamon-rufous and a few dots of heliotrope-purple and pale lavender. These form a wreath around the larger end. They resemble the eggs of *Helminthophila lucix* and *H. virginix* to a certain extent."†

[694.] *Motacilla alba*. LINN. [69.]

White Wagtail.

Hab. Europe and Northern Asia; in winter, Northeastern Africa and Southern Asia. Accidental in Greenland.

The common White Wagtail of Europe claims a place in the North American avifauna as an accidental visitant of Greenland. It is found in all portions of Europe, and its favorite haunts are meadows in the vicinity of water, villages and old houses. It nests on the

* Bull. Nutt. Ornith. Club, VII, pp. 140-141.

† The Auk, V, pp. 335-336.

ground among the grass of the meadows, in crevices of rocks or old buildings; in the roots of trees along the banks of streams; under bridges. The nests are constructed of small sticks, twigs, grass, straws, leaves and rootlets, the lining being of wool and hair. The eggs are four, five, six, or even seven in number. A set of six eggs in my cabinet, taken May 10, 1880, in Staffordshire, England, have a grayish-white ground-color, and are speckled all over the surface with minute ash-gray specks. Several single specimens have markings that are of a decided dark brown color. The set of six measure: .77 x .58, .79 x .56, .76 x .55, .79 x .59, .78 x .56, .77 x .57. The average size is .75 x .55.

696. *Budytes flavus leucostriatus*. (HOM.) [70.]

Siberian Yellow Wagtail.

Hab. Alaska, north of the Peninsula; Eastern Siberia and Kamtschatka, wintering in Eastern China.

This Wagtail occurs abundantly in Alaska. Dr. Stejneger states that *B. leucostriatus* is a common breeding bird in the environs of Petropaulski, Kamtschatka, being found during the months of June and July everywhere on the low marshy grounds surrounding the lakes, fresh-water ponds and brackish lagoons of the vicinity. On Behring Island single individuals were seen until June 10. The nest of this bird is placed on the ground and usually concealed by a tussock of grass, projecting stone, etc.

The eggs are dull white, yellowish or brownish-white, profusely covered with fine dots of reddish-gray, dark brown or black; average size, .76 x .55.

697. *Anthus pensilvanicus*. (LATH.) [71.]

American Pipit.

Hab. Whole of North America, breeding from the high mountains of Colorado and from Labrador northward to the Arctic coast. Winters in the Gulf States, Mexico and Central America.

Known as the American Titlark, Brown lark, Louisiana Lark and Wagtail. An abundant and a well-known bird everywhere in fields and plains throughout North America. In the United States it is seen chiefly in flocks in fall, winter and spring. Breeds in the mountains of Colorado (above timber line), and from Labrador northward to the Arctic regions. The nest is placed on the ground, and is large and bulky, made of coarse, dry grasses and moss loosely put together.

From four to six dark chocolate-colored eggs are laid, the surface of which is marked or overlaid with numerous specks and streaks of grayish-brown. A set of five eggs in Mr. Norris' cabinet was taken July 3, 1888, on Mount Audubon, Snowy Range, Rocky Mountains, Colorado, at an elevation of 11000 feet. The nest was well concealed, being at the side of, and partly under a large stone. It was composed

wholly of grasses. The eggs are grayish-white, but so thickly are they covered with specks of hair-brown that they appear to be almost of a uniform tint of brown. At the larger ends these specks are heavier, producing the appearance of a darker color. The five eggs measure: $.79 \times .58$, $.78 \times .58$, $.81 \times .58$, $.81 \times .58$, $.80 \times .55$, respectively. The average size is $.78 \times .58$.

[698.] *Anthus pratensis* (LINN.) [72.]

Meadow Pipit.

Hab. Europe; northern portions of Africa in winter; occasional in Southern Greenland.

The European Titlark very closely resembles the American bird, *A. pensilvanicus*, in appearance and all its general characteristics. An occasional visitant in Southern Greenland. It inhabits the whole continent of Europe, where it is the most common and best known of its tribe. In Great Britain the Titlark is found throughout the year. It frequents all kinds of localities—hill or valley, marsh or moorland, shady woods and flowery meadows, the neighborhood of busy towns, or the sandy sea-shore. The nest is built on the ground, and is composed of dried grasses, lined with finer grass, moss and a few hairs.

The eggs are four to six in number, and scarcely any two sets are exactly alike in color; the ground tint may be blue-gray, reddish-brown or yellow-brown; in all cases the eggs are spotted and mottled with darker brown or mouse-gray, giving to the surface a uniform dark appearance. A set of five eggs collected by Mr. W. Wells Bladen, June 2, 1879, in Staffordshire, England, exhibits the following sizes: $.79 \times .59$, $.80 \times .59$, $.83 \times .58$, $.84 \times .59$, $.85 \times .60$. A set of four from Suffolk measure, respectively, $.78 \times .58$, $.75 \times .54$, $.74 \times .57$, $.77 \times .56$. The average size is $.78 \times .57$.

700. *Anthus spragueii* (AUD.) [73.]

Sprague's Pipit.

Hab. Interior plains of North America. Breeds from Central Dakota northward to the Saskatchewan country; south in winter over southern plains to Southern Mexico.

The Missouri Skylark has the same general habits common to the Titlark, but soaring like the European Skylark when singing, and according to those who have heard it, its vocal powers are not less inferior than those of that celebrated bird. It breeds abundantly in Dakota and Montana northward to the Saskatchewan districts, where Captain Blakiston found them common on the prairies during the breeding season. Sprague's Pipit can also be found in summer in Western Minnesota and in Nebraska.

Its nest is built on the ground in a depression, and is made of fine grasses, interwoven in a circular form and without lining. The sur-

rounding grasses are sometimes formed into an arch like the arch-way of the Meadow Lark's nest.

The eggs are four or five, of a grayish-white, minutely speckled with purplish-gray; size .87 x .67.

701. *Cinclus mexicanus* SWAINS. [19.]

American Dipper.

Hab. Mountainous portions of Western North America, from the Yukon Valley south to Northern Central America (Guatemala).

The American Water Ouzel, a grayish, slate-colored bird, which has the aquatic habits of a duck and the tilting movements of a sand-piper, inhabits exclusively the mountainous portions of Western North America. It is resident as far north as the valley of the Yukon River. It is never found near still water, frequenting only wild, forcible mountain streams, cascades, eddies and swift currents. Mr. Frank M. Drew beautifully says that the birds "are the very embodiment of a mountain torrent — bustling and energetic; and their song is like crystallized spray. Sweet, sparkling and vivacious, taken with its surroundings, I do not know of any bird-song which surpasses it."

The nest is variously situated, but always near water in a nook or crevice, on shelving rocks, among roots of trees, often where the water sprays keep the outside damp. It is a beautiful ball of soft green moss, measuring about seven inches by ten, and is usually dome-shaped, with a small, round hole in one side for an entrance; within it is strongly arched over with leaves and grasses and supported by twigs, and all cemented with mud.

The eggs are three to five in number, plain, pure white, and average 1.00 x .70. The eggs are usually deposited in the latter part of May or in June. A set of four eggs in my cabinet taken June 10, 1880, in San Juan county, Colorado, offers the following measurements: 1.01 x .73, .99 x .72, 1.00 x .70, 1.01 x .72. Mr. Norris has two sets; one of four eggs, taken June 4, 1881, in Clear Creek Canon, Colorado; sizes .99 x .74, 1.00 x .73, 1.01 x .74, 1.01 x .73; the other set, consisting of three eggs, was collected by Mr. William Cooper, near Santa Cruz; these measure 1.05 x .71, 1.04 x .71, 1.01 x .70.

702. *Oroscoptes montanus* (TOWNS.) [10.]

Sage Thrasher.

Hab. Sage-brush regions of Western United States, from the western part of the Great Plains to the Pacific; in winter south into Mexico.

Erroneously called Mountain Mocking Bird, for it is exclusively an inhabitant of the sage-brush region of the West, and is partial to the lower portions of the country, though not infrequently met with in the open mountains. It nests in low bushes, especially the sage and cactus,

from ten inches to three feet above the ground. The nest is a loose, bulky structure made of bark-strips, small twigs, coarse grasses and lined with fine stems and rootlets.

The eggs are three or four, rarely five, in number, and they are deposited variously in the latter half of May, in June, and as late as the first or second week in July. Eight sets of the eggs of this species from Utah, Montana and Oregon are in Mr. Norris' cabinet. Their ground-color is of a rich greenish-blue, spotted with bright reddish-brown, and a few plumbeous markings. In shape they vary from an ovate to a short ovate. The sizes of the specimens in a set containing the smallest eggs are: .90 x .72, .89 x .72, .84 x .70. The largest: .95 x .69, .96 x .70, .95 x .68, .95 x .69. Average size .95 x .70.

703. *Mimus polyglottos* (LINN.) [II.]

Mockingbird.

Hab. United States, south into Mexico; rare or local north of 38°.

The home of this inimitable vocalist is in the Southern States, where it is very abundant. It has occasionally been detected breeding in the more northern States and above latitude 38°—as, near Springfield and Arlington, Massachusetts, and in the Connecticut Valley. There are records of the bird's residing in summer in Central and Southern Iowa. It is a rare summer resident in Ohio. I have several times taken them in June, and my friend, J. E. Gould, observed a pair that lingered about the grounds in the vicinity of the Ohio State University during the summer months of 1887, but was unable to discover their nest, which was doubtless in the neighborhood. A pair built their nest and reared their young for several years near the residence of Dr. Kirtland, at Rockport, and the bird has been found breeding frequently in Southern Ohio. Col. Goss gives the Mockingbird as a summer resident of Kansas; begins laying about the 20th of May. Mr. Shields informs me that in Los Angeles county, California, where it is an abundant resident, nest-building is begun early in May, and fresh eggs may be found as late as the last of June. He states that when deprived of the first set of eggs, a second nest is invariably built and another set deposited.

The nest is composed of small twigs and weeds, lined with roots and sometimes with horse-hair and cotton. Various situations are selected for the nest; an almost impenetrable thicket of brambles, a hedge, an orange tree or holly bush seem to be favorite localities. Often the nest is built in a bush a few feet from a door or window of a dwelling. Generally two or three broods are reared in a season. Mr. J. A. Singley, of Giddings, Lee county, Texas, informs me that he finds the

nests in that locality built mostly in clumps of live oaks scattered over the prairies, also in brush-piles, corners of rail fences, and in fact everywhere except on the ground. He has found them as low as six inches from the ground in a low bush, and as high as fifty feet in trees.

A set of five eggs was taken from the hollow of a live oak in May, 1886. The eggs are usually four or five, seldom six. The ground-color varies from pale greenish-blue to dull buffy, marked with spots and blotches of yellowish-brown, russet or chestnut. A great variation exists in the sizes. Specimens in a large series measure as small as .87 x .68, and as large as 1.05 x .80. A common size is .94 x .71.

704. *Galeoscoptes carolinensis* (LINN.) [12.]

Catbird.

Hab. Eastern United States and British Provinces, north to about 54° in the interior; west to and including the Rocky Mountains. Winters in the Southern States, Cuba and Central America to Panama.

This well known bird breeds throughout its range, nesting in bushes, low trees, or clusters of vines, generally in retired places. It is seldom placed more than ten feet above the ground. Thickets or orchards are its favorite haunts. The nest is bulky and inartistic, made of dry leaves, twigs, dry grass, and lined with black fibrous roots and grass.

The eggs are usually four, frequently five, and rarely six. They are plain, deep bluish-green; average size .95 x .71.

705. *Harporhynchus rufus* (LINN.) [13.]

Brown Thrasher.

Hab. Eastern United States, west to the base of the Rocky Mountains, north Southern Maine, Ontario and Manitoba. Winters in more Southern States, north to about 37°.

The Brown Thrasher breeds in all suitable localities throughout its range, building its nest in low bushes, or on stumps, in clusters of wild vines and briars, in heaps of brush-wood, and often on the ground. It may be frequently found nesting in the fruit trees of quiet orchards, and in trees situated in unfrequented places. When the nest is placed on the ground where the soil is wet and clayey the eggs become addled; three instances of this kind have come under my notice, and the eggs have failed to hatch. The same observations have been made by a number of my correspondents. The nests are rather flat, loosely and rudely constructed of twigs, strips of bark, withered leaves, and black, fibrous roots, lined with horse hair and a few feathers. In some sections the Brown Thrasher begins to build in the latter part of April, but more generally in the first half of May.

The eggs are three or four, sometimes five, in number. Their ground-color varies from white through pale-buff to pale-greenish, and, very rarely, quite a distinct green; the markings are minute specks of

reddish-brown, thickly sprinkled over the entire surface, frequently forming distinct wreaths near the larger ends. The average size is 1.08 x .80, with considerable variation.

I know not whether to wonder most at the range and variety of this bird's natural song or at his powers as a mimic. In the latter consideration I would not dare to place him on the same plane with the far-famed Mockingbird, but the scope and diversity of his natural song notes are something wonderful, and when heard under favorable circumstances fills the mind of the hearer with admiration for the bird whose lyrical powers are among the first of feathered songsters. Never shall I forget the early dawn of a May morning in 1875, when the song of this bird first fell upon my ears.

I was bent on making a collection of the birds of Franklin county, Ohio, and many a spring morning, often long before daybreak, found me in the woods with my gun and note-book in hand.

It was one of those mornings when the whole face of creation was fresh and gay; when the gentle gales were freighted with the odors of budding vegetation, when everything tended to inspire the thoughts to muse on Nature's grandeur.

The sun's rays had not yet streaked the eastern sky, and the morning's gray cast a lurid light over field and forest. From out the blue firmament, still twinkling with stars, came the crackling sound of the Purple Martin, and the guttural cries of herons could be distinctly heard as they winged their way in the calm morning air. The song of the cricket was on the wane and the croaking of the frogs was dying away as the morning dawn was brightening.

Near by flowed the quiet Scioto, along whose banks the sandpipers whistled, while the cackling and crowing of fowls in the neighboring farms told of the approaching day.

The grayness of dawn soon decayed, and the clouds of floating mist vanished before the rising sun. A number of sprightly Goldfinches flew in their undulating manner through the air, and now the leafing trees along the river bank and in the little woods near by seemed swarming with birds; everything appeared to be animated with beauty, perfume and song.

I listened to the multitude of mingled voices as they rang out in the pure atmosphere, but they were scarcely distinguishable. In another instant there came a sound surpassingly rich and melodious, "like a voice from the spirit land." It was the plaintive notes of the Thrasher, in the boughs just above me, charming his mate with a love-song of bewitching sweetness.

As the dew-drops on the drooping branches glistened like jewels in the bright sunlight of that glorious dawn, I harkened to the delightful strain, and a soft melancholy stole o'er me, as Nature bade him sing Her sweetest songs. He sat on a bough with his brown and speckled plumage ruffled; his wings and tail drooping, but his head was turned heavenward, and, as his throat swelled, the wild, artless harmony of this great minstrel's song echoed and re-echoed throughout the woodland. He was a rustic musician, and extravagant with his powers. At first I thought his notes were the rustling of leaves, until he burst forth with the lively chatter of the House Wren; then came the soft, plaintive notes of the Bluebird, followed by the loud *ker-ker-ker* of the Red-headed Woodpecker, and the hurried clucking of the Golden-wing; again and again he repeated the mellow piping of the Kildeer Plover, which it utters as it settles down on a pebbly shore. Sometimes his voice would die away into a liquid tone like the murmuring of a fountain, when suddenly he would break forth again into the loud voice of the Robin or the harsh notes of the Kingfisher.

The songs of all the birds of the woods seemed to be within the range of his vocal powers. Even the subdued accents of the nuthatch as it climbs about the trunk of a tree were distinctly uttered, and the loud, musical song of the Tufted Titmouse came from his throat clear and strong. The singular reverberating song of the Swamp Blackbird seemed to be one of his favorite melodies, often repeating it and interluding it with his sweet ventriloquial strains that sounded like the trill of rippling waters. All of these, and the flute-like notes of the Meadow Lark, which seemed to come a great distance across the meadows, will never be effaced from my memory, and as each spring returns I long for the woods where I can hear again his matchless voice.

The Brown Thrasher usually occupies a lofty position while singing; morning and evening are the chosen hours for this exercise.

It is a shy, active bird and when inhabiting woods it generally retires to the most secluded parts. It loves the security of dense thickets and the solitude of deep swamps; at times several of them may be seen running along the fences catching insects, now and then darting into bushy hedges or brush heaps to elude observation; every movement is accompanied by a graceful switch of the tail, and when an intruder approaches near its nesting place he is greeted with the familiar alarm note, *chuck, chuck*. In August its food consists largely of wild berries of which the young seem to be particularly fond.

Quite a number of these birds confined in cages have come under my observation, and strange to say they never uttered a note of song.

Even when reared from the nest, and under the most favorable conditions they were at all times perfectly mute, excepting that the alarm note is often sounded.* When thus confined the plumage likewise fades; the feathers lose the gloss which they have when the bird is in its natural habitation, and the eye which was once a bright orange-yellow has now lost its fire and has turned a pale, sickly yellow.

706. *Harporhynchus longirostris sennetti* (RIDGW.) [13a.]

Sennett's Thrasher. †

Hab. Lower Rio Grande Valley.

Mr. Sennett says that the Texas Thrasher is an abundant species throughout the whole Lower Rio Grande country, and very abundant. It frequents shady thickets, and is rarely seen in the open plains. Dr. Merrill pronounces it a fine songster, and states that in habits it scarcely differs from the Eastern bird, *rufus*.

The eggs, as Mr. Sennett found them, are usually four in the first clutch in April, while second sets, late in May, contain generally three. They are hardly distinguishable from those of *H. rufus*. Dr. Merrill gives the average size of fifty-two eggs as 1.08 x .82, the extremes being 1.13 x .86 and .97 x .75.

707. *Harporhynchus curvirostris* (SWAINS.) [15.]

Curve-billed Thrasher.

Hab. Mexico, north to Southern Texas and New Mexico (east of the Rocky Mountains).

According to Dr. J. C. Merrill and Mr. George B. Sennett, this species is about as common as the Mockingbird or *H. longirostris sennetti* on the Lower Rio Grande. It inhabits tangled thickets as well as prickly-pear cactuses and mesquite trees, which afford breeding resorts. In two instances Mr. Sennett found nests in ebony trees near much frequented pathways, and the birds were as tame as Robins. The usual height of nests from the ground is about four feet. Mr. G. B. Benners found a nest of this bird in a Woodpecker's hole in a live oak on the banks of the Rio Grande. It contained four eggs. Dr. Merrill says: "They are, as a rule, readily distinguishable from those of the Texas Thrasher and Mockingbird by the almost invariable lining of yellow straws, giving a peculiar appearance to the nest. They are also more compactly built, are well cupped, and often have the edges well guarded by thorny twigs." Mr. Sennett states that the bird commences to breed in March on the Rio Grande, and rears several broods.

The first eggs are laid in April, and generally number four; by

* Since the above was written a friend tells me that he once had a Brown Thrasher which sang in confinement, but in a very subdued tone, and only when he was not observed.

† Cf. Ridgway: Proc. U. S. Nat. Mus. X, Aug 6, 1888, p. 506. In A. O. U. Check List this is *Harporhynchus longirostris* (Lafr.), Long-billed Thrasher.

the middle or latter part of May the second sets consist nearly always of three. A few sets of four were found of the second laying. Five sets of these eggs are in my cabinet, taken near Camargo, Mexico, in March, April and May. They vary from oval-oblong to almost pyriform in shape, and their ground-color is almost invariably light bluish-green, minutely speckled with reddish-brown. The sizes of two sets are as follows: 1.01 x .73, 1.00 x .75, 1.02 x .79, 1.10 x .75; 1.10 x .79, 1.10 x .81, 1.15 x .83, 1.13 x .81. The average size is 1.08 x .78.

707a. *Harporhynchus curvirostris palmeri* RIDGW. [15a.]

Palmer's Thrasher.

