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Minn
History Survey
THE GEOLOGICAL AND NATURAL HISTORY SURVEY OF
MINNESOTA.)

Zoological Series

no. 1,

FIRST REPORT

With the Compliments of

Henry F. Nachtrieb,

State Zoologist.

UNIVERSITY OF MINNESOTA,

MINNEAPOLIS,

MINNESOTA, U. S. A.

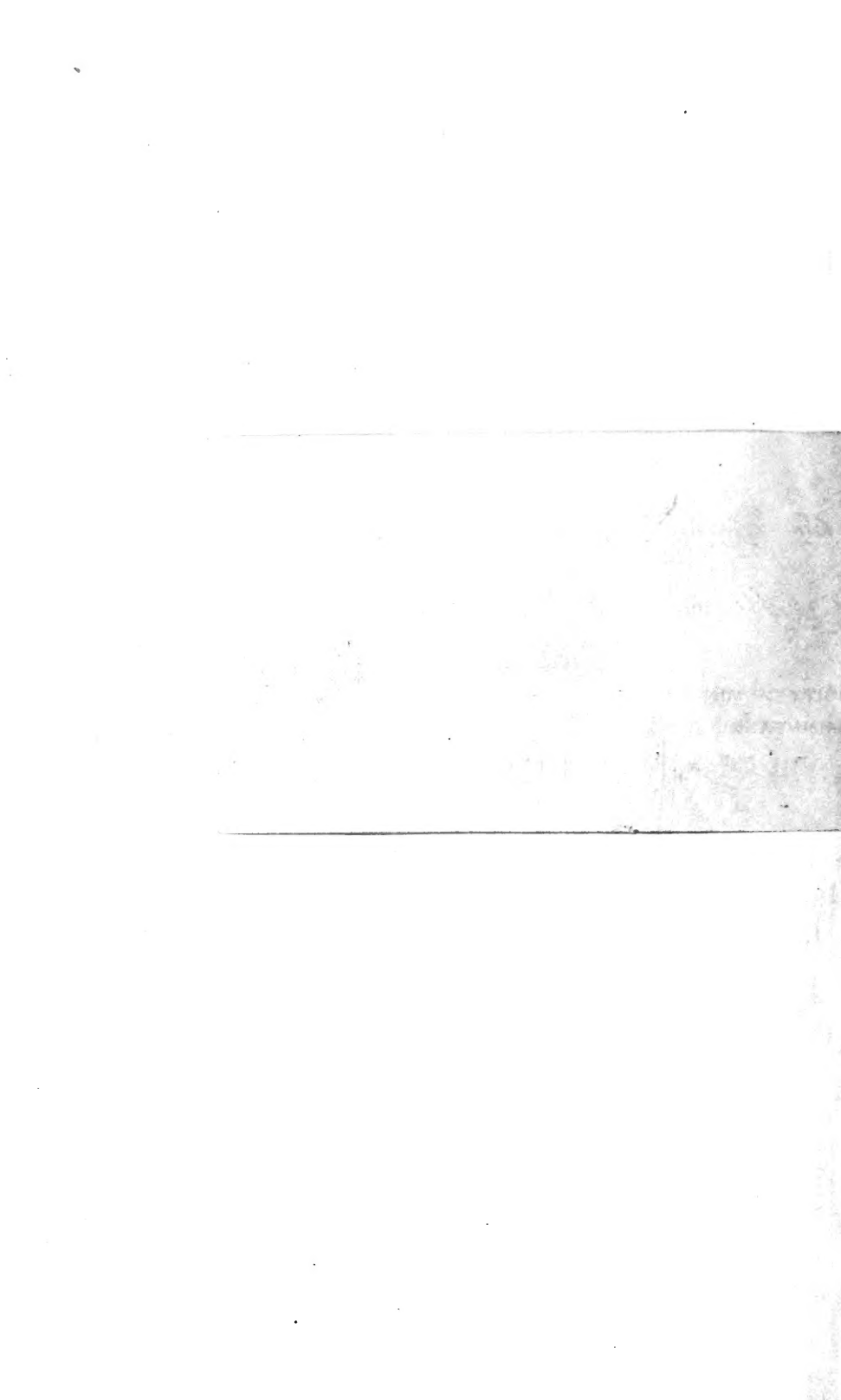
TA,

By Dr. P. L. HATCH.

HENRY F. NACHTRIEB, State Zoologist.

June, 1892.

MINNEAPOLIS:
HARRISON & SMITH, PRINTERS.
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FIRST REPORT

OF THE

STATE ZÖOLOGIST,

ACCOMPANIED WITH

NOTES ON THE BIRDS OF MINNESOTA,

By Dr. P. L. HATCH.

HENRY F. NACHTRIEB, State Zoölogist.

June, 1892.

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LETTER OF TRANSMITTAL.

To the President of the Board of Regents of The University of Minnesota:

SIR.—I have the honor herewith to transmit to your honorable Board my first report as State Zoologist.

Nearly all of the matter originally intended for this report has been crowded out by Dr. Hatch's "Notes on the Birds of Minnesota," which for several reasons I felt constrained to submit at present in their original form, and which accompany my general introduction.

Dr. Hatch was years ago requested to write a report on the birds of Minnesota, by Professor Winchell, when the State Geologist had charge of all the divisions of the survey. For this and other reasons I have not assumed any editorial responsibilities and privileges, but simply those of a transmitter.

A report on the birds of Minnesota is now in process of preparation, and just as soon as the ornithologist has important data, not yet in hand, at his disposal, and the mass of notes and material collected during the past thirty years has been thoroughly sifted and arranged, it will be submitted for publication.

Very respectfully,

Your obedient servant,

HENRY F. NACHTRIEB.

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GENERAL INTRODUCTION.

The Geological and Natural History Survey of Minnesota, was established by a legislative act approved by the Governor of the State March 1st, 1872. "There is no question," to quote the words of the State Geologist, "but one of the prime motives of the law was to introduce another auxiliary force into the State University, by making it a center whence should radiate information concerning the natural features of the state, and toward which should gravitate all collections of natural history that should otherwise be brought to light." Taking the statement in its most comprehensive sense, it is undoubtedly true; and the fact that the State Geologist has always been enrolled with the faculty of the University in the catalogue, and that the law explicitly makes the Board of Regents the director of the survey, fully justifies the statement in regard to the relation of the survey to the University, and indicates an element of excellence not to be found in the laws creating similar surveys in other states.

At the time the present survey was organized it seemed desirable for various reasons to pay more attention to the geology of the state than to the botany and the zoölogy, and accordingly a geologist was appointed to take charge of the survey work. This was in accordance with the spirit of the times. And in accordance with an established custom, the geologist of the survey was generally called the State Geologist, an appellation that common usage has given the weight of a title, though it never was officially conferred as such. For many years the "Natural History Survey," existed only in the wisely formulated law, for which excellent and comprehensive law we owe thanks to Dr. Wm. W. Folwell, who was at that time president of the University.

Later on the importance and necessity of beginning the botanical and the zoölogical work was now and then recognized in the appearance of papers relating to the flora and fauna of the state. Naturally, however, the botanical and zoölogical work was not prosecuted with the same vigor and accuracy as the geological, for the day had gone by when one man could master all sciences. And the geologist of to-day finds problems enough in geology to engage all his time and tax all his energy and genius.

It was the recognition of these facts as well as the desire to make a more efficient "auxiliary force" of the survey contemplated in the law that prompted the Board of Regents to relieve the State Geologist of the excess of requirements and put the

botanical and the zoölogical work of the survey under the charge of, respectively, the professor of botany as State Botanist and curator of the botanical museum, and the professor of animal biology as State Zoölogist and curator of the zoölogical museum.

The present State Zoölogist was appointed by the Board of Regents about three years ago. Nothing was done during the first two years, other University duties taking me abroad one year, and sickness making work impossible the other. Last summer (1891) a party of three spent not quite four weeks on Lake Vermilion, as much as the funds remaining after purchasing apparatus and chemicals would permit. The exceedingly bad and disagreeable weather reduced this time to about two weeks. Nevertheless, some valuable data and experience were gained that are of value for the future.

It has been a surprise to me that so few of our "posted" citizens know anything about the existence of a law creating The Geological and Natural History Survey, and to dispel a little of this ignorance where it ought not to be, I quote here the sections relating to the Natural History division of the Survey.

"Section 1. It shall be the duty of the board of regents of The University of Minnesota to cause to be begun as soon as may be practicable, and to carry on a thorough geological and natural history survey of the state.

Section 3. The natural history survey shall include, first, an examination of the vegetable productions of the state, embracing all trees, shrubs, herbs and grasses, native or naturalized in the state; second, a complete and scientific account of the animal kingdom as properly represented in the state, including all mammalia, fishes, reptiles, birds and insects.

Section 6. It shall be the duty of said board of regents to cause proper specimens, skillfully prepared, secured and labeled, of all rocks, soils, ores, coals, fossils, cements, building stones, plants, woods, skins and skeletons of animals, birds, insects and fishes, and other mineral, vegetable and animal substances and organisms discovered or examined in the course of said surveys, to be preserved for public inspection, free of cost, in the University of Minnesota, in rooms convenient of access and properly warmed, lighted, ventilated and furnished and in charge of a proper scientific curator; and they shall also, whenever the same may be practicable, cause duplicates in reasonable numbers and quantities of the above named specimens, to be collected and preserved for the purpose of exchanges with other state universities and scientific institutions, of which latter the Smithsonian Institution at Washington shall have the preference."

Certainly no zoölogist will complain that this law is too narrow and irrational, for section 3 alone commands for him a field so wide as to call for all lines of zoölogical investigation. There are, however, certain lines of investigation universally recognized as coming particularly within the scope of such state surveys. But even such investigations almost invariably demand others that at first sight seem foreign.

The intensely practical man is almost always really the most unpractical, and the greatest obstacle to progress. He will pooh—pooh the investigation of the habits and life history and structure of an unpalatable sucker or the "insignificant" stickle back and demand the investigation of the bass and other food fish only, entirely losing sight of the fact that the one serves as food for some of his favorite fish and the other wages ruinous war against them.

Many similar examples clearly show up the folly of trying to consider only that which we can immediately utilize, and usually convince the short-sighted that we can not intelligently and successfully manage the one in ignorance of the other. Too many of us forget that what we now call applied science was at one time considered pure science, and that it is a question whether the Edisons or the Webers, Faradays and Franklins have done most for the comfort of mankind, and whether the zoölogists, who through years of patient work gathered the life histories of many of our parasites, thus dispelling the dark cloud of superstition and suggesting a rational treatment for many diseases and giving to every one the simplest means of protection, should not be classed among the most practical.

If the results of the patient work of honest investigators of past generations are to-day wielded by the most mechanical laborer, what is to keep the work of the so called scientist from becoming a tool for the comfort and happiness of future generations? Indeed are we not reminded on all sides that the more thorough our knowledge of the things and phenomena about us becomes through observation and experiment, the better do we utilize them and the more uniform and generally accepted become our interpretations. And does the intellectual work and triumph mean nothing to any or all of us?