Hab. Southern Arizona, southward into Sonora (Guaymas).

One of the most common birds on the cactus-covered plains of Arizona. The breeding season in some sections begins in February, in other localities early in March, and generally two broods are reared in a season.

The nests are usually built in the cholla, a kind of prickly cactus, at a height of about three to six feet. It is composed of twigs and lined with dry grass; sometimes the lining is mixed with hair or feathers when procurable.

According to the observations of Mr. W. E. D. Scott and Mr. Herbert Brown, the usual number of eggs laid by Palmer's Thrasher is three, sometimes four, not infrequently two and rarely one. The eggs cannot with certainty be distinguished from those of the Curve-billed Thrasher. The sizes of a set of eggs containing the smallest specimens in a series of twenty-one sets in Mr. Norris' collection are, 1.10 x .78, 1.09 x .78, 1.13 x .78; the largest 1.24 x .81, 1.20 x .79, 1.16 x .79.

708. *Harporhynchus bendirei* COUES. [14a.]

Bendire's Thrasher.

Hab. Southern Arizona, south into Sonora (Guaymas), casually northeastward to Colorado.

Captain Charles E. Bendire, U. S. A., discovered this species in the vicinity of Tucson, Arizona, in 1872. The bird inhabits the same regions frequented by *H. palmeri* and *crissalis*, with whom it associates. Mr. Scott states that the song of the male of this species is particularly beautiful, and is to be compared with the best efforts of the Mocking-bird.

The nests are placed in mesquites and cactuses, usually at a height of three or four feet above the ground. The colla cactus is their favorite nesting-site. The breeding season begins early in March, and two broods are generally reared in a season.

The eggs are three or four, rarely two, in number. In the extensive private collection of Mr. J. Parker Norris, so frequently referred

to in these pages, there is a series of twenty-nine sets of these eggs — three of two, nineteen of three, and seven of four. They were nearly all collected in the vicinity of Tucson, Arizona. The typical eggs are greenish-white, spotted with lavender-gray and ecru-drab. The following are sizes of ten specimens: .95 x .74, .98 x .69, .93 x .71, .92 x .70, 1.01 x .76, 1.03 x .72, 1.01 x .76, 1.04 x .74, 1.05 x .75, 1.06 x .79. The average is 1.02 x .74.

709. *Harporhynchus cinereus* XANTUS. [14.]

St. Lucas Thrasher.

Hab. Lower California.

This Thrasher is confined to the peninsula of Lower California. Its general habits are described as being similar to those of *H. palmeri* or *crissalis*. Its nest is a flat structure, with a slight hollow, and usually built in low trees, shrubs and cactus plants about four feet from the ground.

The eggs are two or three in number, and are described as greenish-white, spotted with pale reddish-brown. Average size 1.06 x .75.

710. *Harporhynchus redivivus* (GAMB.) [16.]

Californian Thrasher.

Hab. Coast region of California, southward along the Pacific coast of Lower California.

This Thrasher is an abundant resident of the coast region of California. Mr. A. M. Shields informs me that its favorite haunts in Los Angeles county are the scrub oaks and grease-wood brush that fringe deep mountain gorges. It begins to build toward the last of April, and by the last of May it is difficult to procure a perfectly fresh set of eggs. The bird, he says, is a close sitter, often allowing one's hand to touch it before leaving the nest.

The general character of the nest is a coarse, rudely constructed platform of sticks, coarse grass and mosses, with but a very slight depression. Occasionally, however, nests of this bird are more carefully and elaborately made. It is always well hid in the low scrub bushes.

The usual complement of eggs is three, sometimes four and occasionally only two. They are light greenish-blue, with russet-brown and chestnut spots; average size 1.18 x .85. Ten specimens measure 1.05 x .80, 1.05 x .82, 1.02 x .79, 1.04 x .77, 1.08 x .80, 1.22 x .84, 1.21 x .85, 1.27 x .82, 1.28 x .79, 1.30 x .84.

711. *Harporhynchus lecontei* (LAWR.) [16a.]

Leconte's Thrasher.

Hab. Valleys of the Gila and Lower Colorado Rivers, south into Sonora.

This is the least common of all the Thrashers in the region which it inhabits, and from all accounts it is a very shy and difficult bird to obtain. Comparatively few of its eggs have yet appeared in collec-

tions. Mr. E. Holterhoff, Jr., discovered its nest and eggs at Flowing Wells, a station in the middle of the Colorado Desert, in California.* In the same region a number of the nests and eggs have been taken by Mr. F. Stephens and R. B. Herron. Dr. Edgar A. Mearns, U. S. A., met with this bird in the desert country, between Phoenix and Casa Grande, Arizona.† He states that the song of this species is remarkable for its loud, rich tone, and is at least as fine as any of the genus. Deserts of sand, "covered in places with patches of sage-brush and groves of cholla cactuses, with a few mesquites and shrubs scattered along the dry arroyos," are the favorite haunts of Leconte's Thrasher. A glance at these bushes will usually suffice to detect the nest, as it is large and conspicuous, except when the shrub is bushy. The nest is usually built near the center of a cholla cactus, from one to seven feet above the ground; it is likewise frequently placed in mesquites. The birds are close sitters and one can approach within a few yards before they slip off—which they usually do on the opposite side of the bush—dropping to the ground they run briskly and seek the cover of the surrounding vegetation, and so adroitly conceal themselves that it is almost impossible to detect them. The nest is composed of twigs, grasses and weeds lined with feathers. The breeding season begins in March, and, according to Mr. Herron's observations, some at least very likely begin laying in February.

The eggs are three or four in number, greenish-blue, faintly speckled, chiefly at the larger end, with cinnamon-rufous or yellowish-brown. Some specimens have large blotches on the surface. The general shape of the eggs is elongated-oval. The sizes of a set containing four eggs collected on May 24, 1883, in San Gorgonia Pass, California, by Mr. Herron, are 1.13 x .75, 1.07 x .77, 1.08 x .77, 1.14 x .75. The average is 1.07 x .76.

712. *Harporthynchus crissalis* (HENRY) [17.]

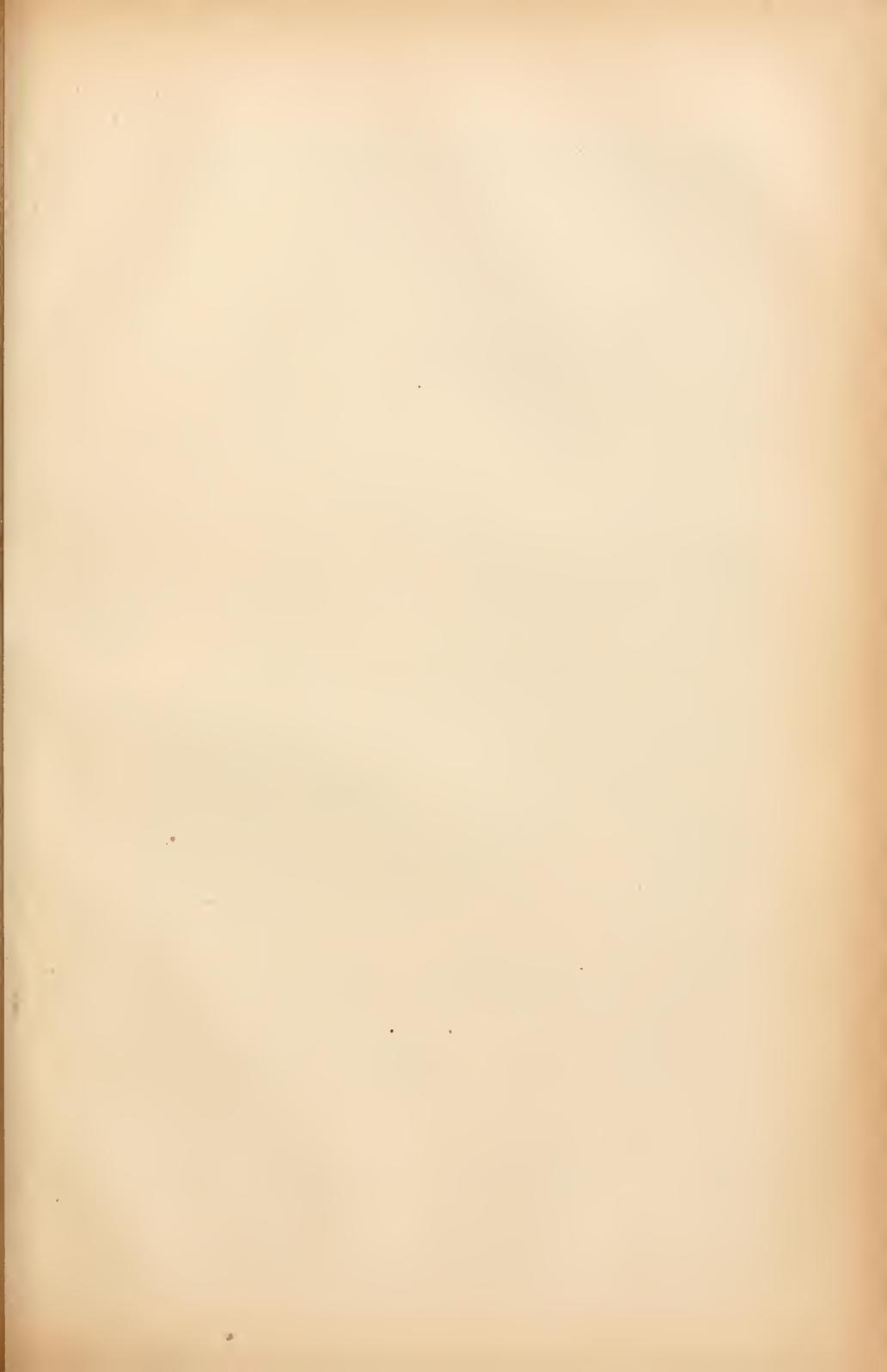
Crissal Thrasher.

Hab. New Mexico, Arizona, Southern Utah, Southeastern California and northern portion of Lower California.

This is a common species in suitable localities throughout New Mexico, Arizona and Southeastern California. Dr. Mearns states that it is abundant all over the Verde River bottom lands, preferring mesquite thickets and the vicinity of streams. He says it is one of the few birds that truly sing; and it shares, in Arizona, this rare gift with its congeners—Bendire's, Palmers and Leconte's Thrashers. Its song is

* Described in the American Naturalist, XV, March, 1881; for fuller account Cf. Bull. Nutt. Ornith. Club, VIII, 48-49.

† For an extended historical account, together with full details of the habits of *H. lecontei* and *crissalis*, see Dr. Mearns' article, "Some Arizona Birds" in The Auk, III, pp. 289-307.





AMERICAN WATER OUZELS OR DIPPERS AND NEST.

(*Cinclus mexicanus*)

remarkable for its scope and sweetness, having all the power of the Mockingbird, singing from the tops of the tallest bushes in the same attitude as the Brown Thrasher of the East. Like the rest of the Thrashers it is highly terrestrial, and runs swiftly on the ground from bush to bush, often jetting its long tail upward, more or less above the horizontal. They breed about the same time as Bendire's Thrashers. Mr. Scott found eggs in the Catalina Mountains of Arizona during the first week in April that were about ready to be hatched, and young birds fully fledged were observed as early as May 1. Dr. Mearns saw young birds that were strong on the wing by the end of April. Two broods are reared, and the number of eggs laid, so far as I am able to ascertain, is usually three, sometimes four. Dr. Mearns discovered, on June 14, a nest placed upon a horizontal bough of a large mesquite bush containing two eggs, and in two days later it contained four eggs. The proprietors of this nest divided their attention between the care of their nest and a family of young not yet able to shift for themselves. The nests, placed in bushes, are large conspicuous objects, rudely constructed of coarse twigs; the inner nest is made of finer vegetable materials.

The eggs are pale greenish-blue, unmarked. Two sets containing three eggs each in Mr. Norris' cabinet were collected in Arizona, near Tucson, April 10, 1884, and at Sacton, April 12, 1885. These measure 1.11 x .74, 1.09 x .73, 1.13 x .73; 1.10 x .73, 1.16 x .77, 1.14 x .76. The average size is 1.08 x .75.

713. *Campylorhynchus brunneicapillus* (LAFR.) [56.]

Cactus Wren.

Hab. Southwestern border of the United States, from Southern Texas to the coast of Southern California; south into Northern and Central Mexico.

A common bird in the cactus and chaparral regions of Texas, New Mexico, Arizona, Southern Utah, Nevada, and Southern California. As its name implies, cactus groves are its favorite haunts. In these, and other thorny shrubs, its nest is placed, which is a very large and purse-shaped affair with an entrance at one end. It is composed of little thorns and grasses, and lined with feathers. Mr. Shields states that in Los Angeles county, California, there is no grove of cactus along the foothills without these Wrens. He has often found from four to ten nests in a bed of cacti not more than a dozen yards square. Three broods are probably reared, as fresh eggs may be found from the middle of April to the last of July.

The eggs are generally five, sometimes four, and occasionally only three. They are white or creamy in ground-color, which is thickly covered with rich, reddish-brown spots or specks, giving to the entire

egg a beautiful rich salmon-colored hue. Ten eggs selected out of fifteen sets give the following measurements: .86 x .62, .89 x .62, .93 x .63, .90 x .60, .94 x .67, .96 x .67, .95 x .66, .94 x .69, .95 x .67, .98 x .69. The average size is .97 x .65. Their general shape is oblong-oval.

714. *Campylorhynchus affinis* XANTUS [57.]

St. Lucas Cactus Wren.

Hab. Southern portion of Lower California.

The habits, nesting and eggs of this species are identical with those of the last.

715. *Salpinctes obsoletus* (SAY) [58.]

Rock Wren.

Hab. Arid regions of Western United States from the Great Plains to the Pacific, south through Mexico to Northern Central America.

This is a more or less common species in the dry, rocky regions of Western United States. Mr. Scott says that in the Catalina Mountains of Arizona they begin to breed about the middle of March; six or eight young are the common inmates of the nest, and two broods are reared. Mr. Emerson found this species to be quite common on the Farallon Islands, and it is the only land bird which is resident. They were found all over the South Farallon, building in suitable crevices a nest of Farallon weed, lining it with chicken feathers and hair shed from the island mule.

The nest is usually built in a rift of rocks, or on the ground beneath some shelving rock. It is composed of a mass of material, very miscellaneous in character, sometimes a single substance, but a variety of materials are more generally used, such as sticks, bark-strips, weeds, grasses, moss, hair, wool, etc. A curious habit of the Rock Wren is that of paving the ground about the entrance of the nest with pebbles, or bits of rock and glass. On the Farallons small pieces of coal, mussel shells, and small bones of sea-birds and rabbits are used for this purpose. Mr. Fred Corey, of Santa Paula, California, informs me that he found a nest with four eggs of this bird under the rafters of a house.

Five and six eggs constitute an average set, and seven, eight, or nine are sometimes deposited. Mr. Emerson found one nest with ten eggs, two of which were fresh and the others in various stages of incubation. The eggs are pure glossy white, finely and sparsely speckled with reddish-brown, chiefly at the larger end. Mr. Norris has two sets taken on the Farallons, June 16 and 23, 1886; they contain six and eight eggs respectively and measure .70 x .56, .73 x .56, .71 x .56, .69 x .56, .69 x .56; .74 x .59, .72 x .57, .74 x .58, .76 x .58, .75 x .58, .75 x .58, .76 x .59, .75 x .59. Another set collected in Rio Grande county,

Colorado, May 29, 1885, consists of six eggs; these measure .74 x .59 .69 x .54, .71 x .58, .70 x .56, .73 x .59, .71 x .58.

716. *Salpinctes guadeloupeensis* RIDGW. [58a.]

Guadalupe Rock Wren.

Hab. Guadalupe Island, Lower California.

Mr. Walter E. Bryant states that this is undoubtedly the most common of the birds on Guadalupe Island, distributed from the beach to the summit, but found most numerous on the upper and central portions. They are first to begin nesting. A few birds began the construction of their nests in December, and one had her work nearly completed on the 25th of December, 1885. Four fresh eggs were found in it on January 17. The breeding season, strictly speaking, Mr. Bryant says, extends from the middle of January through the month of March. "Nests were found in cavities of immense boulders, under rocks, in fallen and decayed trunks of cypress trees, the latter location being apparently a favorite one. But wherever the nests were located the passages leading to them were, with one or two exceptions, paved with flat pebbles ranging in size from a Lima bean to a half dollar. Fully a quart of these pebbles were removed from the entrance to a nest built in a boulder at a height of four feet, where, at some previous time, other birds had evidently built and accumulated their share of the pavement. As a rule, scarcely an ordinary handful of stones is used." The nest is built to conform to the size and shape of the cavity which it occupies; it is made of fine dry grasses and lined with goat hair.

The eggs are usually four, though sometimes five in number, and resemble, both in color and shape, those of the common Rock Wren, *S. obsoletus*. Set No. 781 in Mr. Bryant's collection measures 17 x 14, 17 x 14.5, 18 x 14.5, 18.5 x 14.5, millimeters.* Set No. 782 measures in millimeters, 19 x 14, 19 x 14, 19.5 x 14.5, 19.5 x 14.5, 19.5 x 15.† The two largest eggs in a series of fifty-five specimens measures 21 x 15 mm. and 20 x 16 mm. respectively; the two smallest 17 x 14 mm; average 19 x 14 mm.‡

717a. *Catherpes mexicanus conspersus* RIDGW. [59a.]

Canon Wren.

Hab. Southwestern United States, from Western Texas, Colorado, etc., to the Pacific, north to Southern Idaho and Oregon; south to Mexico boundary and Lower California.‡

The rocky canons of the mountain regions throughout its range are the home of this species. It is easily recognized by its white

*.67 x .55, .67 x .57, .71 x .57, .73 x .57.

†.75 x .55, .75 x .55, .77 x .57, .77 x .55, .77 x .59.

‡Largest .83 x .59 and .79 x .63; smallest .67 x .55; average .75 x .55.

§Within this habitat our text includes the Dotted Canon Wren, a new subspecies, *Catherpes mexicanus punctulatus*, Ridgw., inhabiting California, Lower California, Arizona and New Mexico.

throat and rich yellowish-brown tail, and by its notes,—a peculiar insect-like chirp, and a delightful clear whistling song. The nest of the Canon Wren is generally built in some deserted tunnel or cave, in holes in bluffs, and at times in unused buildings. It is frequently placed on some projecting ledge or shelf. Mr. H. D. Minot found a nest of this bird containing five fresh eggs near Manitou, Colorado, on June 8, 1880. It was placed in the roof of a cave, about ten feet from the ground in a niche or pocket with a narrow vertical opening, the stones being broken away revealed the nest which rested on the bottom slab. In appearance the structure resembled that of the Eastern Wood Pewee, being composed of twigs, stalks, bits of leaves, thickly felted with down silk and feathers. Mr. Scott says that in Southern Arizona three broods are generally reared each season. The eggs are from four to six in number. Mr. G. B. Benners found this species nesting on the rocky side of a dry river bed in Comal county, Texas, and on April 10 took a set of five eggs.

The eggs are white, speckled with lavender-gray and vinaceous-rufous; in some specimens the markings are chiefly at the larger ends, where they often form indistinct wreaths. Three sets in Mr. Norris' cabinet are from Comal county, Texas; one of four taken March 20, 1884, measures .70 x .54, .71 x .54, .73 x .52, .78 x .52; another collected March 25, 1887, contains five eggs; sizes, .78 x .57, .76 x .56, .69 x .55, .75 x .56, .76 x .56; the third is of five eggs: .71 x .54, .71 x .54, .74 x .55, .70 x .54, .71 x .54; average .72 x .53.

718. *Thryothorus ludovicianus* (LATH.) [60.]

Carolina Wren.

Hab. Eastern United States except Southeastern Florida (rare toward the northern border,) west to the edge of the Great Plains; south to gulf coast, including Northeastern Mexico. Rare in Southern New England.