The universe is a whole and not a collection of absolute independents, and no line or kind of work, however purely scientific it may appear at the time, can be carried on without sooner or later becoming evident and universally tangible in some practical form.

Still, while we recognize that the investigation of one animal points to the necessity of investigating others, that one subject always leads to another and one problem inevitably suggests one or more others, we must admit that certain lines of zoölogical investigation were hardly contemplated in the organization of the survey, and more properly come under the purview of the University. As a matter of fact, we must somewhat circumscribe the work of a state survey, always, however, with the understanding that exigencies may arise demanding a widening of the circle.

In accordance with the view indicated above, the present plan of the State Zoölogist contemplates primarily the scientific investigation of all those animals of direct economic importance, and, in accordance with section 6 of the law, the collecting and placing on exhibition in the museum representative specimens of the animals of the state in such a way as to give them an educational value rather than a mere display value.

The museum has been furnished with new cases, and the fauna of the state can be placed on proper exhibition just as fast as the material is collected and prepared and the necessary money is placed at the disposal of the curator.

The importance, or rather the necessity of at once beginning the formation of a representative collection of the animals of the State, will certainly not need urging when the present condition of the museum is taken into account.

Strange as it may seem, it is nevertheless true that notwithstanding the fact several papers have been published on a few groups of animals found in the state, the museum practically has none of the material upon which these papers were based. Indeed in some cases there apparently was not even an attempt made to preserve the specimens that served for the description of new species, and we have absolutely nothing here for comparison. Comment on such methods of work is unnecessary. Of the collection here now, many specimens are not even good show specimens. Many are without any data whatever, and many have only the name of the taxidermist added, while others have data so obviously out of place that they are practically valueless. Many of the really valuable things have been badly damaged by moths and other injurious insects, and the fire of two years ago and neglect previous to that time more or less injured everything. An amusing group is quite a collection of animals purchased to represent the

fauna of Minnesota at the New Orleans Exposition. As one looks at the pronghorn, the grizzly, the three-toed sloth, the iguana, the toucans, the bird of paradise, etc., etc., the question naturally arises, when did Minnesota have such a fauna, and how were the animals preserved? It is to be hoped the exhibition at the coming World's Fair will not repeat this ludicrous spectacle. The facts noted above in connection with the fact that some animals formerly abundant in Minnesota no longer even merely visit the state, and some of those still within our borders are being rapidly driven out of the state, certainly point to the necessity of at once beginning to collect and properly preserve, with data, representative specimens of the fauna of the state. In accordance with this conviction, and a desire to enlist the cooperation of all those favorably located in the state, directions for collecting, preserving and shipping specimens of animals are now being prepared for gratuitous distribution to all interested in the work of the survey.

It must not be supposed, however, that we are attempting to build up a general museum. Such a museum is impractical at present and doubtfully desirable. At present we are aiming at a comprehensive local state collection.

The most valuable portion of any museum is always that which is not prepared for display but is set aside in proper rooms for reference and comparison. Of such a collection we have as yet hardly a beginning. The working collection, however, has been begun and an earnest effort will be made to preserve in proper form and keep accessible all specimens that serve as the basis for descriptions of new species or varieties or that show interesting modifications or illustrate facts of distribution and habit. In a few years this so-called working collection will be far more valuable than the fine specimens on exhibition and will require much less room, money and care.

The groups of animals to which special attention is at present being given by the field workers are:—the fishes, the birds, the reptilia and batrachia, and the mammals. Other classes are by no means neglected. Some lines of investigation, however important, can not be undertaken at present for the want of laboratory facilities at the proper place. A lake-side, or rather fresh-water biological station, is an imperative necessity, and such a laboratory under the care of the University ought to be established now. In addition to being a place for investigators it could be a resort for the "science teachers"

of the state, where, during the summer vacations, they could gain that knowledge of facts and methods at first hand so much needed by many of them to enable them to properly teach botany, physiology and zoölogy. The mere association of such teachers with the students carrying on original investigations would be of incalculable value.

For a number of years marine biological stations, usually called zoölogical stations, have offered opportunities for the study of marine life in various parts of the world and have annually attracted great scientists from all civilized countries. The enthusiasm and satisfaction with which their work has been received in every civilized community, and the practical results traceable to their influence are a sufficient justification for their existence. Indeed to-day they are just as much a necessity as the university laboratories. While the number of marine biological stations has increased to ten or more, the establishment of fresh-water biological stations has been attempted in but few places, so that to-day only one or two properly equipped are in existence in Europe, and none in this country. The reasons for the preferences thus indicated may briefly be stated to be:—(1) Man's desire to discover, and to see that about which he knows nothing from direct observation. (2) The fact that hitherto the problems in zoölogy have been largely morphological problems, and these point to the seas for solutions. For in the oceans we see the vast original home with a uniformity and constancy of environment and gradual transitions not met with elsewhere. Moreover the oceans are so densely populated that the patient and thoughtful investigator has never been disappointed.

There is, however, abundant evidence on hand in the works of great men showing that not even all the morphological problems are to find their solutions in the study of only marine forms, and that what we would expect on *a priori* grounds actual observation and investigation demonstrate. And while the conditions of life in the ocean may be characterized as quite uniform, those on land and in fresh-water must be characterized as very variable, and consequently demanding more varied adaptations and thus naturally leading to a higher development. In view of this it becomes evident that the problems relating more particularly to the physiological side of living things are to be solved principally at fresh-water stations and not at marine stations. The fresh-water biological laboratory therefore has a special field of work in phys-

iology and enough in morphology and embryology to keep it from becoming perniciously exclusive. Aside from the necessity of such a laboratory for the survey work it must be said that no state offers more to such a station than our own. We have all the natural conditions in the way of lakes and streams and geographical position. In a country of such great distances it is impractical for many to go to the marine stations. Others who feel that in the future they will have to deal with land and fresh-water forms think it a waste of time and money to study marine life. A sojourn of several months at a well equipped inland station would convince such of their mistake and prepare them for better work. To our army of teachers such a station at one of our principal lakes could offer an opportunity during the summer months of becoming acquainted with the modern methods of teaching the biological sciences by being taught themselves how to make the most out of the material and apparatus at their command. From lectures and demonstrations and through association with advanced students and investigators they would gather the general principles and laws of biology as known at the time and would unconsciously catch the spirit that would place them in the proper attitude toward the biological sciences. The time for establishing a fresh-water biological laboratory in Minnesota is ripe, and no citizen can more effectually perpetuate his name than by endowing and equipping such a laboratory as indicated, and his investment can not be made more safely and profitably than under the care of the University of Minnesota.

HENRY F. NACHTRIEB,
State Zoölogist,
University of Minnesota.

June 1, 1892.



THE GEOLOGICAL AND NATURAL HISTORY SURVEY OF
MINNESOTA.

NOTES ON
THE BIRDS OF MINNESOTA,

WITH
SPECIFIC CHARACTERS.

By P. L. HATCH, M. D.

PREFATORY STATEMENT.

As the author intimates in his Preface, the manuscript for the "Notes" was begun several years ago and has been ready for publication for some time.

The work represented by the "Notes," was begun a number of years ago, when the State Geologist, Prof. N.H. Winchell, still superintended all the work of The Geological and Natural History Survey. It is therefore but just to Prof. Winchell (and to myself also), to state that in calling upon Dr. Hatch for his manuscript and seeing it through the press, I have (for reasons that will become evident in future publications), not assumed any editorial responsibilities, but have, as State Zoölogist, simply discharged a duty the "Survey" owes the author, who years ago was requested by Prof. Winchell to write this report and who has spent much time and money upon it.

It has been impossible to refer any portion of the proof to the author or to consult him in regard to style of type, etc. For this reason special care was taken in reading the proof, and as the manuscript had all "passed" before the author forwarded it to me from the far west, and I had the final proof carefully compared with the manuscript, the author will not, I trust, be misrepresented. Naturally, however, some things will appear that the author would have eliminated or modified. Circumstances and time would not permit, and I trust this will to some extent mollify the critics.

It is a matter of no small regret that the bird material, upon which this report is based, is not the property of the "Survey" and is not accessible for reference and comparison. All of it ought to be here, properly preserved and labelled. But I have considered this subject elsewhere and need not consider it any further here.

HENRY F. NACHTRIEB,
State Zoölogist,
University of Minnesota.

PREFACE.

It is due to myself as well as the public, that I should say the great delay in the publishing of this volume has been from causes beyond my personal responsibility. I have regretted it on account of some misapprehensions that have arisen, but it is said that "All is well which ends well," and half of the quotation is assuredly true in this case, for this *ends* it.

The magnitude of the task so zealously conceived and undertaken, was greatly underestimated, yet the earnest employment of all of my opportunities enabled me to approximate my ideal for a time, when an interruption of several years occurred, after which it became impossible to maintain more than is shown by the completed work.

The classification is that established by the American Ornithological Union, and published in 1886. Each species given has its corresponding number, and except in occasional instances, the descriptions mostly correspond with those given in the Pacific Railroad Reports, and the measurements are in inches and hundredths of an inch.

While I have aimed to make it as nearly correct in its statements of facts observed as is possible, I do not flatter myself that errors have not found their way into this record through so many years of observations, which others may ultimately correct.

P. L. HATCH.

August 16, 1892.

Order PYGOPODES.

Family PODICIPIDÆ.

ECHMOPHORUS OCCIDENTALIS (LAWRENCE). (1.)

WESTERN GREBE.

Although during the period in which I have been an observer of the birds in Minnesota very few of this species have been seen by myself, nor reported by others whose observations could be implicitly relied upon, I am able to record enough to give it "a name and a place" in the fauna of our state. I first met with an individual specimen in the collection of a German living in St. Paul in 1859, and in 1861 I saw one amongst the collections of Mr. Shroeder of the same city; but it first came into my hands by my own gun in May of 1869, on the Red River, and again in 1870 through the kindness of Mr. J. J. Jamison, an eastern gentleman of amateur scientific proclivities who was shooting ducks in the autumn of that year at Bigstone Lake. It was alone, and entirely unsuspecting to all appearance. It was a mature male, and in good plumage, meeting all the measures given in the descriptions of the ninth volume of the Pacific Railroad Reports. Not until the spring of 1883 did I see one again, and then in the same locality, or within a few miles of it, on the Red River near Moorhead. It has been several times reported without any verifications, one of which was presumptively reliable, but as the party did not regard its identification of sufficient importance to give me an opportunity to endorse his own, I made no record of it amongst my notes. In 1872, while collecting extensively in Santa Clara county, California, I found it common for the species in Drinkwater Lake, a sort of lagoon some 12 miles south of San Jose and a few miles within the limits of Sacramento, and in several other kindred localities; but exceedingly common in March at

Old-town, San Diego. Although the eggs have often been found on the Pacific coast, none have ever come to my notice here.