A common and well known bird in the more southern portion of its range, being rare or local north of latitude 40°. It may be found almost everywhere, but shady ravines, wooded and rocky banks of streams, piles of logs and brush-heaps are its favorite haunts. The Carolina Wren has a loud, rich song, which it pours forth while mounted on the end of a fence rail, top of a stump, or the topmost branch of a tree. The song is repeated most frequently, and with more vehemence during the mating season, which is early in spring. Breeding begins in the latter part of March or early in April, and two, sometimes three, broods are reared in a season.

The typical nest of this bird in Central Ohio, where it is a common resident, is a massive, coarse structure, made of strips of corn-stalks, grasses, hay and leaves, with an intermixture of the silk of corn; the

lining is of chicken feathers, fine, dry grasses and horse hair. The bird is not particular as to the situation of its nest. It is found in holes of trees, in wood-piles, and in low bushes; sometimes in the nook or corner of a barn; occasionally in a box, placed in the verandas of dwellings in retired places; often under an accumulation of brush-wood. Sometimes the nests are arched over or dome-shaped, the opening being only large enough to admit the bird.

The number of eggs laid ranges from four to six, and the average size of twenty specimens is $.74 \times .61$; a common size is $.72 \times .56$. The ground-color of the eggs varies from a whitish to creamy-white or salmon-buff; this is thickly sprinkled with a brownish-pink, and so heavily laid on in some specimens that the surface has this same appearance. Some, however, are marked more heavily at the larger end. *T. l. miamensis* Ridgw. is found in Southeastern Florida.

719. *Thryothorus bewickii* (AUD.) [61.]

Bewick's Wren.

Hab. Eastern United States, rare or local east of the Alleghanies and north of 40° ; west to the border of the Great Plains. Winters in the more Southern States.

Bewick's or the Long-tailed House Wren is a common species in Eastern United States, particularly southerly; breeding from latitude 40° southward. In some places in the interior it replaces the common House Wren. It is not common on the Atlantic coast.

Nests of this bird are placed anywhere—in boxes, holes, fence-posts, brush-heaps, stumps, hollow trees, barns, sheds, etc. Dr. Howard E. Jones, who obtained the first specimens of nests and eggs of this species ever taken in Ohio, has the following in his text of the magnificent work, "Illustrations of the Nests and Eggs of the Birds of Ohio": "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 would be difficult to distinguish from uncovered nests of *T. edon*, 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.

"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 $.49 \times .64$. They are spotted and speckled with reddish-brown, sparingly about the point, but plentiful toward the crown, where the marks are often confluent, forming a wreath. The deep shell-marks are purplish."

719a. *Thryothorus bewickii spilurus* (VIG.) [61a.]**Vigors's Wren.**

Hab. Pacific coast district, from British Columbia southward to Lower California and Western Mexico.

The general habits and nests of this subspecies are identical with those of Bewick's Wren. The eggs are white, finely speckled with chestnut and lavender-gray. In remote regions it frequently nests in crevices of rocks. Eggs, .64 x .50.

719b. *Thryothorus bewickii bairdi* (SALV. & GODM.) [61b.]**Baird's Wren.**

Hab. Southern and Western Texas, New Mexico, Arizona, south to Southern Utah, Colorado and Middle Kansas, south into Mexico.

This is a common bird in various parts of Southwestern United States, as in Western and Southern Texas, New Mexico, Arizona, etc. According to Col. Goss, it is not uncommon in Southwestern Kansas. It was found common in the Lower Rio Grande by Dr. Merrill and Mr. Sennett. Mr. Scott met with it in Southern Arizona. The only nests he found were built in natural hollows, or deserted Woodpeckers' holes in live oak trees. Dr. Merrill states that this bird has a great variety of notes, the principal song being much like that of the Song Sparrow, but sweeter.

The nest of this Wren, besides being built in Woodpeckers' excavations and natural cavities of trees, is likewise placed in hollow logs, under brush-heaps, or in any nook or corner about a deserted building, and, when in a cavity, the space which it occupies is generally well filled with roots, straws and grasses, lined with fur or feathers. The nest is also frequently built among the twigs of dense thorny bushes. Two or three broods are reared in a season.

The eggs are usually five to seven in number, white, speckled with chestnut or reddish-brown and lavender-gray, heavier at the larger ends, and massed there in distinct, broad bands. Three sets of these eggs from Comal county, Texas, are in Mr. Norris' cabinet; two of seven eggs each were taken April 4 and 25, respectively; the third, containing five eggs, was collected June 21. The sizes by sets in their order are as follows: .65 x .50, .64 x .49, .64 x .49, .68 x .50, .65 x .49, .63 x .48, .65 x .50; .71 x .51, .71 x .50, .69 x .51, .71 x .51, .70 x .52, .72 x .52, .71 x .52; .65 x .50, .66 x .51, .64 x .52, .66 x .53, .67 x .52; average .64 x .46.

721. *Troglodytes aedon* VIEILL [63.]**House Wren.**

Hab. Eastern United States and Southern Canada, west to the Mississippi Valley (Michigan to Louisiana); winters in southern portions.

A common and well known bird in Eastern United States. It builds its nest under the eaves of houses, in corners of the barn,

martin-boxes, hollow in trees, and, in fact, they are found nesting in every conceivable cavity or crevice. The nest is composed of a mass of miscellaneous rubbish, sticks, grasses, hay and other convenient materials. If a box or cavity holds half a peck the little birds will fill it full. The nesting season begins early in May, and two or three broods are generally reared. Mr. L. O. Pindar, of Hickman, Kentucky, informs me that he saw a pair of these birds nesting on the ground under the floor of a barn, which was elevated four or five inches, and another pair had their nest in a paper bag full of hops, hanging in a neighbor's porch. It has been found nesting in the skulls of horses and oxen lying in grassy fields. Mr. George B. Sennett and Dr. B. H. Warren found a pair breeding in a Kingfisher's hole in a sand-bank, near Erie, Pennsylvania, August 1, 1888.*

The eggs are white, so thickly dotted with reddish-brown as to nearly conceal the ground-color with a light tinge of purple; they are nearly spherical to oblong-oval in shape. The eggs are usually seven, sometimes nine, measuring .64 x .52, with great variations in this respect.

721a. *Troglodytes aedon parkmanii* (AUD.) [63a.]

Parkman's Wren.

Hab. Western United States, east to the Mississippi Valley (Minnesota, Illinois, etc.), south into Mexico.

According to Mr. J. A. Allen, the true *parkmanii* is a Northwest coast form, typically represented in the coast region of Oregon and Washington Territory, and less typically southward along the coast to Lower California.† The smaller and paler form, *T. aedon aztecus* Baird, is the one now given as inhabiting Western United States (except the Pacific coast), east to Illinois, etc., south into Mexico.

The nesting, eggs, and entire general habits of *parkmanii* correspond exactly with those of the House Wren of the East. Mr. Walter E. Bryant states that Parkman's Wren has been known to build in the skull of a horse, which had been placed in a fruit tree, in the nests of Cliff Swallows, and within an old shoe lodged in a tree.

722. *Troglodytes hiemalis* VIEILL [65.]

Winter Wren.

Hab. Eastern North America, breeding from northern border of the United States northward; wintering from its southern breeding limit southward.

The Winter Wren breeds from Northern United States northward. A number of records are at hand of its breeding in Southern New York, in Maine, New Hampshire, and Vermont. The late Dr. Wheaton took young birds of this species in Central Ohio whose plumage indi-

* Cf. Sennett, Auk, VI, 76.

† Cf. Allen, Auk, V, 164.

cated they had shortly left the nest. He was of the opinion that the bird breeds in Northern Ohio. Mr. McIlwraith states that a few remain to breed in suitable places throughout Ontario. Mr. Wm. L. Kells found it breeding in wet woods of Central Ontario, nesting in cavities in the roots of upturned trees. While the general habits of this bird are much like those of the House Wren, its song, from all accounts, during the breeding season, is entirely different—"a soul vibrating, gushing melody, which calls forth the sweetest woodland echoes." The nest of this diminutive Wren is placed in hollows of low stumps in wet places, in crevices of unoccupied buildings, in the tangled piles of fallen trees and branches. It is composed of small twigs with moss and leaves interwoven, and warmly lined with feathers of hawks, crows, grouse, or any that are at hand. The eggs are laid as early as the middle of May or in June, and two broods are reared. Mr. Kells says that the birds will at once forsake a nest that has been touched by human hand.

The eggs are four, five, or six in number, clear white in ground color, spotted with reddish-brown and purple, chiefly at the larger ends. Average size .69 x .49.

722a. *Troglodytes hiemalis pacificus* BAIRD [65a.]

Western Winter Wren.

Hab. Pacific coast region from Sitka to Southern California; south in winter to Western Mexico; east to Eastern Oregon, Nevada, etc.

This subspecies breeds from the southern coast ranges of California north to Sitka. Habits, nesting and eggs like those of *T. hiemalis* of the East. Eggs .60 x .48.

724. *Cistothorus stellaris* (LICHT.) [68.]

Short-billed Marsh Wren.

Hab. Eastern United States and Southern British Provinces, west to the Great Plains. Winters in the Gulf States and southward.

The reedy swamps, fresh water marshes and meadows of Eastern United States are the summer home of the Short-billed Marsh Wren. Breeds abundantly in Western Manitoba, and occasionally in the southern portions of its range, but chiefly north of latitude 40°. Colonel Goss states that it possibly breeds in Kansas and Messrs. Keyes and Williams give it as a rather common summer resident of Iowa. Dr. Agersborg has recorded it as a rare breeder in Southeastern Dakota. The Short-billed Marsh Wren is a summer resident of Ohio, but here, as is the case elsewhere, it is not so abundant as the Long-billed species.

The nest corresponds to that of the Long-billed, but no mud is used in its construction. It is built in the midst of a tussock of

coarse, high grass, the tops of which are ingeniously interwoven into a coarse and strong covering, spherical in shape, and closed on every side, except one small aperture left for entrance. The strong, wiry grass of the tussock is also interwoven with finer materials, making the whole impervious to the weather. The inner nest is composed of grasses and fine sedges, lined with soft vegetable down. Several nests are frequently built by a single pair of birds but not more than one is used.

The eggs are six to eight in number, are pure white, unmarked, and average .64 x .50. A set of six in Mr. Norris' cabinet was taken in Iowa county, Iowa, July 19, 1886; they measure .59 x .49, .67 x .47, .63 x .46, .61 x .46, .62 x .46, .61 x .47.

725. *Cistothorus palustris* (WILS.) [67.]

Long-billed Marsh Wren.

Hab. Eastern United States and British Provinces, wintering in the Gulf States.

The Long-billed Marsh Wren is a common species in swampy places and salt marshes throughout Eastern United States, where it breeds in colonies of greater or less extent. The nest is globular, or somewhat the shape of a cocoanut, very conspicuous by its bulk and its exposed position. It is built of grasses and reeds closely interwoven and often plastered with mud, securely fastened to the upright swaying reeds or cat-tails; it is lined with fine grasses, has a hole on one side, sometimes nearer the bottom than the top. A single pair of these birds will often build several nests, only one of which is ever used.

The eggs range from five to nine in number, usually five or six; they are very dark colored, being so thickly marked with brown as to appear of a uniform chocolate color; average size .64 x .45, with considerable variation.

** *Cistothorus palustris paludicola* BAIRD. [67a.]

Tule Wren.

Hab. Western United States, east to the Rocky Mountains, south to Northern Central America (Guatemala.)

The nesting and eggs of this Western form of the Long-billed Marsh Wren are the same as those of *C. palustris* of the Eastern States. It nests more generally among the tules, more rarely among the flags. Mr. Bryant makes note of a nest found in California which contained eggs and was woven among the almost leafless branches of a young willow, five feet above a fresh water marsh. The false nests were built as usual, but in the coarse grass near by.

726. *Certhia familiaris americana* (BONAP) [55.]**Brown Creeper.**

Hab. Eastern North America, breeding from northern border of United States northward, and in higher mountain districts.

The little Brown Creeper breeds from the northern border of the United States northward, and is seen in most of its United States range during the fall, winter, and early spring. A resident throughout New England, but more abundant in the northern portion. Mr. William Brewster has given us the best account of the breeding habits of this bird in the heavy timbered region bordering on Lake Umbagog, Western Maine.* The nest of the Brown Creeper is built behind loose bark of dead tree-trunks or stumps. All of the nests examined by Mr. Brewster were similar in construction, and the sites chosen were of a uniform character. In every instance the nest was placed in a balsam fir, though spruce, birch, or elm stubs were more numerous. Within the loose scale of bark was crammed a mass of twigs and other rubbish; upon this was the finer bark of various trees, with an intermixture of a little *usnea* moss and a number of spiders' cocoons. Mr. Brewster obtained eggs from the 31st of May to June 23.

The eggs are five to eight in number, white or creamy-white, speckled or spotted with hazel or reddish-brown, chiefly at or around the larger end, often in the form of wreaths. A set of six eggs in Mr. Norris' cabinet collected by Mr. Brewster in Oxford county, Maine, June 5, 1879, exhibits the following sizes: .58 x .46, .58 x .45, .57 x .45, .57 x .45, .58 x .46, .57 x .46. A set of six taken in Buncombe county, North Carolina, May 2, 1888, measures .59 x .45, .58 x .46, .57 x .44, .56 x .45, .58 x .45, .58 x .45. Several other sets in the same cabinet show great variation. The average size is .59 x .47.

726a. *Certhia familiaris mexicana* (GLOG.) [55a.]**Mexican Creeper.**

Hab. Northern Central America (Guatemala), Mexico, and Southern Arizona.

No reliable information is at hand regarding the nidification of this Mexican form of the Creeper which is, doubtless, similar to that of *C. f. americana*.

* * *Certhia familiaris montana* RIDGW. [55, part.]**Rocky Mountain Creeper.**

Hab. Rocky Mountain district, north to Alaska; west to Nevada, etc. Ridgw.

The nesting and eggs of this are like those of the Brown Creeper of the Eastern States. Prof. Ridgway gives the average size of the eggs as .59 x .46.

* Cf. Bull. Nutt. Ornith. Club, IV, pp. 199-209.

** *Gerthia familiaris occidentalis* RIDGW. [55, *part.*]**Californian Creeper.**

Hab. Pacific coast region of North America from California to Southern Alaska.

This race of the Creeper is confined to the Pacific coast region. Dr. Merrill met with it in the vicinity of Fort Klamath, Oregon, and states that in no part of the West did he find it so abundant as there. Several pairs bred in the immediate vicinity of the Fort, and during the winter several of their characteristic nests were found hidden by loosened scales of bark, usually on pines, but once or twice on aspens. The eggs, according to Prof. Ridgway, average .61 x .48.

727. *Sitta carolinensis* LATH. [51.]**White-breasted Nuthatch.**

Hab. Eastern United States and British Provinces.

The White-breasted Nuthatch is often improperly called "Sapsucker," a name commonly applied to the Downy Woodpecker and others. Nearly every person readily recognizes this black-capped species as it runs up and down and around the branches and trunks of trees in search of insect food, now and then uttering its curious *quank, quank, quank*. It is a common breeding bird throughout its range and usually begins nesting early in April. Two broods are not infrequently reared in a season. This species usually selects for its nesting place the decayed trunk of a tree or stub, ranging all the way from two to sixty feet above the ground. The entrance may be a knot-hole, a small opening, or a round perforation is constructed and a cavity within in which the nest is made. Often the old excavation of the Downy Woodpecker is made use of. The nest is composed of chicken feathers, hair, and a few dry leaves loosely thrown together.

The eggs are five to eight in number, rarely nine and ten; their usual shape is somewhat long and pointed. They are white with a roseate tinge, speckled or spotted with reddish-brown and a slight tinge of purple. The markings as a rule are thickest near the larger ends. The average size of ten specimens is .77 x .56.

728a. *Sitta carolinensis aculeata* (CASS.) [51a.]**Slender-billed Nuthatch.**

Hab. Western United States east to and including the Rocky Mountains, south into Mexico.

This bird is similar to the last but has a longer and slenderer bill. It is abundant in the wooded and mountainous regions of the West, replacing *S. carolinensis*. It possesses the same characteristic habits of the White-breasted Nuthatch of the Eastern States, nesting also in a like manner. Mr. W. O. Emerson states that it breeds in all the coast range valleys of California, wherever there is plenty of white and black oak timber, and also high up in the Sierras. The nests are

built in cavities or knot-holes of trees and stumps, composed of feathers and sometimes mostly of rabbit's fur.

Six or seven eggs are usually laid; they are creamy-white speckled with reddish-brown and hazel. Captain B. F. Goss has a set of seven eggs in his extensive collection which he took from a hole in a tree seven feet from the ground, in Southern California, May 7, 1884. These measure respectively, $.75 \times .57$, $.75 \times .53$, $.74 \times .53$, $.73 \times .57$, $.78 \times .54$, $.71 \times .57$, $.72 \times .56$. A set of six in Mr. Norris' cabinet was taken near Kingston, New Mexico, May 4, 1885. These measure $.73 \times .53$, $.71 \times .53$, $.73 \times .54$, $.73 \times .54$, $.74 \times .54$, $.75 \times .54$.

728. *Sitta canadensis* LINN. [52.]

Red-breasted Nuthatch.

Hab. Whole of North America, breeding chiefly north of the United States, except in western mountainous regions; Eastern United States chiefly in winter.

This is a common bird throughout North America, breeding from Northern United States northward. Its habits are essentially the same as those of *S. carolinensis*. Mr. Manly Hardy has written a good account of this bird's breeding habits in Maine.* He found them nesting in white birch and poplar stubs, usually from ten to fifteen feet, and sometimes as low down as four feet above the ground. In making the entrance to the nest-cavity proper, the birds perforate the bark in a circle with smaller holes, and then take out the center piece. A strange fact concerning the nests found by Mr. Hardy and others, is that the bark at their entrance is coated with fir balsam or pitch from an inch to three or four inches around the hole. In one instance the pitch extended down for twenty-one inches, and was stuck full of the red breast-feathers of the Nuthatches. The cavities are about four inches deep, in which the nest is made of fine grass.

The eggs, four to six in number, are very thickly spotted with reddish-brown. Average size $.60 \times .50$.

729. *Sitta pusilla* LATH. [53.]

Brown-headed Nuthatch.

Hab. South Atlantic and Gulf States, north regularly to Southern Maryland and Virginia, casually to Ohio, Michigan, Missouri, etc.

The home of the Brown-headed Nuthatch is in the South Atlantic and Gulf States, where it is a common breeder. Its habits are generic. Mr. Arthur T. Wayne states that in South Carolina the Brown-headed Nuthatch pairs in the latter part of January, and the birds begin to excavate a hole in a dead stump or limb of a tree, usually not more than a few feet or inches from the ground, and, again, as high as forty or fifty feet. Eggs may be obtained in March, as four or five

* Bull. Nutt. Ornith. Club, III, 196.

weeks are required to complete the excavation. Mr. George Noble informs me that he found a nest of this species in the cavity of a stump in a pond. It was two feet from the surface of the water. Mr. C. S. Brimley found eggs of this species near Raleigh, North Carolina, in the month of April. Mr. Wayne says that the birds dig several holes before a satisfactory one is completed for the nest. The cavity extends downward from eight to twelve inches, and is filled with short pieces of grass, bits of cotton, wool, feathers, and the leaf-like substance of "pine seed leaves."

The eggs are five or six in number. A series of twenty-four sets in Mr. Norris' cabinet present a varied appearance with regard to their coloration, etc. The ground-color varies from white through creamy-white, to a dull white, and the markings are several shades of reddish-brown and lavender-gray. The sizes of the eggs in a set containing the smallest specimens are .57 x .47, .59 x .48, .59 x .48, .57 x .47, .57 x .48; the largest, .62 x .49, .59 x .47, .64 x .49, .64 x .49, .62 x .48. The average size is .62 x .49.

730. *Sitta pygmæa* VIG. [54.]

Pigmy Nuthatch.