SPECIFIC CHARACTERS.

Upper part of head and nape of neck, fuliginous black; back and wing-coverts grayish-black, the feathers margined with gray; primaries light, ashy-brown, darker at the end and white at the base; secondaries white, marked with ash on the outer webs (occasionally white); space between the bill and eye gray; throat, sides of neck, and entire under plumage, silver-white; sides marked with grayish-black; bill dusky, or nearly black, except the cutting edges and end, which are yellow; iris orange; tarsi and feet grayish-black externally, flesh color, internally.

Length, 28; wing, 8; bill, 3; tarsus, 3.

Habitat, Western North America, eastward to Manitoba.

COLYMBUS HOLBELLII (REINHART). (2.)

RED-NECKED GREBE.

It is my pleasure to say that I am indebted to Mr. J. N. Sanford, of Elbow Lake, in Grant county, for my first knowledge of the presence of this species of the Grebe family in the state, and accompanying the information so much esteemed, he sent through me to the Minnesota Academy of Natural Sciences four eggs in prime condition for preservation, which he had obtained in his vicinity in July, 1880. These eggs measured 1.95 by 1.23; 2.00 by 1.25; 1.85 by 1.15 and 1.90 by 1.20. The color when so fresh was a rather pale, greenish-white and was uniform. The nest was described as being near to the water, and consisting of coarse, rank marsh weeds, placed on a bunch of the same materials in a marshy locality. He has been a close observer of the water birds especially, and has contributed some interesting and valuable facts respecting the breeding habits of several species found in his section. Since those days my opportunities for learning more of the local habits of the species have been good. Without being abundant anywhere in Minnesota, it is nevertheless not to be accounted rare, for its species in the sparsely settled districts characterized by wet, pondy prairies. I have found it in my own county at such times as to make it reasonably certain that it breeds in such localities as are largely secluded, and embracing ponds and small lakes bordered by reedy marshes. I find individuals of this species in Fillmore, Carver, Otter Tail and Grant counties,

and have many reports of its presence in several others. As long since noticed by bird observers, the young of the Red-necked and Crested Grebes resemble each other so much as to make their differences impossible to define.

SPECIFIC CHARACTERS.

Upper plumage blackish brown, the upper part of the head and neck behind, black; primaries ashy-brown; secondaries mostly white, except a few of the inner ones which are dark ash; cheeks and throat ash gray; a white line from the lower mandible under and beyond the eye; forepart and sides of neck rich, brownish red; lower parts silvery white, sides dusky; bill black, pale at the end, and bright yellow at the base; iris carmine; tarsi and feet externally greenish black, internally yellow.

Length, 18; wing, 7; bill, 1.25; tarsus, 2.

Habitat, North America at large.

NOTE. Since writing the above I have learned more of the local habits of this Grebe and can add that its food is mostly aquatic worms and larvæ with some minnows. It is no trivial thing to bag one of them on account of his unremitting vigilance, and his expertness in diving and remaining seemingly a long time submerged, which however is not so long as it seems, for when he returns to the surface he only exposes the bill and enough of the head to bring his eyes into use while the body is kept completely concealed. The power to do this continuously for a considerable time, belongs to the entire family, and to few if any others so perfectly. In this submerged condition they will swim so gently and so evenly as to elude the observation of most persons until they have learned to detect them, after which there is little difficulty.

COLYMBUS AURITUS L. (3.)

HORNED GREBE.

Although not universally distributed throughout the state, the Horned Grebes are fairly common in many sections. Pools, ponds and sloughs in open districts and bottom lands are its favorite localities for breeding. Hence, I am not surprised to have Dr. Hvoslef report it as breeding in the vicinity of Lanesboro, Fillmore county, along our southern borders, and would have expected Mr. Washburn to do so along the Red River, as Dr. Coues* had done several years earlier. Indeed I have had individuals sent to me by hunters from a dozen or more localities, most of which have been in prairie regions to the north and west of Minneapolis and St. Paul. It breeds occasionally in the vicinity of Waseca * * and at Bigstone Lake.

*** The earliest record I have of its arrival in spring is April 23d, but reliable observers give a much earlier date. The nesting is begun by the 20th of May. The structures are quite bulky, and consist of old reeds principally, placed on a tussock of the same material and rudely embracing surrounding erect stalks. Not infrequently they are entirely surrounded with water, but more often on the wet land a few feet from the shores of a slough. The excavation is exceedingly superficial, but contains from 7 to 10 eggs, originally grayish or yellowish white, that soon become very much soiled by the rotten reeds and filthy feet of the denizen. The young take to the water at once. The fact that they have been seen swimming with the parent as early as the first week in May, and at the tenderest age as late as the 3rd of August, suggests more than one brood in a season. I have no conclusive evidence that they do not breed twice. They linger quite late in the autumn, but are so infrequently observed that the proximate date of their migration southward is still unknown to me.

Like the other species of the genus, they have the faculty of depressing their bodies below the surface of the water in which they are swimming, at will, in the presence of danger. A good field glass will find at such times only the bill and eyes above the water.

*Birds of the N. W., p. 532.

**Edward Everett. Notes from Waseca.

***Correspondence of Mr. L. Froman.

SPECIFIC CHARACTERS

Upper part of head, cheeks, throat and ruff, glossy black; a broad band from the bill over the eye, and the elongated occipital tufts behind them, yellowish-red, color deepest next the bill; upper surface brownish-black, each feather margined with gray; primaries brownish-ash, secondaries mostly white, some of the outer ones dark ash; fore neck and upper part of breast bright chestnut-red, sides of the same color, mixed with dusky; abdomen silky white; bill bluish-black, yellow at the tip; loreal space bright carmine; iris carmine, with an inner circle of white; tarsi and feet dusky gray externally, dull yellow internally, and on both edges of the tarsus.

Length, 14; wing, 6; bill, 1; tarsi, 2.

Habitat, Northern America.

The foregoing is the description of the vernal plumage, the autumnal being much less striking. In the former they are sometimes found in considerable flocks, disporting themselves in the bays of our lakes and in the streams which supply them. Their smooth, rapid natation and wholesale diving at such times is marvelous and eminently characteristic.

I have never as yet found them in flocks in autumn, but always in family parties and pairs, and almost never at that season upon the wing. They seem to follow the water courses and migrate southward about the first week in November. Their movements are made in the earliest part of the morning and at twilight in the evening, swimming silently along, close under the overhanging banks and reeds singly, from five to twenty yards apart. When suddenly surprised, instead of taking to wing they dive, and after swimming considerable distances deep under the water they rise close to the shore, where, concealed by debris, or grass and reeds, with only the bill and eyes exposed, they remain until all danger has disappeared. None but the closest observers can know for themselves when or how they leave us in fall migration. Their food consists largely of water beetles, larvæ and "small fry."

COLYMBUS NIGRICOLLIS CALIFORNICUS(HEERMANN)(4)

AMERICAN EARED GREBE.

I list the Eared Grebe upon specimens found mounted in collections from time to time through many years of local observation, two of which are now in the collections of the Academy of Sciences at Philadelphia, I think. All were reputedly obtained within the limits of Minnesota.

Having met with the species at San Diego, California, in 1870, I had no difficulty in identifying them at once.

SPECIFIC CHARACTERS.

Head and upper part of neck black; rest of upper parts brownish-black; wings grayish-brown, with a broad patch of white; throat, fore part and sides of neck dull black, its lower part with some spots of the same; rest of lower parts glossy, silvery-white, excepting the sides of the body and rump, which are light red; bill black, tinged with blue; iris blood red, feet dusky-gray externally, internally greenish-gray; tufts on sides of head orange, yellower anteriorly, and posteriorly red.

Length, 13; wing, 5; bill, 1, tarsus, 1½.

Habitat, Mississippi river to Pacific and northward.

PODILYMBUS PODICEPS (L.). (6.)

PIED-BILLED GREBE

This is by far the most numerously represented species of the Grebe family in Minnesota. There are few ponds, sloughs, or lakes where ducks are found, that do not contain a few of them. They arrive early, and they stay late, often until only small openings in the ice remain before the final closing for the long Minnesota winter. Breeding presumably in nearly all the

localities where found, they so effectually conceal their nests that they are very rarely obtained. But where they have been found the nest was uniformly formed of partially decayed reeds, with perhaps a portion of coarse, sedgy grass in the employment of which little architectural design is evident. As in the case of the other Grebes, there is a redundancy of material, but so rudely disposed as to lead any one in search of the nest to suppose it to be a mere heap of drift from high water in spring, the eggs having been left concealed by the disposition of rotten reeds and grass over them. None I have seen have contained more than five or less than three eggs of a soiled, yellowish-white color. Pot-hunters "of the baser sort" call them *Hell-divers*, and only the downy-chinned variety spend any ammunition on them, as they disappear with ghost-like celerity on their approach. Only their bills rise again until the hunter is finally gone.

SPECIFIC CHARACTERS.

Upper plumage, very dark-brown; primaries, dark-ash; secondaries, ash on the outer webs and white on the inner; cheeks, and sides of neck, brownish-gray; chin and throat marked with a conspicuous black patch nearly two inches in extent; lower part of neck, upper part of breast and sides, dull rusty-brown, spotted and rather indistinctly barred with brownish-black; lower part of breast and abdomen grayish-white, mottled with dusky spots; bill pale-blue, dusky on the ridge of the upper mandible, a broad black band across both mandibles and including the nostrils; iris, brown; tarsi and feet, grayish-black.

Length, 14; wing, 5½; tarsus, 1½.

Habitat, both Americas.

With nothing economic, nor esthetic to commend it to the attention of men, women or hunters, (who contemptuously call it Dab-chick, Water-witch, or "Hell-diver") it is left solely to the heritage of the naturalist. I think the popular cognomen of "Water-witch" should be preferred, their habits in diving and concealing themselves affording a shadowy but plausible reason for the choice. Mr. Holzinger gives this species as breeding around Lake Winona, and Mr. Washburn found it abundant at Ada and at Thief river. It is universally distributed. The food consists of small fishes, aquatic worms and plants.