Hab. Western United States east to and including the Rocky Mountains; from the northern boundary south into mountainous districts of Mexico.

This diminutive Nuthatch is found throughout Western United States from the Rocky Mountains to the Pacific. It is abundant, chiefly in pine woods in mountainous districts, nesting like the rest of the genus in holes of trees. Mr. Charles F. Morrison gives it as a common species of La Plata county, Colorado, and is resident up to 10000 feet; breeds abundantly, but the nest is hard to find.

The eggs are from six to nine in number. They are crystalline white, speckled more or less thickly with brick-red, varying in intensity in different specimens. The sizes of the eggs in a set containing the smallest specimens, from a series of nine sets in Mr. Norris' collection, are .51 x .46, .51 x .46, .55 x .45, .53 x .45, .51 x .46, .52 x .46, .53 x .46, .52 x .44, .53 x .45; the largest: .63 x .47, .61 x .45, .59 x .48, .64 x .49, .63 x .47, .63 x .48, .60 x .48, .63 x .48.

731. *Parus bicolor* LINN. [36.]

Tufted Titmouse.

Hab. Eastern United States to the Great Plains, chiefly south of 40°; south to the Gulf Coast, including Florida and Central Texas.

The Tufted Titmouse is an abundant resident in Eastern United States, as far west as Eastern Kansas, and, chiefly however, south of 40°. Its clear, loud whistling song may occasionally be heard in sunny days through the winter months, but particularly in the early spring—

in March, the mating season, for nesting usually begins early in April. Deserted Woodpecker excavations, natural cavities of trees, or those in stubs in deep or open woods are the favorite nesting sites of the Tufted Titmouse. In these cavities the nest is formed of a mass of leaves, moss, corn-stalks, soft, fibrous bark-strips, and the hair of cattle; this is all carried to the nesting place in great mouths full by the female bird. She has often been accused of picking to pieces and carrying away the moss from hanging baskets suspended on porches. Mr. O. C. Poling found a nest of this bird containing five eggs in a box near a ruined building, in the vicinity of Quincy, Illinois.

From five to eight eggs are deposited, five or six being the usual numbers. I have taken three sets in Central Ohio, all containing six eggs. They are of a pure white or light cream ground-color, which is profusely speckled and spotted with different shades of reddish-brown. Eight specimens, selected on account of their sizes, measure .67 x .52, .67 x .51, .69 x .52, .71 x .51, .74 x .53, .76 x .54, .78 x .54, .80 x .56; a common size is .74 x .52.

The Tufted Titmouse will frequently nest in boxes that are put up in the woods for that purpose. The birds are close sitters, and often have to be lifted from the nest before the eggs can be secured. I have no definite information regarding the nesting and eggs of the new variety called Texan Tufted Titmouse, *Parus bicolor texensis* Sennett,* from Southeastern Texas. There is certainly little, if any, difference between them and those of the present species.

732. *Parus atricristatus* CASS [37.]

Black-crested Titmouse.

Hab. Eastern Mexico, north into Southern Texas.

An inhabitant of Southern Texas and southward into Eastern Mexico. Mr. William Lloyd states that this species is a tolerably common resident in Concho and Tom Green counties, Texas, and from thence to El Paso is the prevailing species. Nests were found in old Woodpecker holes April 15, 18 and 20. On the Lower Rio Grande the Black-crested Titmouse was found to be common by Dr. James C. Merrill and Mr. George B. Sennett, where nests containing eggs were found in April. Besides old Woodpeckers' excavations, the nesting sites chosen are hollows or deep cracks in tree trunks. The nest is composed of grasses, inner bark, feathers, moss and wool, and, like the nest of the Blue Grosbeak, it almost invariably contains pieces of snake-skin.

The eggs are usually five or six in number, with a clear, white

* Cf. Sennett, Auk, IV, 29.

ground-color, and small spots of chestnut sparsely scattered over the surface; in other specimens the markings are larger and more closely disposed over the shell. They can be distinguished at a glance from those of *L. bicolor*. The spots on the eggs of *L. atricristatus* are fewer and more scattered than on those of *bicolor*. Five sets of these eggs are in Mr. Norris' cabinet, all collected in Comal county, Texas. The sizes of the eggs in the set containing the smallest specimens are .67 x .53, .65 x .52, .66 x .52, .65 x .52, .68 x .53, .66 x .52; the largest .74 x .55, .74 x .55, .74 x .54, .73 x .55, .71 x .56.

733. *Parus inornatus* GAMB. [38, *part.*]

Plain Titmouse.

Hab. Pacific coast of the United States, from Southern California to Oregon.

The Plain or Western Tufted Titmouse is resident along the coast of California. In some localities it is common, and in others, apparently as well suited to its mode of living, it is scarce or wanting. The nesting sites are the hollows of limbs, usually in oaks. Mr. Walter E. Bryant, of Oakland, California, found a nest of this species placed in the ventilator of an outbuilding. The shape of the nest conforms to the character of the cavity in which it is built; this is filled with fine grasses, feathers, cow's hair, rabbit's fur, moss, and almost any soft substance that is available.* Mr. H. R. Taylor, of Alameda, California, observes that the birds begin to construct their nests as early as March 7, and the selection of a hole well sheltered from the rain is a very necessary precaution. From all accounts the bird is a close sitter; even when a stick is thrust into the nest cavity it is met with a vigorous resistance; and the bird, if taken from the nest and tossed into the air, will often return immediately and settle down on the eggs in presence of the collector. Under these circumstances one or more of the eggs are frequently broken or injured by the bird's claws as she is being removed from the nest.

The eggs are five or eight in number, and may be plain white or spotted. Mr. Frank B. Webster has kindly sent me six eggs of this species, showing their extreme variations. Three of these are pure white, unmarked; the fourth is very obscurely marked with reddish specks at the larger end, while the fifth is distinctly speckled over the entire surface with vinaceous cinnamon, but chiefly at the larger end; the sixth is marked generally over the entire shell. These variations may exist in the eggs of a single set, but usually the specimens in sets are of one type or the other—plain white or speckled. The sizes of the six eggs just described are .68 x .49, .69 x .53, .71 x .51, .72 x .54,

Cf. Henshaw, Bull. Nutt. Ornith. Club, IV, pp. 182-183.

.73 x .52, .74 x .53. Mr. Norris has two sets, consisting of five and eight eggs, respectively, taken near Alameda, California, April 1, 1885, and March 20, 1886. These measure .65 x .51, .66 x .51, .66 x .49, .64 x .50, .66 x .51; .68 x .53, .69 x .53, .66 x .52, .69 x .51, .68 x .52, .68 x .53, .68 x .53, .70 x .53.

734. *Parus wollweberi* (BONAP.) [39.]

Bridled Titmouse.

Hab. Western Texas, Southern New Mexico and Southern Arizona, south into Mexico.

Mr. W. E. D. Scott found this Titmouse to be a rather common resident in the evergreen oak region of both the Pinal and Santa Catalina Mountains of Arizona. It is gregarious, except during the breeding season, going about in small companies. It was frequently found, especially in the fall and winter months, associated with flocks of the Plumbeous Bush-tit (*Psaltriparus plumbeus*) and a pair or more of Arizona Woodpeckers (*Dryobates Arizonae*) are generally found in the band. He observes that the Bridled Titmouse is as unsuspecting and as fond of the society of man as the Black-capped Titmouse (*Parus atricapillus*). On two occasions he discovered it breeding, the nests being located in natural cavities of live oaks, close to his house. The first was found May 9, 1884, which was in a cavity formed by decay, in an oak stump; the opening, which was a small knot hole where the branch had been broken off, was about three and a half feet from the ground. The hollow was lined with cottonwood down, the fronds of some small rock-ferns, and bits of cotton-waste that had been used to clean the machinery of a mill near by. The nest contained three pure white, unspotted eggs, with a pinkish tinge before being blown. Two of these were accidentally broken; the unbroken one measures .63 x .48. Another nest was found May 9, 1885, in a similar location, some six feet from the ground. In addition to the material of the nest already mentioned, there were decayed grasses and rabbit's hair. This nest contained four young just born and two eggs, similar to the last in color—plain, dead white, and measure .65 x .51, .67 x .53. The eggs are said to range from five to seven in number.

735. *Parus atricapillus* LINN [41.]

Chickadee.

Hab. Eastern North America, chiefly north of 40°, west to the Plains.

The little Black-capped Chickadee or Titmouse is an abundant species in Eastern United States, north of the Potomac and Ohio Valleys. The usual nesting time is about the middle of April. Col. Goss gives it as a common resident of Kansas, begins laying early in April.

The nest is constructed in deserted Woodpecker holes, natural

cavities in trees, decayed stumps, hollow fence posts, etc. These places are filled with a mass of leaves, moss, dry grasses and warmly lined with downy feathers, hair from cattle, and often the fur of the smaller quadrupeds.

The eggs are five to eight in number, white, speckled all over, but most thickly at or around the larger ends with light reddish-brown. The average size is .57 x .47.

Of this species Wilson says: "They traverse the woods in regular progression from tree to tree, tumbling, chattering and hanging from the extremities of the branches, examining about the roots of the leaves, buds, and crevices of the bark for insects and their larvæ. They also frequently visit the orchards, particularly in fall, the sides of the barn and barn-yard in the same pursuit, trees in such situations being generally much infested with insects. We, therefore, with pleasure, rank this little bird among the farmers' friends, and trust our rural citizens will always recognize him as such."*

735a. *Parus atricapillus septentrionalis* (HARRIS.) [41a.]

Long-tailed Chickadee.

* Hab. Rocky Mountain district (New Mexico to Alaska), west to the edge of the Great Basin, east nearly across the Plains.

This is the Western form of *P. atricapillus*, and identical with it in general habits. It is found as far east as Missouri, Eastern Nebraska, and Western Minnesota along the Red River, thus slightly overlapping the home of *P. atricapillus* proper. Dr. Agersborg states that it is the only Chickadee found in Southeastern Dakota, and Colonel Goss says it is common in Western Kansas. In the South it has been found in Texas, where it was found mixed with the Southern Chickadee. Prof. Lantz took a fine set of seven eggs April 17, at Manhattan, Kansas, and the next day a set of the eggs of the Eastern form.† The eggs of the Long-tailed Chickadee are dull white, and very uniformly speckled with reddish-brown; their average size is .60 x .47.

735b. *Parus atricapillus occidentalis* (BAIRD) [41b.]

Oregon Chickadee.

Hab. Northwestern coast district of United States, from Northern California northward (to Southern Alaska?).

A common bird along the coast region of Northern California, Oregon and Washington Territory, possessing all the habits of the Eastern *atricapillus*, and nesting in a like manner.

The eggs of the two birds are indistinguishable. Mr. Norris has

* American Ornithology or the Natural History of the Birds of the United States. Illustrated with Plates engraved from drawings from Nature. By Alexander Wilson and Charles Lucian Bonaparte. Popular edition. Four volumes in one. Philadelphia: Porter & Coates. Vol. II, p. 214.

† Cf. Report on Bird Migration in the Mississippi Valley in the years 1884 and 1885, by W. W. Cooke. Edited and revised by Dr. C. Hart Merriam, Washington. Government Printing Office. 1888. P. 278.

two sets of the eggs of the Oregon Chickadee. One of six eggs, taken in Coos county, Oregon, April 28; they measure .58 x .48, .60 x .48, .60 x .44, .59 x .48, .62 x .47, .59 x .54; another containing six eggs was taken in Pacific county, Washington Territory, from a cavity which was lined with moss and hair, in an alder stub. These measure .61 x .47, .60 x .48, .62 x .48, .60 x .48, .60 x .48, .61 x .48.

736. *Parus carolinensis* AUD. [42.]

Carolina Chickadee.

Hab. Eastern United States, chiefly south of 40°, west to Missouri, Indian Territory and Eastern Texas.

The Carolina or Southern Chickadee is a common bird in Eastern United States, chiefly south of 40°. It is supposed to be resident throughout its range, and is particularly abundant in the Southern States. This bird, like the Black-capped Chickadee, nests in old Woodpeckers' excavations, natural cavities of trees, hollow fence rails, etc., not at a great elevation. The material used in these cavities consists of fine, dry grasses, shreds of fibrous bark, with a warm lining of feathers, cattle hair and fur of the smaller quadrupeds.

The eggs are five to eight in number, white, sprinkled with specks and small blotches of reddish-brown. In a large series, however, there is considerable variation, both in color and size. Ten specimens average .60 x .50. The eggs are not distinguishable from those of *Parus atricapillus*.

** *Parus carolinensis agilis* SENN.

Plumbeous Chickadee.

Hab. Eastern and Central Texas (Bee, Victoria, Cook and Concho counties, etc.).

Mr. George B. Sennett, who describes this new Chickadee* says that it can be distinguished from its nearest ally, *P. carolinensis*, by its whiter underparts; by its being almost entirely free from buff washings on sides, and from olive and brown washings on upper parts; and its very pale lead color on back. Mr. J. A. Singley has sent me five eggs of this bird which he collected in Lee county, Texas, with full details of the bird's nidification. The nest is usually excavated in an oak stub at elevations ranging from two to fifteen feet. Deserted Woodpecker holes, natural cavities in trees are commonly chosen, and occasionally Martin boxes are used. The breeding season is from the last of February to the first of May. The foundation of the nest is made of short, green moss, mixed with animal hair, and the lining, as a rule, is of rabbit fur. The bird sits so closely that it usually has to be lifted from the nest.

The eggs are five to eight in number, white, variously speckled,

* The Auk, V, p. 46.

spotted and blotched with cinnamon-rufous. They cannot be distinguished from the eggs of *P. atricapillus* or *carolinensis*, and vary in as great a degree, both in size and coloration, as eggs of the same species are found to differ. The sizes of the five eggs just mentioned are .56 x .43, .61 x .47, .62 x .50, .63 x .47, .63 x .50.

This plumbeous colored Chickadee is very likely the prevailing form of Texas.

738. *Parus gambeli* RIDGW. [40.]

Mountain Chickadee.

Hab. Mountainous regions of Western United States.

The Mountain Chickadee inhabits the mountainous regions of Western United States, chiefly the alpine districts. It nests in old Woodpeckers' excavations and natural cavities of trees and stumps, from two to twenty feet above the ground. Fibrous roots, grasses, sheep's wool, cattle's hair, or fur of the smaller quadrupeds constitute the materials of the nest; these will vary with the locality. A nest of this bird was found in a rotten stump, two feet from the ground, by Mr. L. Belding, near Marysville, California, containing seven white eggs.* Dr. Brewer describes a nest which was discovered by Mr. Charles A. Allen, June 11, 1879, in the mountains of Placer county, California. It was constructed in an old hole of the White-headed Woodpecker, *Xenopicus albolaryvatus*, and contained seven eggs, six of which were pure white, unspotted, and the seventh marked over the entire surface with dots of reddish-brown.† Dr. James C. Merrill found a nest of this species in Montana, on June 18. It was in a cavity of a pine, about sixteen feet above the ground, and contained five or six young and one addled egg, which was dull, unspotted, chalky-white.‡ Dr. Elliott Coues makes note of two white unmarked eggs of this species, taken by William G. Smith, in Colorado.§ Dr. Merrill says that this species is perhaps the most common resident species at Fort Klamath, Oregon, and in winter seldom out of sight or hearing. Between May 25 and July 4 five nests containing eggs were discovered in Woodpeckers' holes in aspen or pine stubs.

The eggs were five to eight in number, and of the five sets two are entirely unspotted; in two, one or two eggs are pure white, the others having faint, light brown spots, mostly at the larger end; in the other set two of the eggs are quite unmarked, but the others have distinct reddish spots. He states that the female birds sit very close, and when disturbed keep up a constant hissing, so much like that of some snakes

* Cf. Bull. Nutt. Ornith. Club, III, 102-103.

† *Ib.* V, 47.

‡ *Ib.* VI, 204-205.

§ *Ib.* VIII, 240.

that no prudent squirrel would venture to enter the hole.* Mr. Norris has a set of seven eggs, taken near Fort Klamath, Oregon, May 15, 1888. These are white, faintly speckled with vinaceous-cinnamon, and measure .58 x .46, .58 x .48, .58 x .46, .58 x .47, .60 x .47, .60 x .47, .60 x .47. Another containing eight eggs, taken June 12, 1886, near Downer, California, by A. M. Ingersoll, is like the last set in coloration—white, very faintly speckled with vinaceous-cinnamon. Their sizes are .62 x .48, .63 x .49, .63 x .47, .63 x .41, .61 x .48, .61 x .47, .60 x .46, .63 x .47.

739. *Parus cinctus obtectus* (CAB.) [44.]

Siberian Chickadee.

Hab. Eastern Siberia and Northern Alaska.

An inhabitant of Eastern Siberia and northern portions of Alaska. Its habits, nesting and eggs are similar to those of *P. gambeli*. Eggs, .65 x .50.

740 *Parus hudsonicus* FORST. [45.]

Hudsonian Chickadee.

Hab. Northern North America east of the Rocky Mountains, south to the more elevated portions of the United States—New England, New York, Northern Michigan, Etc.

The Hudsonian Chickadee is resident in Labrador and the Hudson Bay region. It is given as a resident of Northern New England, and breeds on the Island of Grand Manan, New Brunswick. Audubon found a nest of this Chickadee in Labrador, built in a decayed stump about three feet from the ground and composed entirely of the finest fur of various quadrupeds, chiefly of the northern hair, and all so thickly and ingeniously matted throughout as to seem as if felted by the hand of man. Mr. Montague Chamberlain mentions several nests that were found in New Brunswick, one of which was built in a cavity of a telegraph pole and others built in decayed stumps. He says that when this species is excavating for its nest it sometimes enters from the side of a tree and not invariably from the top of a stump. Mr. James W. Banks, during the seasons of 1885 and 1886, discovered three nests, the entrances of which were at the side of a decayed stump. One of these nests is about two inches deep and is set on a cushion of dried moss, and besides the felted fur there is considerable dry moss mixed throughout. The entrance was about six inches from the top of the nest†

The eggs are usually six or seven in number. A set of seven in Mr. Norris' cabinet was taken June 9, 1876, at Grand Manan, New Brunswick, from a cavity in a dead tree about five feet from the ground. They are creamy-white sprinkled with hazel. Sizes .55 x .48, .58 x .46, .60 x .46, .56 x .47, .56 x .47, .56 x .47, .55 x .48. The eggs of the

* Cf. The Auk, V, 363-364.

† Bull. Nutt. Ornith. Club, VIII, p. 10, and The Auk, IV, 261.

Hudsonian Chickadee are described as white, sparingly spotted with reddish-brown and hazel, often grouped in a circle about the larger end; average size .58 x .50.

741 *Parus rufescens* TOWNS [46.]

Chestnut-backed Chickadee.

Hab. Northwestern coast — Oregon, Washington Territory, British Columbia, and Southern Alaska.

The Chestnut-backed Chickadee is an inhabitant of the Northwest coast where, in some regions, it is rather common. Mr. A. W. Anthony gives it as a common winter resident of Washington county, Oregon. It was first seen by him in December, 1884, in company with the Oregon Chickadee, *Parus atricapillus occidentalis*. A few lingered to breed, but disappeared as soon as the first brood was raised. A nest was found April 28, in a large fur stub three feet four inches in diameter, running horizontally three inches then turning downward for six inches before opening into the nest, which was of cow and rabbit hair. It contained seven eggs with large embryos. These Mr. Anthony does not describe and there appears to be no published account of them. They are probably very similar to those of the Californian Chickadee, *P. rufescens neglectus*.

741a *Parus rufescens neglectus* RIDGW. [46a.]

Californian Chickadee.

Hab. Coast district of California.

This bird is confined to the coast regions of California where Mr. W. O. Emerson informs me it can always be found in the redwood belts. He has only seen two birds of this species in the vicinity of Haywards, which is doubtless on account of there being no redwood timber. It nests in cavities of trees and stumps, and in old Woodpeckers' excavations, making the nest of quadrupeds' hair.