Family URINATORIDÆ (The Loons.)**URINATOR IMBER (GUNNER). (7.)****LOON.**

I found this Loon abundantly represented for its species when I came to the then territory of Minnesota in 1857, but supposed that the general settlement of the country would soon decimate them. In this I was mistaken, for there has been no diminution of their relative numbers in any general section which I know of, while in others, there has been an appreciable increase. The earliest openings in the lakes not infrequently are occupied by one of them, and there is no time during the entire summer when they may not be seen in those lakes known to be their favorite resorts. They are not found in the smaller ponds ordinarily, preferring those more abundantly supplied with fish and offering better security from the hunter's gun by its expanse. Their weird, solitary notes, as well as their dignified demeanor when undisturbed, give little intimation of their social vivacity after the young have become grown and strong. Who would prove this must be willing to quit his couch early, before the family has been broken by the departure of the male to his solitary haunts and the female has sent the young hither and thither in search of their own food, which takes place before the sun has been long risen. It has been my privilege to witness some scenes of their matutinal jollifications, which have always occurred at the earliest dawn, and have terminated with the advent of the sun. The night is spent in proximity to each other on the water, somewhat removed from the land. And in the earliest morning the notes of parent male soon call out a response from the other members of the family, when they all draw near, and after cavourting around each other after the manner of graceful skaters for a brief time, they fall into line, side by side, and lifting their wings simultaneously, they start off in a foot race on the water like a line of school children, running with incredible speed a full quarter of a mile without lowering their wings or pausing an instant, wheel around in a short circle, (in which some of them get a little behind) and retrace their course to the place of starting. This race, after but a moment's pause, is repeated over and over again, with unabated zest, until by some undiscoverable signal it ceases as suddenly as it began. Its termin-

ation is characterized by a subsequent general congratulation manifested by the medly of Loon notes. The walking or rather running upon the face of the quiet lake waters, is a marvel of pedal performance, so swiftly do the thin, sharp legs move in the race, the wings being continuously held at about half extent. Soon after this is over, the male parent takes to wing to seek his food in some distant part of the same or some other lake, which is soon followed by the departure of the female in another direction, while the young swim away in various directions to seek their supplies nearer the place of nightly rendezvous. Their nests are not infrequently found, and always either on the main land near the water or on the islands. Occasionally one has been reported as found upon a muskrat's pile. Several may nest quite near each other, particularly on undisturbed islands. To construct them, a large quantity of weeds and grass is gathered into a pile, into which a depression is made a foot or more in diameter, in which are deposited usually three olivaceous, brown eggs, varying from $3\frac{1}{2}$ to nearly 4 inches in length. The earliest young have been seen in the water by the second week in June. By the middle of September, they have reached their full development. Most of the members of this species are driven away by the 25th of November, but occasionally an individual remains all winter, as I have learned, notably along the St. Peter's river, where numerous large springs have kept considerable areas free from ice. Their very remarkable plumage is only fully attained at their third year. The younger birds precede the others in migration from one to two weeks.

SPECIFIC CHARACTERS.

Head and neck black, upper part and sides of head glossed with purple; a small transverse mark on the throat composed of white feathers, quill-like in form, distinct from each other and placed longitudinally on each side of the neck; lower down are large patches of white, of the same peculiar pattern, and running in the same direction, nearly meeting behind, and in front are about an inch apart; upper plumage and wing coverts deep, glossy black, with pure white spots placed in regular transverse rows, slightly curved downwards; these spots on the upper part of the back, are small and nearly round, but descending lower on the back, increase in size and become quadrangular in form, being largest on the scapulars; on the lower part of the back, upper tail coverts, and sides which are black, the spots are small and round; the sides of the neck near the shoulder lineated with black and white; the primaries, secondaries, and tail, brownish-black; the under surface,

glossy-white, with a narrow band of dusky feathers crossing the lower part of the abdomen, and marked with small white spots; lower tail coverts, blackish-brown, tipped with white; bill, black, compressed, strong and tapering; outline of upper mandible, nearly straight, very slightly curved; the lower mandible has a groove underneath running from the junction of the crura towards the point; the tail consists of twenty feathers.

Length, 30; wing, 14; tarsus, 3; bill, 3; height at base, 1.

Habitat, north portion of Northern Hemisphere.

Though fish and frogs are preferably their food, they do nicely without them when supplied with aquatic vegetation. If undisturbed by being fired at, they will visit the same localities daily during the season for their food.

NOTE. This interesting bird has increased in relative numbers on our larger lakes of late years, notwithstanding the greater number of persons who visit them, and on which boys and sportsmen (?) are tacitly allowed to shoot *at* them to their heart's content, as they rarely hit them. I had supposed that unless the firing was arrested, they would desert these favorite resorts, like White Bear, Waseca, and Minnetonka. Mr. William Howling and Son of East Minneapolis presented me with the most beautiful and perfect specimen of Loon I have ever seen a few years ago, except that the tip of the bill is hooked. There are no indications of it having been produced by injury, but the flexion downward is smooth and perfectly turned. Query:—Is it a case of evolution *avaunt*?

URINATOR ARCTICUS (L.). (9.)

BLACK-THROATED LOON.

In the local observations of this exceedingly rarely seen Loon, we have an instance of the folly of making positive declarations of the limitations of the habitat of species before the fullest attainments from observations have been reached. The extremely pernicious practice of ambitious writers in anticipating the final testimonies of science in every department of investigation, has led to evils enough to lead to its abandonment long ago, but it is probable that the world will have to wait for the Millennium before the truth can be waited for till all the facts are in, and then, we devoutly hope the said writers will be better employed. The conservative A. O. U. have magnanimously allowed the Black-throated Loon to visit the Northern United States in winter. From the winter of 1858 till that of 1869, eleven years, this very northern bird came indisputably within the range of my field glass in five of them, but I found it impossible to secure one for the reason

that it was always in, or near an opening in the lakes where concealment in approaching near enough to secure it was impossible. My hope of finding some venturesome individual occupying such an opening in the Mississippi, as the Scoters had done from winter to winter, was never realized, so the good field glass must alone be credited with my observations. From the time of my last date, the opportunity to see them was interrupted by several winters absence, and the places in which I had made my previous observations had come to be encroached upon by approximate settlements to such an extent as to drive them elsewhere I suppose. I am satisfied that they have been seen by others who supposed them to be individuals of another species, namely the Red-throated Divers.