Six or seven eggs are usually deposited. A set of six eggs in Mr. Emerson's collection was taken by Mr. George H. Ready, April 13, 1885, in Santa Cruz county, California. They were taken from an old cavity of a Gairdner's Woodpecker in a maple stub, eight feet from the ground. The eggs are similar to some specimens of the Black-capped Chickadee, *Parus atricapillus*, being white, sparsely marked over the entire surface with red spots, and tending to form a ring at the larger end; average size is .63 x .47.

742. *Chamæa fasciata* GAMB. [35, part.]

Wren-Tit.

Hab. Coast region of California.

The Ground-Tit or Wren-Tit, which partakes of the features of a wren and a titmouse, may not be considered a common species in the Pacific Coast region of California. On account of its retired habits

it is seldom seen. It frequents the shrubbery of out-of-the-way ravines and solitary canons, often where there is no water. The nest is built in low bushes from two to four feet above the ground, is cup-shape in form, with thick walls, and compactly made of bark-strips, grasses, fibrous roots, lined with cattle hair. The cavity measures about three inches in width and three-fourths deep. The breeding season begins in May, and two broods are usually reared in a season. From three to five eggs are laid, four being the usual complement; they are of a plain pale blue, a shade darker than those of the Black-throated Bunting or Dickcissel, *Spiza americana*.

Eight eggs of this species, collected by Mr. R. B. Herron in San Gorgonia Pass give the following respective measurements: .68 x .54, .66 x .54, .69 x .58, .77 x .56, .75 x .55, .76 x .56, .75 x .55. The average size is .73 x .56. Mr. Emerson informs me that the birds sit very close on the nest, and when flushed immediately set up a hissing or cricket-like sound.

The Pallid Wren-Tit, *Chamæa fasciata henshawii* Ridgw. is a paler form, inhabiting the interior regions of California.

743. *Psaltriparus minimus* (TOWNS.) [47, part.]

Bush-Tit.

Hab. Northwest coast, from Northern California to Washington Territory.

This is a darker-colored species than the California Bush-Tit. It is a common resident of Oregon and northward into Washington Territory. Breeds preferredly in thickets of ash and willow, building a beautiful pensile nest like that represented in our illustration of *P. m. californicus*. Mr. Norris has a set of seven eggs of this species which was taken near Salem, Oregon. The nest was made of moss and hair and was situated in a sapling, fourteen feet from the ground. The eggs are pure white, unmarked, and measure .60 x .41, .59 x .41, .59 x .41, .59 x .41, .59 x .40, .57 x .41, .58 x .40.

743a. *Psaltriparus minimus californicus* RIDGW. [47, part.]

California Bush-Tit.

Hab. California, except northern coast district.

This lighter colored Bush-Tit is a common bird in California. It frequents bushes and low shrubbery, and very actively hops among the branches, hanging from them in the manner of other Titmice. The beautiful and bulky purse-shaped nest built by this species seems out of all proportions to the diminutive size of the bird. The one shown in our illustration is drawn from a typical specimen collected near Santa Paula, California, by Dr. S. P. Guiberson, April 11, 1885. It was suspended from a small, forked twig, eight feet from the ground. It

is six inches long. Prof. Evermann says that the nests vary all the way from four to twenty-two inches in length.

From five to nine pure white, unmarked eggs are laid, commonly six or seven. Ten eggs out of a number collected by Mr. R. B. Heron in San Gorgonia Pass in May, measure .51 x .40, .53 x .40, .51 x .39, .54 x .40, .55 x .41, .56 x .41, .54 x .41, .55 x .43, .54 x .44, .54 x .42.

744. *Psaltriparus plumbeus* BAIRD. [48.]

The Lead-colored Bush-Tit.

Hab. Rocky Mountain district, from Western Colorado and Wyoming Territory to Eastern Oregon and Western Nevada, south to Southern New Mexico and Arizona

The following is Captain Charles E. Bendire's account of the nesting and eggs of this species:

"Although this little Bush-Tit is a widely distributed species throughout the West, and has been known to naturalists for more than thirty years, nothing whatever has been placed on record respecting its nesting habits. The credit for the discovery of their nests and eggs belongs to Lieutenant Benson, who found them breeding abundantly in the vicinity of Fort Huachuca during the month of April, 1887. Their favorite abiding places seemed to be along dry water-courses, up narrow ravines, running into the mountains and on the flats, covered with scrub-oak, between the hill-sides; he says that they are exceedingly tame, perfectly unconscious of danger, and will work on their nests with a person not ten feet away from them. They are one of the first birds to arrive in the spring, but are not resident throughout the year.

"The nests, of which a number are before me, are all more or less gourd-like in form; that is, considerably narrower near the top than around the bottom. They are not strictly pensile, but are woven into and supported by small twigs and branches of the oak bushes (*Quercus undulata?*) in which they are built. Several nests were placed in bunches of a species of mistletoe (probably *Phoredendron flavescens*), and in these cases the nests are supported and placed directly in the forks of this plant. They vary in length from 7 to 9½ inches and from 4 to 5 inches in diameter. The entrance to the nest is on the side, near the top of the structure, about three-quarters of an inch in diameter. The inner cavity is from 4 to 5 inches deep, and about 1½ inches in diameter. The nests are outwardly composed of the dried, curled-up leaves of the white sage, plant-down of a pinkish tint, spider webs, small bits of mosses and lichens, and are thickly lined inside with soft, small feathers. The walls of the nest increase in thickness from top to bottom, so that while near the top they are not over three-eighths of an inch through, near the bottom they are fully 1½ inches thick.

The nests are placed in about equal proportions in low oak bushes, from five to seven feet from the ground, generally well concealed by the foliage, or in bunches of mistletoe in oak or mesquite trees, from 15 to 20 feet high. Some of these birds commenced building in the first week of March, but no eggs were discovered in any of the nests till fully a month later, the first ones being taken April 8, 1887.

"The number of eggs to a set varies from four to six, five being the most common number found. Probably two or more broods are raised during the season. The eggs are pure white in color, ovate in shape, and measure .56 x .42 inches for the largest to .49 x .40 for the smallest. Their average size is .53 x .40 inch."*

Capt. B. F. Goss has a set of four eggs of the Lead-colored Bush-Tit, taken near Fort Huachuca, Arizona, April 10, 1887. These measure .55 x .45, .55 x .44, .56 x .45, .58 x .44.

746. *Auriparus flaviceps* (SUND.) [50.]

Verdin.

Hab. Northern regions of Mexico and contiguous portions of the United States, from Southern Texas to Arizona and Lower California.

The little Yellow-headed Bush-Tit or Verdin is a common bird in suitable localities throughout the arid regions of Northern Mexico, the southern portions of Texas, Arizona, New Mexico, and in Lower California. It is smaller than the largest North American Hummingbird, *Eugenes fulgens*, which inhabits Southern Arizona and southward. This species measures about 5.00 in length, while the length of the Verdin varies from 4.00 to 4.60 inches. Notwithstanding the diminutive size of the bird, it builds a remarkable structure for a nest—large, and bulky, and a marvel of bird architecture. It is comparatively easy to find, being built near the ends of the branches of some low, thorny tree or shrub—in the numerous varieties of cacti and thorny bushes which grow in the regions of its home.

The nest is globular, flask-shaped or retort-shape in form, the outside being one mass of thorny twigs and stems interwoven, while the middle is composed of flower stems and the lining is of feathers. The entrance is a small circular opening. Mr. Sennett took a number of the birds, nests and eggs at Lomita, on the Lower Rio Grande. Dr. Merrill did not observe this species in the immediate vicinity of Fort Brown, Texas, but it was rather common at Edinburgh in April and May, frequenting mostly amargosa chapparal. Mr. H. P. Atwater found it a resident and quite common at San Antonio, Bexar county, Texas, where a number of skins, nests and eggs were taken in 1884;

* Notes on a collection of Birds' Nests and Eggs from Southern Arizona Territory. By Capt. Chas. E. Bendire, U. S. A. Proceedings of U. S. National Museum, 1887, pp. 557-558.

the first nest was found March 31, and contained four fresh eggs. Mr. Atwater says that the birds occupy the nests during the winter months, and the inside is made much warmer by the addition of feathers. The birds are generally found nesting in the high, dry parts of the country, away from tall timber, where the thorns are the thickest.

From three to six eggs are deposited, of a bluish or greenish-white or pale blue, speckled, chiefly round the larger end, with reddish-brown. Their average size is .59 x .43.

748. *Regulus satrapa* LIGHT. [33.]

Golden-crowned Kinglet.

Hab. Eastern and Northern North America as far west as the Rocky Mountains. Breeds in the northern and elevated portions of United States northward; wintering nearly throughout Eastern United States southward to Northern Central America.

Although a dainty little creature, the Golden-crowned Kinglet appears to be of a hardy nature, being found during the winter months nearly throughout the Eastern States. Breeds from the northern portions of the United States northward, moving south in the fall, returning northward in spring, and retiring to its breeding grounds. It is resident in Northern New England.

Mr. H. D. Minot found a nest of this species containing young, in the White Mountains of New Hampshire, July 16, 1876.* The late Dr. T. M. Brewer describes a nest which doubtless belonged to this bird, and which was found in the neighborhood of Bangor, Maine. It contained ten eggs and was built in a fir tree, at an altitude of six feet. It consisted of a large ball of green moss, about four and a half inches in diameter. A nest was found by Dr. Northrup at Caribou, Maine, containing an incomplete set (five eggs). It was placed partly pendant from a horizontal branch of a small hemlock at the edge of a forest. Mr. Chas. H. Andros records a nest containing ten eggs, taken "on or about June 1," at Grand Manan, New Brunswick. This nest was saddled on a spruce limb and was similar in shape to the nest of the Blue-gray Gnatcatcher, but much larger and deeper, and was externally covered with green moss, cobwebs and lichens, internally lined with soft down and sheep's wool. †

By far the best account we have of the nidification of the Golden-crowned Kinglet is that recently given by Mr. William Brewster, who found it nesting in a dense woods of mixed pines and spruce, on low, rather swampy ground, in the neighborhood of Winchendon, Worcester county, Mass. ‡ With the assistance of Messrs. C. E. Bailey, S. W. Denton and H. M. Spelman, three nests were secured, two with sets of

* Minot's Land and Game Birds of New England, p. 56.

† Ornithologist and Oologist, XII, 293-204.

‡ The Auk, V, 337-344.

nine eggs each. They were found June 13, 16, and 17, (1888), respectively, and were all taken on the 29th. The first was placed in a tall, slender spruce, within about two feet of the top of the tree, and at least sixty feet above the ground; suspended among the fine pendant twigs, about two inches below a short horizontal branch, some twelve inches out from the main stem; the second was in a heavily-limbed spruce, about fifty feet above the ground, twenty feet below the top of the tree, six feet out from the branch, in a dense cluster of stiff radiating twigs; the third was also in a spruce, thirty feet from the ground, twelve feet out from the main stem and five feet from the end of the branch. This nest on the 29th contained no eggs, and was evidently deserted; it was found in a dilapidated condition. In position the first nest resembles that of the Baltimore Oriole, being near the ends of long, drooping twigs. The second is built more like a Vireo's, but with this difference, that instead of being suspended by its upper edges only, and between the forks of a single stem, it is supported on every side, and from the top nearly to the bottom, by numerous stiff, radiating twigs. It is nevertheless a distinctly pensile nest. The third is different from either of the others in position. Placed nearly midway between two stout branches, which in reality are forks of the same branch, one above the other, and attached by the sides and upper edges to the twigs which depend from the branch above, while its bottom rests firmly on a bristling platform of stems which rise from the branch below. Thus it is at once pensile and non-pensile.

The material used in the construction of these nests on the exterior is chiefly green mosses, diversified with grayish lichens and *usnea*, the whole resembling the general color of the surrounding foliage. The interior at the bottom is lined with delicate strips of soft inner bark and fine black rootlets. Near the top are rather numerous feathers of the Ruffed Grouse, Red Crossbill, Hermit Thrush, and Ovenbird, arranged with the points of the quills down, the tips rising to or slightly above the rim, and arching inward over the cavity, forming a screen that partially concealed the eggs. In both nests, the space being too small for the accommodation of the numerous eggs, they were piled in two layers, one above the other. In the first nest the number in each layer was not noted, but in the second five eggs were in the lower layer and four in the upper. All of these nests were found by watching the birds building; and, taking into consideration the dim light of dense spruce woods, the torture one must endure from mosquitoes while watching the erratic and puzzling movements of the birds flying from branch to branch with their bills filled with material,

the rapidity and unaccountable way in which the substance was often deposited in the clusters of dense foliage, made it a very difficult and tedious task to locate the nest in the many similar dark clusters in the spruces.*

The eggs vary from creamy-white to exceedingly deep, often somewhat muddy, cream color, sprinkled with numerous markings of pale wood-brown, varying from small dots to blotches. Three specimens are described by Mr. Brewster as having spots and blotches of faint lavender. The markings of most of the specimens are distributed pretty thickly over the entire shell, but in nearly all they are most numerous about the larger ends, where they form a more or less distinct wreath. The sizes of Set A, nine eggs, are .56 x .44, .57 x .44, .55 x .42, .57 x .43, .57 x .44, .56 x .45, .57 x .44, .57 x .44.

748a. *Regulus satrapa olivaceus* BAIRD [33a.]

Western Golden-crowned Kinglet.

Hab. Pacific coast region from California to Sitka,

The nesting and eggs of this Pacific coast form of Golden-crowned Kinglet are similar to those of *R. satrapa*.

749. *Regulus calendula* (LINN.) [30.]

Ruby-crowned Kinglet.

Hab. Entire North America, breeding from the northern border and higher mountains of the United States northward. Winters in more Southern United States and southward to Northern Central America.

The Ruby-crowned Kinglet breeds from the extreme northern border and higher mountains of the United States northward. Mr. W. E. D. Scott took a nest containing five eggs on June 25, at Twin Lakes, Colorado. The nest was suspended to the leaves of the uttermost twigs of a pine tree, much like a Vireo's nest, and about twelve feet from the ground. Mr. Frank M. Drew states that in San Juan county, Colorado, this bird breeds from 7000 to 10000 feet altitude. A nest taken July 5 was placed in the uppermost branches of a spruce thirty feet from the ground—in one of those dark masses where the cones grow thickest. It contained four young and one addled egg. Dr. Merrill found a nest of this species containing eight eggs, in Montana, on the 18th of June, at an elevation of 7700 feet. It was in a fir tree about eighteen feet from the ground, and placed directly against the trunk, supported by a single branch beneath, and by several twigs to which the sides were firmly attached. Dr. Merrill also found these

* Mr. Brewster says that in her flights after building material the female went a distance of a hundred yards or more, but oftener she confined her quest to the trees within a radius of fifty yards or less of the one which concealed the nest. She was invariably followed closely by the male, who, however, did not assist her in any way other than by singing almost incessantly in an undertone. In the case of the nests discovered, the males' singing was the characteristic performance which attracted attention to the spot where the female was at work.

birds common about Fort Klamath, Oregon, apparently placing their nests in dense firs. Mr. Montague Chamberlain records a nest which was taken at Lennoxville, Quebec, May 15, 1882. This was pensive, and was attached to the branch of a small tree. It contained nine eggs, one of them a Cowbird's.

The nests of the Ruby-crown vary somewhat in their general style of structure and in composition. They are usually semi-pensive, neatly and well made with soft, thick walls, composed of moss, fine strips of bark, and well lined with feathers of various birds, which are woven into the sides and bottom of the structure.

The eggs are five to nine in number, and are dull whitish or pale buffy, faintly speckled or spotted with light brown, chiefly at the larger ends. Their average size is .55 x .43. Some of the eggs of this bird are said to be nearly plain.

750. *Regulus obscurus* RIDGW. [31.]

Dusky Kinglet.

Hab. Guadalupe Island, Lower California.

Mr. Walter E. Bryant found the Dusky Kinglet frequenting more numerous the large cypress grove on Guadalupe Island; they were also found in the smaller groves and among the pines. As early as the middle of February, nest-building was in order, the birds selecting the topmost foliage of a cypress, and sometimes the very outer extremity of a horizontal branch. After many days' diligent search, three nests were observed, and these were detected by watching the birds collect building material, or by tracing to its source a peculiar, low song which the male sometimes sings when close to the nest. These nests were all found over twenty feet high, and only one could be seen from the ground, and that merely during the intervals when the wind parted the branches. They were placed in the midst of a thick bunch of foliage and but lightly secured to the twigs. Compact, though not very smooth in structure, they were composed of soft bark-strips intermingled with feathers, bits of moss, fine grass and cocoons. Additional warmth is secured by a quantity either of goat's hair or feathers, and, lastly, a thin lining of goat's hair. Their external measurement is about 70 mm. in height by 90 mm. in diameter, while the internal depth is about 45 mm., and diameter 35 to 45 mm.*

A nest containing two fresh eggs was found March 24, in the top of a slender cypress twenty-five feet high. It could not be seen from the ground, but was located by the subdued song of the male bird. In color the eggs are white, with a dense wreath of pale yellow-

* External height about 2.76, diameter 3.54; internal depth 1.77, and diameter 1.38 to 1.77.

ish-brown spots encircling the larger end. In some places these spots appear to be laid over a pale lavender washing, and in one specimen, these fine, almost indistinct dots extend sparingly over the entire surface. They measure in millimeters, 14 x 11 and 15 x 11. †

751 *Polioptila cærulea* (LINN.) [27.]

Blue-gray Gnatcatcher.

Hab. United States chiefly south of latitude 42°. Winters in the Gulf States, Cuba and Bahamas, occasionally Mexico and Northern Central America. Rare north toward the Great Lakes, Southern New York, Southern New England.

The Blue-gray Gnatcatcher is an abundant bird throughout most of the wooded districts of the United States, breeding in suitable places, south of 42°. As a work of beauty and ingenious architectural design the nest of this bird has few equals in this country. On the whole it is a rather frail structure, usually built in the small upright twigs or saddled on the horizontal limbs of trees at heights ranging from ten to fifty feet, but generally at an elevation of about fifteen or twenty feet. The typical nest has high, compact walls, contracted at the brim and gracefully turned; the interior is deeply cupped, and the exterior is beautifully ornamented with lichens. The nest shown in our illustration is selected from eight specimens which I took on a little island in the Scioto river, Franklin county, Ohio, May 27, 1885. Ten nests of this species collected by Mr. R. B. Herron in San Gorgonia Pass, California, are entirely deficient of the lichens which characterize the Ohio nests. The interior is composed of soft downy materials—cotton-like substances of withered blossoms and the silky down of the milkweed—fine wiry grasses, stems of old leaves, horse hair and an occasional feather from the breast of the bird is intermingled. The cavity measures from one to one and a half inches deep, and about the same in diameter. At a short distance the nest often looks like a round knot protruding from the limb.

The eggs are four or five in number; their ground-color is greenish or bluish-white, speckled with chestnut, and in some the markings are of a darker brownish tinge. Ten specimens measure, .55 x .42, .56 x .43, .57 x .45, .58 x .45, .57 x .42, .56 x .41, .58 x .47, .59 x .44, .58 x .44, .59 x .45.

752. *Polioptila plumbea* BAIRD. [28.]

Plumbeous Gnatcatcher.

Hab. Southwestern border of the United States—Southern Texas to Lower Rio Grande Valley; Northern Mexico and Lower California to Cape St. Lucas.

A nest of the Plumbeous Gnatcatcher was taken at Yuma, Arizona, by Mr. F. Stephens, July 15, 1881. It was placed in a bunch of mistletoe, at a height of about eight feet from the ground, and contained one

† .55 x .43, .59 x .43.

egg of its owner and one of the Dwarf Cowbird. Mr. William Brewster says that although a delicate structure the nest will not compare with that of the Blue-gray Gnatcatcher, entirely lacking the exterior coating of lichens, but in its general appearance closely resembles the Redstart's, being felted with soft bark-strips and hemp-like vegetable fibres. It was lined with plant down, a few feathers and the hair of some small quadruped. Mr. Brewster describes the eggs as pale greenish-blue, coarsely and very evenly spotted with reddish-brown; size .53 x .42.* Mr. Stephens found two nests of the Black-capped Gnatcatcher at Yuma, Arizona, in May, 1886, containing four eggs each; one of these contained an egg of *Molothrus ater obscurus*.† A set of four eggs in Mr. Norris' collection was taken April 4, 1886, near Pima, Arizona. They exactly resemble those of *P. cæculea*, and measure .55 x .42, .52 x .42, .53 x .43, .54 x .43.

753. *Polioptila californica* BREWST. [29.]

Black-tailed Gnatcatcher.

Hab. Pacific coast of Southern California and northern portion of Lower California.

"This gnat-catcher was first described by Mr. William Brewster, from specimens collected by Mr. F. Stephens, near Riverside, San Bernardino county, California, March 28, 1878.

"A nest and four eggs of this species have recently been obtained from Mr. Stephens, to whom the credit belongs for the discovery of the first specimens. These were taken near the town of San Bernardino, California, on May 2, 1887, and are now in the National Museum collection (Catalogue No. 23294).

"The nest of *P. californica*, like that of *P. plumbea* BAIRD, from Arizona Territory, differs radically in its structure from that of its Eastern relative, *P. cærulea* (LINN.), which is too well known to ornithologists to require description. It lacks entirely the artistic finish of the lichen-covered structure of the former, and resembles more in shape certain forms of the nest of the Summer Yellow Warbler, *Dendroica æstiva* (GML.), and the American Redstart, *Setophaga ruticilla* (LINN.).

"The nest is cone-shaped, built in the forks of a small shrub, a species of mahogany, *Coleogyne ramosissima* (TORR.) I think, only two feet from the ground, and it is securely fastened to several of the twigs among which it is placed. Its walls are about half an inch in thickness. The material of which the nest is composed, is well quilted together and makes a compact and solid structure. Externally the

* Bull. Nutt. Ornith. Club, VII, p. 77.

† Bull. No. 2, Ridgway Ornithological Club; April, 1887, pp. 56-57.

nest is composed principally of hemp-like vegetable fiber mixed with small curled-up leaves of the white sage, *Eurotia lanata*, plant-down, and fragments of spiders' webs. Inside the nest is lined with the same hemp-like fiber, only much finer, and a few feathers. The cavity of the nest is cup-shaped and rather deep. Externally the nest measures $2\frac{1}{2}$ inches in diameter by $3\frac{1}{4}$ inches in depth. The inner diameter is $1\frac{1}{2}$ inches by $1\frac{3}{4}$ inches in depth. Compared with a nest of *Polioptila plumbea* BAIRD, now before me, from Arizona Territory, it seems much better constructed and also somewhat larger.

"I took three nests of the latter species near Tucson, Arizona, during the months of May and June, 1872. Two of these were placed in bunches of mistletoe, probably *Phoredendron flavescens*, growing on mesquite trees from twelve to twenty feet from the ground; and one of them is described in the 'History of North American Birds,' by Baird, Brewer, and Ridgway, Volume III, page 502. The third nest was placed in a crotch of a cholla cactus.

"The ground-color of the eggs of the *Polioptila californica* BREWSTER is bright light green, much more pronounced than in the eggs of either *P. cerulea* and *P. plumbea*, now before me. They are covered with minute spots of a brownish-red color distributed irregularly over the entire surface of the egg, but nowhere so thick as to hide the ground-color. These eggs measure .50 x .45, .58 x .45, .57 x .45, and .57 x .44 inch."*

754. *Myadestes townsendii* (AUD.) [25.]

Townsend's Solitaire.

Hab. Western United States, from the Plains to the Pacific.

So far as I am aware, Mr. Wilbur F. Lamb took the first known eggs of Townsend's Fly-catching Thrush. This was in Summit county, Colorado, July, 1876, at an altitude of about ten thousand feet. The nest was placed in the upper bank of a miner's ditch near Blue River; it was partly concealed by overhanging roots, yet rendered conspicuous by the loose, swaying material of which it was composed. Mr. T. M. Trippe found a nest of this species in San Juan county, Colorado, July 9, at an altitude of 10500 feet; it was built in a little cranny in a bank, and contained four eggs in which incubation had just begun. Dr. Coues describes a nest taken by Mr. Wm. G. Smith, of Buffalo Creek, Jefferson county, Colorado. This was found June 18, 1883, and was built in the end of a hollow fallen log; it was about three feet off the ground and about one foot from the end of the log. The foundation of the nest was a great quantity of trash, bits of sticks, etc., the nest proper being constructed chiefly of pine needles, grasses, and disinte-

grated weed-stalks — the whole, loose and slovenly, could hardly be handled without coming apart.

Mr. Walter E. Bryant describes the location of three nests taken by Mr. L. Belding, at Big Trees, California, in various years, in June. They were placed on the ground in a slight depression, and concealment was attempted by the aid of weeds, a stone, or a large piece of bark. One nest was built on the ground, within the semi-circular cavity of a standing tree. The nests were composed mostly of pine needles. Mr. Norris has a set of four eggs of this species, taken near Hancock, Colorado, June 19, 1882. The nest was placed on the ground, on the side of a steep bank. The eggs are whitish, speckled and spotted with hazel, thickest at the larger end, where they are almost confluent; sizes, .94 x .68, .93 x .68, .94 x .68, .98 x .65. Mr. Lamb describes the eggs which he obtained as resembling those of the Shrikes, and gives the sizes of three specimens preserved out of the set of four as 1.01 x .66, .94 x .68, .88 x .66. The usual number laid is four, with an average size of .93 x .67.

755. *Turdus mustelinus* GMEL. [1.]

Wood Thrush.

Hab. Eastern United States, in summer north to Southern Michigan, Ontario, Massachusetts, etc.; south in winter to Northern Central America and Cuba.

A common bird in the woodland of Eastern United States and as far West as Eastern Kansas, where Col. Goss gives it as an abundant summer resident. Its favorite resorts are low, damp woods and thickets, where it spends much of its time on the ground scratching among the leaves. The bird has a sweet song, which it sings from the higher branches of trees, generally towards the close of summer afternoons. The nest is usually saddled upon the horizontal limbs of saplings and low trees, six to ten feet from the ground; on the outside it is composed of leaves, grasses and stems of weeds, which are gathered when wet, and become solid and firm; and between these are tracings of mud; the lining is of small fibrous roots. The breeding season is in May. Usually four eggs are laid, often only three. Their color is a plain greenish-blue, and their average size is 1.02 x .74, with considerable variation.

756. *Turdus fuscescens* STEPH. [2.]

Wilson's Thrush.

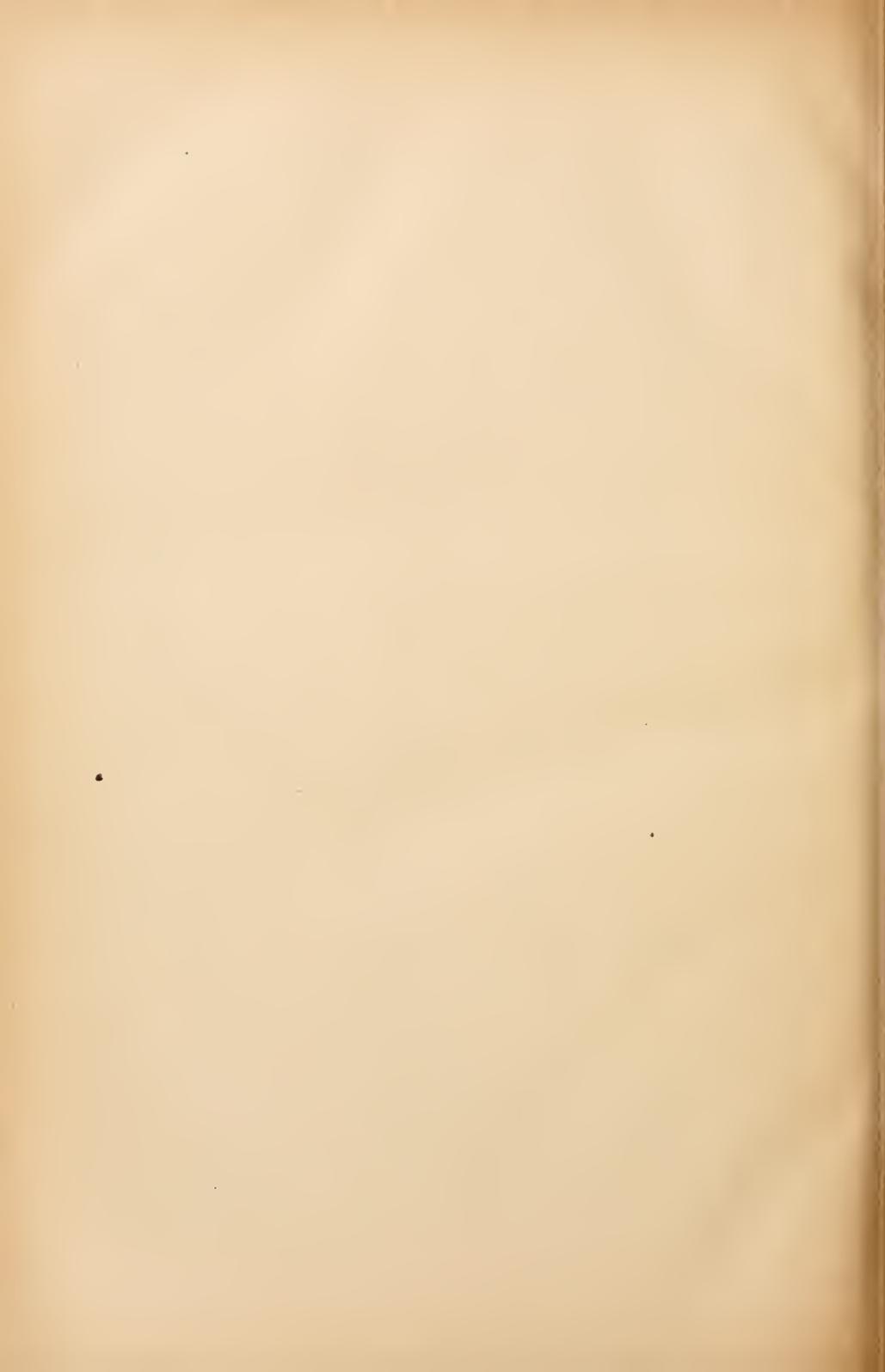
Hab. Eastern United States and British Provinces to the Plains, north to Manitoba, Ontario, Anticosti, and Newfoundland.

Wilson's, the Tawny Thrush, or Veery, is an abundant species in the wooded regions of Eastern United States. It is rather partial to low, wet woods. Breeds from about latitude 40° north to Manitoba, Ontario, Anticosti, and Newfoundland. It has been considered a



NEST OF CALIFORNIA BUSH-TIT.

(*Psaltriparus minimus californicus*.)



doubtful breeding bird in Central Ohio, has lately proven to be quite common during the summer months. I took a nest May 27, 1885, in the characteristic position—at the base of a sapling in swampy woods. The nest is of the usual type, composed of leaves, strips of grapevine bark, weed stems, and lined with black rootlets. This nest contained three eggs of its owner and one of the Cowbird.

An illustration of a Wilson's Thrush's nest appears in Jones' magnificent work, "Nests and Eggs of Birds of Ohio," which was taken May 21, 1884. Dr. Jones took another nest which was placed at the base of the leaf of the skunk-cabbage plant, eighteen inches from the ground, at the edge of swampy woods. Nests of this bird have been found in hollow trunks of trees, fifteen feet from the ground, and in old tin cans lying on the ground in the woods. The eggs are four or five in number, and are plain, pale greenish-blue; average size, .87 x .64.

756a. *Turdus fuscescens salicicolus* (RIDGW.)

Willow Thrush.

Hab. Rocky Mountain region of the United States, east casually during the migration to Dakota, Minnesota, Illinois, etc.

The Willow Tawny Thrush inhabits the lower willowy portions of the Rocky Mountain region in United States. Habits, nests and eggs are similar to those of Wilson's Thrush. Eggs, .85 x .66.

757. *Turdus aliciae* BAIRD [3.]

Gray-checked Thrush.

Hab. Eastern North America, west to the Great Plains, Alaska, Eastern Siberia north to the Arctic coast. In winter south to Costa Rica.

The Gray-checked Thrush breeds from Labrador and Hudson Bay north to the Arctic coast and the coast of Bering Sea. It has been found breeding abundantly in the Mackenzie River region and on the Anderson River. The nests were found, with all but few exceptions, on the branches of low trees, from two to seven feet from the ground. In a few exceptional cases they were built on the ground. They are usually compact, and composed of an elaborate interweaving of fine sedges, leaves, stems, dry grasses, strips of fine bark and lined with fine grasses. Occasionally nests are found constructed with mud, like those of the common Robin.

The eggs are usually four in number, and are greenish-blue, marked with spots of russet and yellowish-brown. Capt. B. F. Goss has two eggs of this species, taken by Mr. R. R. MacFarlane, at Fort Anderson, Arctic America. The nest from which these were taken was placed in a low tree. The eggs are greenish-blue, faintly marked over the entire surface with reddish-brown. Their sizes are .91 x .71, .91 x .72.

757a. *Turdus aliciae bicknelli* (RIDGW.) [3, *part.*]**Bicknell's Thrush.**

Hab. In summer, higher mountains of Northeastern United States (Catskills, White Mountains, etc.), and Nova Scotia. Winter home unknown.

This Thrush, recently identified in the Catskill and White Mountains, and named in honor of its discoverer, Mr. Eugene P. Bicknell, was found breeding by the Rev. J. H. Langille, on Mud and Seal Islands, out at sea off the coast of Nova Scotia and westward from the city of Yarmouth. These are almost entirely covered with a low growth of evergreens—black spruce and balsam fir. Except the Robin, Song Sparrow, Snowbird, a few Redstarts and Winter Wrens, almost the only small land-birds breeding here are the Black-poll Warbler and Bicknell's Thrush—the last two being very abundant. Mr. Langille says that its song is similar in tone to that of Wilson's Thrush, but more slender and wiry, and therefore not nearly so grand and musical. The birds were found nesting in the almost impenetrable evergreen thickets, beneath which there is a dense carpet of moss. The nests were all nearly alike in location, structure and materials; placed a few feet from the ground, against the trunk of an evergreen tree. They were composed of various kinds of mosses, a few fine sticks, weed-stems and rootlets, and were lined with fine bleached grasses. The nest on the outside was as green as a bunch of fresh moss. The eggs were of a light bluish-green speckled with brown; size, .87 x .63.*

758. *Turdus ustulatus* (NUTT.) [4.]**Russet-backed Thrush.**

Hab. Pacific coast region, north to Sitka; south, in winter, through Western Mexico, to Northern Central America.

The Russet-backed Thrush is a common species in suitable localities along the Pacific coast of California and northward. Mr. A. W. Anthony states that it is not an uncommon summer resident of Washington county, Oregon. The bird frequents the deepest thickets, and when disturbed utters an alarm note like that of the Brown Thrasher, *chuck, chuck*. It is also a fine songster, and may be heard at dusk and early morning. The nest is built in thickets or bushes, a few feet above the ground. It is composed of twigs, grasses, roots and leaves, and in some cases mosses are used. A set of four eggs taken near San Jose, California, May 18, 1885, gives the following dimensions: .92 x .65, .95 x .66, .97 x .68, .97 x .68. They are greenish-blue spotted with yellowish-brown, chiefly about the larger end. The average size of ten specimens is .94 x .65.

* Our Birds in their Haunts: A Popular Treatise on the Birds of Eastern North America By Rev. Hibbert Langille, M. A. Boston: S. E. Cassino & Co. 1884. Pp. 511-513.

758a. *Turdus ustulatus swainsonii* (CAB.) [4a.]**Olive-backed Thrush.**

Hab. Eastern North America, west to and including Rocky Mountains, and as far as East Humboldt ranges and the Upper Columbia. Breeds chiefly north of the United States, wintering from the Gulf States and Mississippi Valley southward to Northern South America.

The Olive-backed Thrush breeds chiefly north of the United States. It is given as a common breeding bird in the Wahsatch Mountains, Utah. Mr. Kennicot found it nesting in the Arctic regions, frequently placing the nest not more than two feet from the ground. In his Catalogue of the Birds of New Brunswick,* Mr. M. Chamberlain gives it as a summer resident, breeding in abundance. Breeds abundantly in Nova Scotia. In some parts of Maine and New Hampshire it is the commonest Thrush, except the Robin, during the breeding season.† Mr. Frank H. Lattin has for two successive years found nests and eggs of the Olive-backed Thrush at Gaines, Orleans county, New York, within a short distance of his residence. Dr. Morris Gibbs has taken its nest and eggs in Kalamazoo county, Michigan. It may be found breeding in Northern Ohio. This species, like the Hermit Thrush, frequents retired woodland, but its mode of nesting (except the structure of the nest), as well as its eggs, are quite different.

The nest is built in a bush or small forest tree, a few feet from the ground—usually from five to eight feet. It is composed of a mass of leaves, twigs, shreds of bark, and, in the Arctic regions, moss is one of the principal substances which enter into its composition. The nests average about four inches in diameter by two in height, the cavity being three wide by one and a half deep. The eggs are usually deposited in the first part of June, these being three or four in number, of greenish-blue (some much duller than others), speckled with reddish-brown and other tints. Their average size is .92 x .66.

759. *Turdus aonalaschkæ* GMEI. [5]**Dwarf Hermit Thrush.**

Hab. Pacific coast region, breeding from California northward; south in winter to Lower California and Western Mexico; during the migrations east to Nevada and Arizona.

The Dwarf Hermit Thrush breeds from the mountains of California northward as far as Kadiak. Very few of the eggs of this species appear in the numerous collections, and from the meagre accounts we have concerning them, they must be considered rare. Mr. Chas. N. Comstock, of Oakland, California, found a nest of this species containing two eggs, in June, 1883, while on a collecting trip to the Calaveras group of big trees. The nest was placed in a bush about

* Birds of New Brunswick. Bulletin of the Natural History Society of New Brunswick. No. 1. Published by the Society. Saint John, N. B., 1882. Pp. 29-68.

† New England Bird Life, Part I, p. 58.

two feet from the ground. The eggs are described by Mr. Comstock as being a little lighter than a Robin's, and all one color.* The sizes of these two specimens are 21 x 16 mm., 21.5 x 16.5 mm.†

759a. *Turdus aonalaschkæ auduboni* (BAIRD.) [5a.]

Audubon's Hermit Thrush.

Hab. Rocky Mountain region of the United States, south to Northern Central America.

Known as the Rocky Mountain Hermit Thrush from the region which it inhabits. In some parts of Colorado it is very common. Mr. Frank M. Drew states that it is common and breeds in San Juan county, Colorado. Its clear, sweet notes can be heard from nearly every dark glen or secluded part of the woods. A nest was found in the latter part of June, placed in a spruce bush, about three feet from the ground. It contained three eggs. Mr. Chas. F. Morrison records this bird as tolerably common in La Plata county, Colorado. The nest he says is generally, if not always, placed in bushes where the undergrowth is thick and heavy. The bird prefers hillsides near sluggish water, as old beaver dams and swamps, nesting in their vicinity, and breeding before the last of May or first of June, and later at a higher altitude. The nest is composed of twigs, straws, rootlets, coarse grass and moss; it is often compact, with thick walls. The average diameter is about five inches, with a cavity two and a half by two deep. The eggs are usually four, and of a plain greenish-blue. A set of four in my cabinet, taken at Canon City, Colorado, July 4, 1885, offers the following sizes: .85 x .65, .84 x .66, .88 x .66, .86 x .64.

759b. *Turdus aonalaschkæ pallasii* (CAB.) [5b.]

Hermit Thrush.

Hab. Eastern North America, breeding from the Northern United States northward, wintering from about latitude 40° to the Gulf coast.

The Hermit Thrush or "Ground Swamp Robin," breeds from the Northern United States northward. It is common in the northern portions of New England in summer, and in Maine, where it is abundant, it begins to breed during the last week of May. It is common in Nova Scotia and in New Brunswick, and begins to build about the middle of May. Dr. Frank W. Langdon states on the authority of Mr. Chas. Dury, that the nest and eggs of the Hermit Thrush have been taken near Cincinnati, Ohio, May 10, 1877. The bird probably breeds in Northern Ohio and other parts of the State. It has been observed nesting in Michigan, a nest being recorded by Dr. Morris Gibbs as taken by W. A. Gunn in Montclair county, May 15, 1879.

Nuttall says that the song of the Hermit Thrush "seems to be un-

* Young Oologist, I, p. 149.

† .63 x .63, .85 x .65 inches.

usually lively and varied, warbling almost like the Yellow Bird, and then chanting like the Robin." This charming writer, in speaking of the marshy places which this bird inhabits, beautifully says: "In these almost Stygian regions which, besides being cool, abound probably with its favorite insect food, we are nearly sure to meet our sweetly vocal hermit flitting through the settled gloom, which the brightest rays of noon scarcely illumine with more than twilight."*

The nest, like that of Wilson's Thrush, is built on the ground or very near it, in some low, secluded spot, generally beneath the shelter of dense shrubbery. It is rather bulky, and loosely made of leaves, shreds of bark, grasses, mosses, and lined with similar but finer material. The eggs are usually four, often only three, of greenish-blue, unspotted, and average .86 x .65.

[760.] *Turdus iliacus* LINN. [6]

Red-winged Thrush.

Hab. Northern portions of Europe and Asia: accidental in Greenland.

The Red-winged Thrush of Europe claims a place in the avifauna of North America from its accidental occurrence in Greenland. During the breeding season it is found in the more northern portions of Europe, only occasionally breeding as far south as England. Breeds in the wooded districts of Norway and Sweden. It has been found nesting in the Faroe Islands, Iceland and Northern Russia. In the winter the Redwing extends its migrations to the more southern portions of Europe — Sicily, Malta, and even Smyrna. The nest of this species is usually placed in the center of a thorn bush or small tree, and is made of moss, roots, and dry grasses outwardly, cemented together with clay, and lined inwardly with finer grass. The external diameter averages about five inches by three deep; the cavity is three in diameter by about two deep. The eggs range from four to six in number, pale bluish-green or olive-greenish, speckled and spotted with reddish-brown. Their average size is 1.04 x .75.

761. *Merula migratoria* (LINN.) [7]

American Robin.

Hab. Eastern and Northern North America (Hudson Bay region to Alaska); west to the Great Plains, of occasional occurrence in Eastern Mexico.

During the summer months this familiar bird has an extensive range, breeding as it does from near the southern border of the United States northward to the Arctic coast. The nest is saddled on a horizontal branch or built in the crotch of trees of almost any kind, and it is commonly placed on the top rail of a fence, often on stumps, and, in

* A Manual of the Ornithology of the United States and Canada. By Thomas Nuttall, A.M., F.L.S., &c. Second Edition, with Additions. The Land Birds. Boston: Hilliard, Gray & Co. 1840. P. 394.

fact, in all sorts of curious places, even in bird boxes. Orchards and the shade trees along streets are favorite nesting-sites. The nest is a large, coarse structure, made of twigs, roots, stems, grasses, dry leaves, hair and wool. It is strengthened by a neatly-made cup of clay or mud, which is surrounded by these materials. The typical set of eggs is four, rarely five. They are greenish-blue, unspotted. Very rarely, however, speckled with brown. Average size, 1.16 x .80.

761a *Merula migratoria propinqua* RIDGW. [7a.]

Western Robin.

Hab. Western United States, east to and including Rocky Mountains, south into Mexico.

The general habits, nesting and eggs of this Western form of the Robin are like those of the Eastern species. Mr. Walter E. Bryant notes a pair of these birds that built and reared a brood in a hanging basket suspended from the edge of a veranda at the residence of Mr. H. G. Parker at Carson, Nevada.

763. *Hesperocichla nœvia* (GMEL.) [9]

Varied Thrush.

Hab. Western North America, chiefly near the Pacific coast, from California to Behring Strait. Breeds chiefly north of the United States; east casually to New Jersey, Long Island and Massachusetts.

In various parts of Alaska this is a common breeding bird. A few are known to breed in the spruce forests of Washington Territory, but their breeding grounds are chiefly north of the United States. According to Dr. Brewer, Mr. W. H. Dall furnished the first authentic knowledge concerning the nest and eggs of the Varied Robin as he found them in Alaska. The nest found by him was built in a willow bush, about two feet from the ground, and upon the top of a large mass of rubbish lodged there by some previous inundation. It measures six inches in diameter with a depth of two and one-half inches. It has but a very slight depression, apparently not more than half an inch in depth. The original shape of the nest had, however, been somewhat flattened in transportation. The materials of which it was composed were fine dry mosses and lichens impacted together, intermingled with fragments of dry stems of grasses. Other nests of the same species were met with in several places between Fort Yukon and Nulato, always on or near a river bank and in low secluded localities.

A nest of this thrush obtained by Dr. Minor, in Alaska, is a much more finished structure. Its base and periphery are composed of an elaborate basket-work of slender twigs. Within these is an inner nest consisting of an interweaving of fine dry grasses and long gray lichens. The eggs are described as pale greenish-blue, sparingly but distinctly sprinkled and spotted with dark umber-brown, size 1.13 x .80.

[764.] *Cyanecula suecica* (LYNN) [20.]**Red-spotted Bluethroat.**

Hab. Northern Europe and Asia; casual in Alaska.

This beautiful and interesting bird, known as the Blue-throated Redstart, is widely distributed in the Old World, breeding in the more northern portions—Norway, Sweden, Russia and Siberia. The nest is placed on the ground, midst the larger herbage, in the cavities of banks and under low brushwood, usually well concealed. It is composed of dry grass, moss, withered leaves, roots, and is lined with finer mosses, hair and the down of cotton-grass. The eggs are four to six in number, generally a greenish-blue, but varying to grayish-green or olive; they are spotted with reddish-brown, which is usually thickest and deeper at the larger end. The average size is .75 x .53.

765. *Saxicola œnanthe* (LINN.) [21.]**Wheatear.**

Hab. Europe, Northern Africa, Asia, Greenland and Labrador, straggling south to Nova Scotia, Maine, Long Island and the Bermudas.

The well known Wheatear of the Old World is common in Greenland and probably also breeds in Labrador. Dr. C. Hart Merriam makes note of its probable breeding on the north shore of the Gulf of St. Lawrence—at Godbout. A female was shot by Mr. Napoleon A. Comeau, June 9, 1885, in which the eggs were pretty well developed. Its mate was also seen and it is presumed that the birds would, in all probability, have bred in the vicinity.* The Wheatear breeds throughout the British Islands, and in all of Northern Europe and Asia. In the British Islands it begins to make its nest in May. This is usually well hidden in the innermost recess of some crevice among rocks, in an old wall, stone-quarry, gravel-pit, and frequently in a deserted rabbit burrow. Mr. Hewitson has known a pair to make their nest in the deserted hole of the Sand Martin in a river bank. The nest is rudely constructed of grass, moss, hair, wool, rabbits' fur, or any rubbish obtainable. The eggs usually range from four to six in number and are of a pale, plain greenish-blue. A set of four eggs collected near Larne, Ireland, May 30, 1882, is in my collection. Their sizes are .88 x .60, .88 x .59, .94 x .60, .99 x .61.

766. *Sialia sialis* (LINN.) [22.]**Bluebird.**

Hab. Eastern United States, north to Nova Scotia, Ontario, Manitoba, etc., west to the Rocky Mountains. Resident in the Bermudas.

There is not a song of an American bird which so strongly accents the return of spring as does the subdued melody of the Bluebird. To the naturalist or to the lover of rural walks, the song of this bird is

* The Auk, II, 305.

suggestive of spring even in dreary December. His fearless confidence in man, his pleasing manners and sociable disposition, win our regard at once. One having no suspicion of his presence is often surprised in the midst of woods, when watching some other species, to see a Bluebird quietly perched upon some naked bough inquisitively scanning his proceedings.

The Bluebird is cherished in the hearts of all who know him, and is hailed by the young and the old as he comes to us on the first sunny day of the new year with his plaintive, lisping notes which foretell of the spring, with its verdant fields and balmy air. But the brightness of the day is often suddenly overcast with dark clouds, the snow begins to fall, and far up in the fleecy air is heard his sad warbling as he is winging his way through the blinding storm, seeking shelter behind the scenes to await Nature, his timely prompter, to call him forth again in a more favorable season.

Prose writers have vied with each other in depicting the gentleness of his manners, and poets have tuned their harps of varied strings to tell the secret of his charms. As the pioneers cleared the forests centuries ago, the sound of the axe was oftentimes hushed while they stood and marveled at the music of his song, and gazed with wonder upon his back of blue and breast of red. In the early spring, little children loitering by the road-side clap their hands with glee as they hear the merry caroling of the Bluebird, and his notes bring back to the aged and gray, thoughts of the happiest hours of their lives, or recall the days when the shadows of misfortune seemed to reach far into the future. Such are the memories which the Bluebird has long awakened in the hearts of those who love the true and the beautiful, and who do not attempt to hide the sentiments which nature has bestowed on all rational beings.

Throughout the summer and fall months the Bluebird delights in frequenting open pasture fields, where it may often be seen perched upon tall weeds or bushes, now and then darting out to catch a passing insect, or, quickly descending to the ground, it will pick up a worm which has made its appearance, or a small beetle that has chanced to come from its hiding place. Whole families may be observed thus engaged. When the young are able to fly, the male usually takes them in charge, while the female starts a second brood, and sometimes a third is reared in a like manner.

It loves to sit on the naked branches of tall, leafless trees, or on the topmost boughs of orchard trees, in whose hollows it often builds its nest and rears its young. On these heights the male will some-

times sit for hours and warble his soft, agreeable song, with open, quivering wings. Here too, proudly stationed, he surveys the surrounding territory and awaits any intruder that may approach, whose presence he resents, and whom he assails with astonishing vigor.

Dr. J. G. Cooper has aptly said that the Bluebird always bears the National colors, red, white and blue, and that it is one of the most strikingly peculiar of American singing birds, and in its habits a model of civilized bird life. Its natural nesting places are in the deserted excavations of Woodpeckers, hollows of trees, and even in the crevices of rocky cliffs. With the progress of civilization the Bluebird has taken advantage of modern surroundings, adopting the boxes that are put up for its use, nesting also in every conceivable nook and corner in houses and barns. Very frequently letter boxes upon fences are taken possession of. I found a Bluebird's nest in the interior of a wheel of a railroad car during the strike a few years since, and on another occasion, in Morrow county, Ohio, I discovered a brood of young Bluebirds in a Cliff Swallow's nest under the eaves of an old barn.

The normal color of the eggs of the Bluebird is uniform pale blue, unspotted. They are four, five, and sometimes six in number, and their average size is .84 x .62. The eggs of this bird are frequently very light bluish-white, and rarely pure white. All found in one nest are of one tint; that is to say, a white egg is never found in a set with the blue ones. Mr. Norris has several sets which are as white as those laid by Woodpeckers. The Azure Bluebird (*Sialia sialis azurea* Swains) inhabits Southern Arizona and Eastern Mexico.

767. *Sialia mexicana* SWAINS. [23.]

Western Bluebird.

Hab. Western United States, from the Rocky Mountains to the Pacific, south to Southern Mexico.

An inhabitant of Western United States north to British Columbia. Its habits are exactly similar to those of the Eastern Bluebird. It nests in holes and cavities of decayed trees, between their trunks and the loose bark, making the nest of sticks, grasses, straws, and almost any rubbish procurable. Mr. Walter E. Bryant states that Dr. Cooper informs him that he has known a Bluebird to build in a Cliff Swallow's nest. The eggs of this species are four or five in number, uniform pale blue, of a slightly deeper shade than those of the preceding species, and average .81 x .62.

768. *Sialia arctica* (SWAINS.) [24.]

Mountain Bluebird.

Hab. Rocky Mountain region, north to Great Slave Lake, south to Mexico, west to the higher mountain ranges along the Pacific.

Known as the Rocky Mountain and Arctic Bluebird. It is very

common in the Rocky Mountain region and is also abundant as far west as the mountain ranges along the Pacific. Breeds in deserted Woodpecker holes, natural cavities of trees, etc. In settled portions of the West it nests in the cornice of buildings, under the eaves of porches, in the nooks and corners of barns and out-houses, and in boxes provided for its accommodation. Mr. Walter E. Bryant says that three incubated eggs of this species were taken from the nest of a Barn Swallow, at Lake Tahoe, California, by Mr. Walter Bliss. Prof. Ridgway found the Rocky Mountain Bluebird breeding in Virginia City, Nevada, in June. Its nests were built about old buildings and occasionally in the unused excavations about mines. Mr. Wilbur F. Lamb informs me that in Summit county, Colorado, he found this species nesting generally in old Woodpeckers' excavations. One nest was found placed under the projecting roof-pales of a miner's cabin. The nests were composed almost entirely of dry grass. In some sections, however, the inner bark of the cedar enters largely into their composition.

In most cases Mr. Lamb found the nests to contain five eggs, though seven perfectly fresh eggs were taken from one nest, while another contained only three in an advanced stage of incubation. So that taking the reports of other collectors into consideration with Mr. Lamb's experience, the bird lays from three to seven eggs, rarely the latter number, and more commonly five. They are pale, plain greenish-blue and average .85 x .63.

APPENDIX.

42. 1. *Larus barrovianus* RIDGW.
Point Barrow Gull.

Page 23.

4. 1. *Diomedea exulans* LINN.
Wandering Albatross.

Page 41. This species has been added to the 'Hypothetical List' of the A. O. U. Check List upon unsatisfactory evidence of its occurrence in the localities stated in the habitat.

106. 1. *Oceanodroma macrodactyla* (BRYANT.)
Guadalupe Petrel.

Hab. Guadalupe Islands, Lower California.

See reference to this Petrel as observed by Mr. Bryant on Guadalupe Island, under head of Leach's Petrel, page 48, and foot-note, page 49.

- 114 1. *Sula gossi* RIDGW.
Blue-footed Booby.

Hab. Islands in the Gulf of California, south to the Galapagos.

Between the 15th and 28th of March, 1888, Col. N. S. Goss found this new species breeding on the San Pedro Martir Isle, situated in the Gulf of California about midway between the shores. It is a rock about one and a half miles long, nearly as broad, and about 1045 feet in height, a little north of latitude 28°. Colonel Goss states that the birds make no nests and lay but one egg; this they drop upon the smooth rock, often in exposed situations, preferring the places where the guano has been removed and, in many cases, close beside the winding paths that were hourly trodden. No young birds were found, and from the condition of the many eggs examined, he was of the opinion that the birds do not commence laying before the first of March. The average measurement of twenty-one eggs is given as 2.42 x 1.60. The ground color is greenish-blue, coated with a dull white chalky substance, but generally more or less stained with guano that generally gives them a dirty buff white look; in form elliptical ovate*. A specimen of the egg of this species in the collection of Capt. B. F. Goss measures 2.34 x 1.60.

*The Auk, V, p. 242.

115.1 *Sula brewsteri* Goss**Brewster's Booby.**

Hab. Islands of the Eastern South Pacific Ocean, northward to Lower California.

This is another new species of Booby which was found breeding by Colonel Goss on San Pedro Martir Isle in the Gulf of California. The birds were not wild, but their nesting places, as a whole, were not in as exposed situations as those of the Blue-footed; they seemed to prefer the shelves and niches on the sides of the rocks. They lay two eggs, and in all cases collect a few sticks, sea-weed, and often old wing and tail feathers; these are generally placed in a circle to fit the body, with a view, it was thought, to keep the eggs that lie upon the rock from rolling out. There is but little material on or about the isle out of which a nest can be made. Colonel Goss says the birds must commence laying as early as the 10th of February, as young were found in many cases from half to two-thirds grown. The average measurement of seventeen eggs is given as 2.44 x 1.60. In color and form, as well as size, they are similar to the eggs of the Blue-footed, in fact so nearly alike that when placed together they cannot be separated with certainty. A set of two is in Captain Goss' cabinet. These measure 2.40 x 1.70, 2.30 x 1.62 respectively.

159. *Somateria mollissima borealis* (A. E. BREHM.)**Northern Eider.**

Page 74.

169.1 *Chen caerulescens* (LINN.) [590.]**Blue Goose.**

This species has been restored from the 'Hypothetical List' of the A. O. U. Check List—see text of Lesser Snow Goose, page 78.

182 *Phoenicopterus ruber* LINN [585.]**American Flamingo.**

Mr. D. P. Ingraham, who has collected a large number of these handsome birds in the West Indies and spent more or less of his time for four seasons among them, has given me the following interesting notes concerning their nesting:

He states that the birds inhabit the shallow lagoons and bays having soft clayey bottoms. On the border of these the nest is made by working the clay up into a mound which, in the first season is perhaps not more than a foot high and about eight inches in diameter at the top and fifteen inches at the base. If the birds are unmolested they will return to the same nesting place from year to year, each season augmenting the nest by the addition of mud on the top, leaving a slight depression for the eggs. Mr. Ingraham speaks of visiting the

breeding grounds where the birds had nested the previous year and their mound-like nests were still standing. The birds nest in June. The number of eggs to a clutch is usually two, sometimes only one and very rarely three. When three are found in a nest it is generally believed that the third has been laid by another female. According to Mr. Ingraham's observations the nests in our illustration must be considered conventional, the attitude of the bird on the nest being correct, and as stated on page 86.

[288] *Jacana gymnostoma* (WAGL.)

Page 136. This now becomes *Jacana spinosa* (Linn.).

[358.1.] *Falco regulus* PALL.

Merlin.

Hab. Europe, etc., accidental in Greenland.

Mr. Ludvig Kunlien, of the Public Museum, Milwaukee, Wisconsin, received from Dr. C. F. Wiepken, of Oldenburg, Germany, a fine specimen of this bird, which was shot at Cape Farewell, Greenland, May 3, 1875, making an additional species to the avifauna of North America. It is a common bird in Europe, especially in the more northern portions. In England it is considered migratory, while in Scotland it resides permanently. It breeds commonly in the Orkney and Shetland Islands, placing its nest among precipitous rocks. It was formerly trained to the chase, and used to hawk for quails, snipes and larks. The rugged mountain ranges on the Scottish border furnish many breeding places for the Merlin. The site generally selected is the side of some ravine, a projecting rock, bank, or tuft of heath. The nest consists of a scanty supply of sticks, heather, grass or moss, loosely arranged. The eggs are three, four or five in number; Bewick says six; Temminck, five or six. They are bluish-white, spotted and blotched, generally more thickly at the larger end, with deep reddish-brown. Average size, 1.49 x 1.20.

[359.1] *Falco tinnunculus* LINN. [422]

Kestrel.

Hab. Europe, etc., accidental in Massachusetts.

Mr. Charles B. Cory, of Boston, Massachusetts, makes record of the first occurrence of this bird in North America. A female specimen was shot by a hunter at Strawberry Hill, Nantasket Beach, Massachusetts, on September 29, 1887, the skin of which is now in Mr. Cory's cabinet.* The European Kestrel thus finds a place in the avifauna of North America. It is a common species in Europe, and one of the most abundant of its tribe in Great Britain. It resembles the American Sparrow Hawk in

*Auk, V. 110 and 205.

size and general appearance, and, like that bird, it has the curious habit of poisoning in midair over a mouse, lizard, frog, or some other object of food before attacking them. In Great Britain it is one of the commonest Falcons, and may be found in all parts of the country.

The nest is built in rocky cliffs by the sea coast, in natural cavities of trees, in ancient ruins, in towers of churches, both in the country and cities, even in London. The material used consists of sticks, twigs, hay, wool and feathers, all arranged in a slovenly manner. When the nest is placed in rocks, it is said that no material is used. The eggs, which are rounded-oval in form, are four or five in number, sometimes six. They vary from a reddish to yellowish, speckled, spotted or blotched with orange-brown and reddish-brown. A great variation exists in the style and amount of markings in a large series of eggs. Four eggs collected in Staffordshire, England, May 12, 1884, measure 1.42 x 1.20, 1.48 x 1.24, 1.50 x 1.30, 1.53 x 1.24. A set of five eggs taken from an old church spire in County Antrim, Ireland, May 25, 1883, gives the following measurements: 1.58 x 1.30, 1.56 x 1.26, 1.54 x 1.28, 1.56 x 1.26, 1.54 x 1.24.

370. *Ulula cinerea* (GMEL.)

Page 194. This becomes *Scotiapteryx cinerea* (Gmel.)

372. *Nyctala acadica* (GMEL.) [401.]

Saw-whet Owl.

The Acadian Owl is said to be not an uncommon resident in Northern Ohio, a resident or winter visitor in the southern portions of the State. Up to the present time, however, there seems to have been no positive knowledge regarding its breeding within this area, and, judging from the following records, the bird cannot be considered a common species in the State. Dr. Brewer's statement, "it has been said to breed near Cleveland, Ohio, and its nest and eggs have been secured," is very unsatisfactory. The bird's small size, its nocturnal and secluded habits, no doubt have much to do with its apparent scarcity. Audubon mentions one which he secured at Cincinnati. Dr. Langdon met two boys on the streets of Cincinnati, October 27, 1886, with a specimen which they had captured in the heart of the city. Mr. Charles Dury records only five specimens taken within fifteen years, one each in the following localities: Avondale, Cincinnati, Cherry Grove, Butler County, and St. Mary's Reservoir. Mr. H. E. Chubb shot a specimen near Cleveland on July 11, 1883, and on June 21 of the present year (1889) another specimen was brought him. Both were young birds of the year, proving beyond doubt that the bird breeds

in Northern Ohio. Mr. Chubb states that the species is not uncommon in the colder months of the year. The late Dr. Wheaton, in his "Report on the Birds of Ohio," records the capture of three specimens in Franklin County. The first specimen of this Owl which came into my hands was shot by Mr. F. N. Wilcox, in November, 1883.

On May 28, 1889, my friend, J. E. Gould, shot two young birds of this species in a woods near Worthington, Ohio,—about five miles north of Columbus. These had just left the nest. About a mile and a half distant, in an entirely different strip of woods, another specimen was observed the same day. On June 2, returning to the place where he had taken the two young, three more were observed, sitting in the branches of the same sapling from which the two were shot on May 28. One of these was secured with a stick, the other two were allowed to remain. These were doubtless a brood of five, and the one observed in another woods making six in all. There is little doubt that the three young observed on June 2 were not strong enough to leave the nest when Mr. Gould visited the place on May 28. A dead mouse was observed hanging in a crotch of the sapling where the Owls were perched, which was doubtless placed there by one of the parent birds. Two of these specimens, kindly presented to me by Mr. Gould, are in my collection; the third is in his possession. That the Acadian Owl breeds in Central Ohio there is now no longer any doubt, and the securing of its eggs is only a question of time.

379a. *Glaucidium gnoma californicum* (SCL.) [409, *part.*]

California Pygmy Owl.

Description under Pygmy Owl, *Glaucidium gnoma* Wagl. page 202.

380. *Glaucidium phalænoides* (DAUD.) [410]

Ferruginous Pygmy Owl.

Hab. Tropical America (except West Indies) north to Southern border of United States (Texas to Arizona.)

Mr. Geo. B. Sennett gives the first description of the egg of this species, which is as follows: "On May 2, 1888, my collector took an adult female and one egg of this Owl at Canon del Caballeros, near Victoria, Tamaulipas, Mexico. The locality is high and at the base of the more precipitous mountains. The nest was in a hollow tree and contained but a single fresh egg. The egg is white, shaped like that of a *Megascops*, measuring 1.05 x .90 inches, and is in my collection with the parent bird. It will be observed that in size it is very close to the egg of *M. whitneyi*."*

*Auk, VI, 70.

381. *Micrathene whitneyi* (COOPER.)

Page 203. This becomes *Micropallas whitneyi* (Cooper.)

387a. *Coccyzus americanus occidentalis* RIDGW [387, *part.*]**California Cuckoo.**

Page 207.

396. *Dryobates scalaris* (WAGL.)

Page 212. This becomes *Dryobates scalaris bairdi* (Scl.)

419 *Nyctidromus albicollis* (GM.)**Parauque.**

Page 227. This becomes *Nyctidromus albicollis merrulli* (Senn.)

Merrill's Parauque.

Mr. Sennett says that when compared with others of the species from Southern Costa Rica, Panama, Guiana, and Brazil this form can be distinguished, first by the prevailing gray color on upper parts, where the others have brown or rufous-cinnamon; second, by its large size, etc, etc, (see Auk Vol. V, pages 44-45.) It is named in honor of Dr. J. C. Merrill U. S. A., who discovered the bird in the United States on April 1, 1876.

486a. *Corvus corax principalis* RIDGW [280, *part.*]**Northern Raven.**

Page 265.

534a. *Plectrophenax nivalis townsendi* RIDGW [186, *part.*]**Prybilof Snowflake.**

Page 295.

553. *Zonotrichia querula* (NUTT.)**Harris's Sparrow.**

Capt. Bendire gives the following interesting account concerning the supposed nest and eggs of this species:

"For the purpose of drawing the attention of ornithologists located along the northern border of Montana and Dakota, and throughout southern British North America, to the fact that the nest of eggs of this interesting species remain still unknown, and to the probability of its breeding in these regions, instead of further north, I will state that none of the large collections of birds, nest and eggs made by the following gentlemen of the Hudson's Bay Company, Robert McFarlane, Strachan Jones, T. McDougall, Donald Gunn, C. P. Gaudet, and J. Lockhart, and which were donated to the Smithsonian Institution at Washington, D. C., contained specimens of this species, although rep-

resenting nearly every other bird to be found breeding throughout the vast interior of the former Hudson's Bay Territory. The explorations made by these gentlemen were thorough and continued through several seasons, and, chiefly through the good efforts of Mr. Robert Kennicott, all their valuable field notes and an immense amount of material were brought together.

“From the fact that no specimens of *Zonotrichia querula* were obtained throughout the explorations, which extended well into the Arctic Circle, and began about the 54th parallel, I necessarily believed that the summer home of Harris's sparrow, if properly looked for, will be found along the foothills of the Bearpaw and Chief Mountains in Montana, along the Turtle Mountains in Dakota, and their centre of abundance probably near Duck Mountain, Manitoba, as well as in suitable localities in the territories of Alberta and Assiniboia, south of Lat. 54°.

“During the summer of 1885, while I was stationed at Fort Custer, Montana, one of my men, who was well posted about the birds of that region, and helped me to collect a good many, while out hunting one day found a nest and four eggs of some Sparrow, without, unfortunately, securing the parent, and brought them in for me. I saw at a glance that these eggs were new to me, and visited the place where the nest was found next day, in the hope of possibly still finding the owners about the locality, but failed in this. The eggs in question differ materially in coloration from those of the other species of *Zonotrichia*, as well as from those of the genera *Passerella*, *Melospiza*, and *Pipilo*, all of which are represented by good series in the National Museum collection.

“The nest was found June 24, 1885, in a dense willow thicket close to the banks of Little Horn River, about one and a half miles above the post. It was placed between several young willow twigs, about eight or ten inches from the ground, compactly built of strips of decayed willow bark, coarse grasses, etc., and lined with finer materials of the same kind. Outwardly the nest was about four and a half inches wide by three deep; the inner cavity was two and a half inches wide by two in depth. In its general make-up it resembled the average nest of a *Passerella*. The eggs contained small embryos. They resemble certain types of Cardinal's eggs (*Cardinalis cardinalis*) more than anything else, but are considerably smaller. There is no trace of green whatever noticeable in their ground color. This green tint is always found to a greater or less extent in all the eggs of the genera *Zonotrichia* and *Passerella*, and with rare exceptions in *Melospiza* as well, while here, it is a creamy or buffy white, and the shell is also

more lustrous. The eggs are thickly spotted and blotched with dark brown and burnt umber, and more or less mixed with pale heliotrope purple and purplish gray. They are ovate in shape, and measure .89 x .70, .88 x .69, .86 x .69 and .85 x .65 inch.

"I am certain that these eggs are not those of the Cardinal, which is not found as far north as Fort Custer and would surely have been noticed by me, if it occurred there, and unless they should be abnormally colored eggs of *Pipilo maculatus arcticus*, which is barely possible, although also rather small for this species, they will certainly prove to be those of Harris's Sparrow. While I do not believe that it is a constant and common summer resident in the vicinity of Fort Custer, it probably breeds there as a straggler; I failed to meet with this species during the summer, but found it not at all uncommon during its fall migration. Specimens shot by me in the early part of October are now in the National Museum collection. I found them associated with White-crowned Sparrows and Arctic Towhees principally, scattered in small flocks through the undergrowth along the Big and Little Horn River bottoms, and it seems to confine itself to the shrubbery found along the streams. Specimens were shot by me as late as October 21, 1885."*

On the 28th of April, 1889, Mr. J. E. Gould shot a specimen of Harris's Sparrow two miles north of Columbus, Ohio. Four or five others were observed feeding in a thicket in company with the White-throated Sparrow, *Z. albicollis*. Mr. Gould generously presented me with the specimen of *Z. querula*, the skin of which is now in my collection. The identification of this specimen, previously considered by the writer to be *Z. querula* was, through the kind assistance of Mr. Chas. F. Batchelder positively determined. This, I believe is the first record of its occurrence in Ohio. The bird in this case has wandered a long way out of its ordinary habitat (see page 304).

563*a*. *Spizella pusilla arenacea* CHADB.

Western Field Sparrow.

Page 309.

567.1 *Junco carolenensis* BREWST. [217, *part.*]

Carolina Junco.

Page 310.

597*a*. *Guiraca cærulea eurhyncha* COUES [246, *part.*]

Western Blue Grosbeak.

Page 332, foot-note.

*Auk, VI, 150-152.

622*b*. *Lanius ludovicianus gambeli* RIDGW [149*a*, *part.*]

California Shrike.

Page 344.

629*c*. *Vireo solitarius alticola* BREWST [141, *part.*]

Mountain Solitary Vireo.

Page 349.

684. *Sylvania mitrata* (GMEL.) [124]

Hooded Warbler.

Since my statement concerning the nesting of the Hooded Warbler in Ohio was printed (page 385), Mr. Gould found it breeding near Sugar Grove, May 29, 1889. A nest was found containing four young. Many of the birds were observed, and some secured. Owing to heavy rains and lack of time, further observation was abandoned.

717*b*. *Catherpes mexicanus punctulatus* RIDGW [59, *part.*]

Dotted Canon Wren.

Page 403, foot-note.

721*b*. *Troglodytes aedon aztecus* BAIRD [63*a*, *part.*]

Western House Wren.

Page 407 — see text of Parkinai's Wren.

725*a*. *Cistothorus palustris paludicola* BAIRD [67*a*, *part.*]

Tule Wren.

Page 409.

726*b*. *Certhia familiaris montana* RIDGW [55, *part.*]

Rocky Mountain Creeper.

Page 410.

726*c*. *Certhia familiaris occidentalis* RIDGW [55, *part.*]

Californian Creeper.

Page 411.

736*a*. *Parus carolinensis agilis* SENN.

Plumbeous Chickadee.

Page 418.



BRIEF DIRECTIONS
FOR
COLLECTING AND PRESERVING

BIRDS' NESTS AND EGGS.

If you are desirous of making a collection of eggs of the birds of any locality, the following directions may aid you :

Remember that an egg has no financial or scientific value if it has no name. Therefore, be *very particular* to identify all eggs collected. If you do not, you will have in many respects a worthless collection. If the eggs in a nest are strange or unknown to you, do not touch them until you have procured the parent bird. If you cannot skin the bird, preserve its head, wings, and feet until you can have them identified. The student of Oology should *by all means learn* to skin birds and put them in proper shape. He will then make few mistakes in his data.

Empty the contents of an egg through *one* smoothly drilled hole in the side, and drill it as small as can be got along with. Force the contents out by blowing into the hole with a blow-pipe. Do not make holes at the ends of an egg for the purpose of blowing the contents out. Do not hold it too tightly in your fingers, for, if it breaks, you will learn at once that a thing of beauty is *not always* a joy forever. If the embryo is partially developed, the hole must necessarily be made larger, and the embryo should be extracted a little at a time with an embryo hook or forceps, and cut in pieces with a fine, narrow-bladed scissors. By soaking the egg in water over night the embryo will often become very tender and can be taken out with ease.

After the egg is blown it should be thoroughly rinsed by taking water into the mouth and spirting it through the blow-pipe.

Eggs, as a rule, should be kept in sets; a "set" being those taken from any one nest; and each one of a set should bear a number referring to a corresponding one in a note-book where full particulars of

the nest and eggs should be given. A printed label or data blank similar to the following diagram is also necessary:

No. Name
 Collected by
 Locality
 Date
 Set Identity Incubation
 Nest

For illustration, the blank lines of the label should be filled in the following manner: No. 126. Name, Arkansas Flycatcher. Collected by J. L. Clemmons. Locality, San Diego, California. Dated, June 2, 1881. Set, $\frac{1}{4}$ (indicating that the number of eggs in this set is four). Identity, bird shot. Incubation, begun. Nest, made of coarse sticks and twigs, lined with hair and cotton, placed in an "Australian Gum Tree," twenty feet from the ground. All these data should be carefully written, and the label placed in the cabinet with the eggs. If there are several sets of the same species, the collector should have his own number to distinguish the sets. The label with full data should *always* accompany the set in making exchanges. Besides the above particulars the note-book should be filled with memoranda devoted to the records of nests found and examined; the general nature of the surroundings; the precise color and condition of the eggs when found, as all these fade quickly from the memory.

Nests that can be collected require a wrapping of thread for their safe keeping.

In climbing high trees, climbers are often used. A wooden or tin box, filled with cotton, should be taken up with you; in this, securely place the eggs before descending the tree.

When eggs are to be shipped by mail or express they should never be packed in anything but wooden or tin boxes. Each egg should be wrapped in cotton and bound tightly with thread and then wrapped in tissue paper. Place them in layers in the box with bits of cotton between each egg. The bottom, sides and end of the box are often lined with sheet cotton which is still better protection.

In all ordinary cases collections of eggs are preserved in the drawers of a cabinet. These are divided by partitions, and each section partly filled with grated cork or box-wood sawdust, in which the

eggs are placed. The choice of a cabinet must depend largely upon the collector's means, if not also upon his individual preference.

I cannot dismiss this subject without a word on

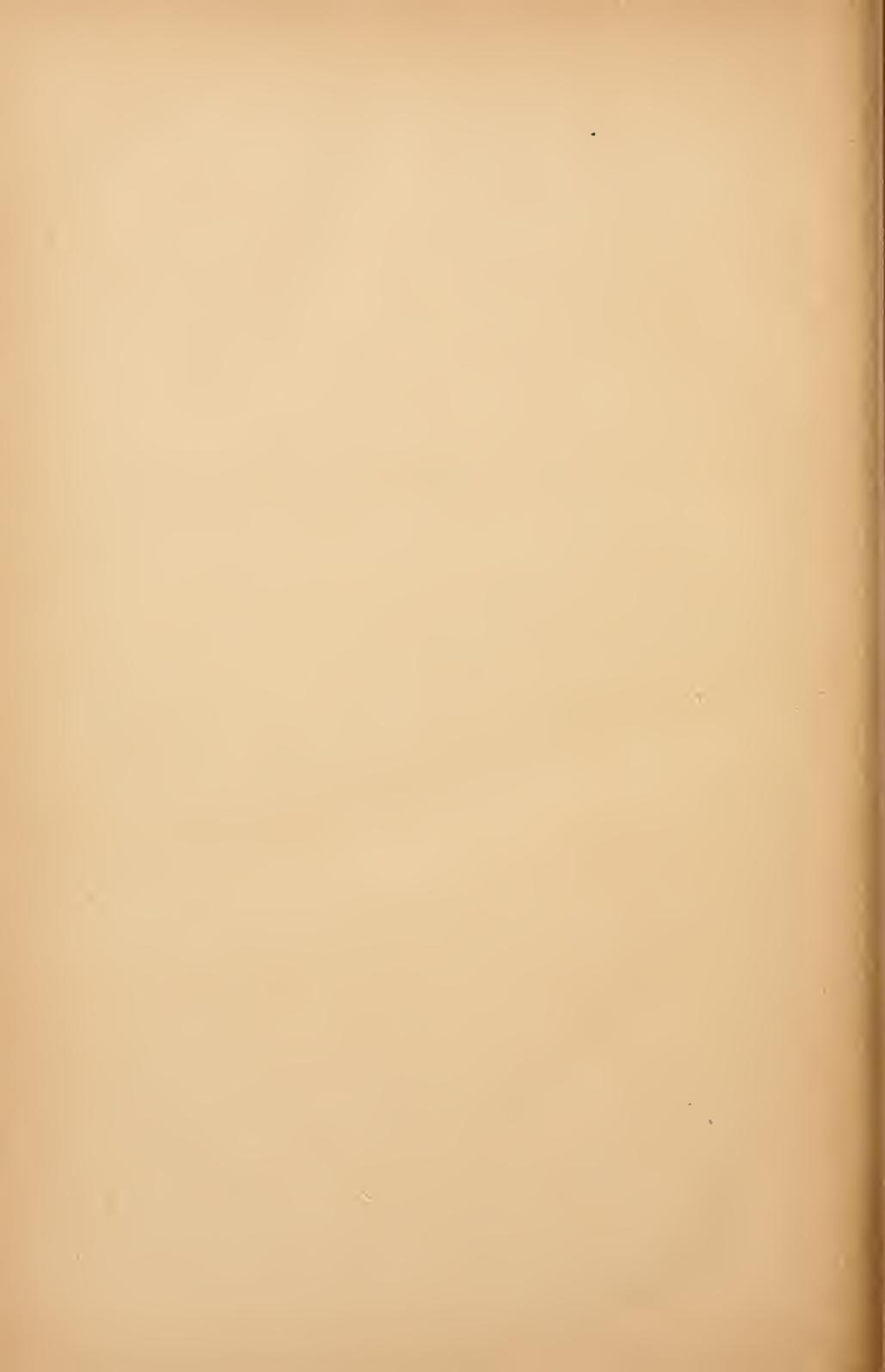
PROTECTING OUR BIRDS.

The above directions for collecting and preserving nests and eggs, and the whole contents of this work are intended to assist the true naturalist in the delightful subject herein treated. For those who idly roam the woodlands and pebbly shores, collecting everything in reach with aimless intent, this book was never calculated.

To every person who loves to study in the great field of Nature; to those especially who are deeply interested in the habits of the feathered tribe, the protection of bird life is of the utmost importance.

Surely none of the readers of the foregoing pages are engaged in the wholesale collecting of eggs for purely mercenary purposes, sacrificing and depopulating our birds, and screening their fiendish acts under the gauzy lace of *science*.

No thoughtful and honorable natural history dealer will uphold you in the utter destruction of whole rookeries and communities of birds, and there is no need for it in making a study of their habits, and adding a few specimens to a private cabinet. The true lover of the study of Oology will do everything in his power to promote the interests of the birds, so that their varied domestic affairs will annually add valuable notes to his ever-open note-book.



INDEX.

NOTE.—Besides the common name as given in the chief title of each species, all the common names mentioned in the text will be found in this index; as for example, in the text under Black Skimmer (page 40), the names Razor-bill, Cut-water, Shear-water, Sea Crow and Sea Dog occur.

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