The only mounted specimen that I have ever seen under circumstances to make me believe that it had been obtained within my province of observations could not be vouched for as having been gotten in it, and I have therefore waited some good fortune to learn more about this rarely seen Loon.

URINATOR LUMME (GUNNER). (11.)

RED THROATED LOON.

The Red-throated Loon is a fairly regular winter visitant of our domains, and while lacking the necessary positive proof of its breeding on the shores of Lake Superior within the borders of Minnesota, I have abundant circumstantial reasons for thinking it does.

It has been seen and, if I may trust the popular descriptions, it has been killed, several times in the vicinity of Duluth by pot hunters in the period of presumptive incubation, yet I have never known of the nests having been seen, and if they have been seen they have not been recognized as other than the common Loons although those of this species are much the smaller of the two. Through exchange, I have come into the possession of what are said to be those of this bird.

There are very considerable variations in the size of the eggs of the entire genus, and in those of the Red-throats it is from 2.60 by 1.70 to 3.00 by 1.90. The color and markings are precisely like those of the other species. I am informed that the nests are even less mechanical in their structure, and, like those of the others, are quite near the water, to which their beaten paths lead from several directions.

SPECIFIC CHARACTERS.

Upper part of the head, front, sides of head, upper part of throat, and sides of neck, bluish-gray; hind neck streaked longitudinally with white on a greenish background, the white feathers being raised above the others; on the forepart of the neck is a large longitudinal patch of deep reddish brown; upper plumage brownish black slightly tinged with green, and on the upper part of the back and lower part and sides of the neck, streaked with and mottled with white; wings and tail brownish black; under plumage pure white with a band across the hinder part of the abdomen, and the lower tail coverts, brownish gray; bill bluish black; iris bright red; tarsi and feet brownish black externally, internally pale flesh color; claws yellowish at the base, and dusky at the end.

Length, 27; wing, 11.50; tail, 2.50; bill, 2.25; tarsus, 2.75.

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

Order LONGIPENNES.

Family LARIDÆ.

RISSA TRIDACTYLA (L.). (40.)

KITTIWAKE.

The Kittiwake is a regular spring and fall migrant, spending its winters far to the south, returning here from the 25th of March to the 10th of April, remaining for only about eight or ten days, and then passing on further north to breed. Circumstances connected with my observations of the gulls migrating through the portion of the State where my principal personal observations have been made, lead me to believe that this species breeds on the islands of a number of our northern lakes. I hope to be able to settle many facts in connection with the gulls in the near future, which it has been impossible to do up to the present time. The young may be seen at Bigstone lake, Mille Lacs lake and along the Red river as early as the 15th of August in ordinary seasons, and always the last week in October, in considerable numbers. As the Kittiwake Gulls are known to breed "as far south as Bird Rock, in the Gulf of St. Lawrence" (Langille) there can be no valid reason to doubt their doing so in the vicinities referred to in Minnesota. Their food while with us consists of fish, molluscs, aquatic larvæ, and small water snakes.

Samuels (Birds of New England) says, "The nest is composed of seaweeds arranged in a large pile, and placed on a ledge of rock in a crevice, or on a jutting shelf, and is occupied for successive years, receiving additional material every year. The eggs are three in number. Their form is ovoidal; the color varies from a creamy drab, with a very slight olivaceous tint to a delicate gray. On this are scattered blotches of

different shades of brown, and obscure spots and blotches of lilac." They measure usually about 2.20 by 1.60, but often somewhat less.

SPECIFIC CHARACTERS.

Head, neck, entire under plumage, rump and tail, white; back and wings light bluish-gray; the ends of the five outer primaries, and the outer web of the first, black; fourth and fifth have small white tips; bill greenish-yellow; iris reddish-brown; legs and feet brownish-black, with a green tinge.

Length, 17; wing, 12; tail, 6; bill, 1.50; tarsus, 1.25.

Habitat, northern America.

LARUS ARGENTATUS SMITHSONIANUS COUES. (51.)

AMERICAN HERRING GULL.

This beautiful Gull arrives in the lower part of the State about the first of April, and works its way northward so deliberately as to make it not improbable that individuals may be seen almost any spring as late as the 10th of May. None remain in the middle and southern parts of the State through the summer, but there is scarcely a doubt left, in the absence of absolute certainty, that they breed at Mille Lacs lake, and other large northern lakes, within our boundary. Local observers report several different kinds of Gulls breeding on the infrequented islands of those lakes, and Mr. Washburn found from their size abundant reason for believing them to be this species. In his visit to Otter Tail county in the latter part of October he found them at Dead lake in considerable numbers associated with other species of Gulls. "At Lake Mille Lacs," he says "after the wind has been blowing from the east a day or more, these Gulls and the two following species, viz.; *L. delawarensis* and *L. philadelphia*, are plenty along the west shore, flying up and down the beach, and occasionally alighting to pick up soft lacustrine molluscs washed ashore with the weed matter. About two miles from the southwestern shore of the lake lie three barren, rocky islands that are much frequented by Gulls in the breeding season.

"The larger of the three, called Stone island, (Spirit island by the Indians) containing about three-fourths of an acre, and with its top about 20 feet above the surface of the water, affords on its rocky surface a nesting place for hundreds of Gulls."

From about the 20th of September this species begins to appear in the lakes in gradually increasing numbers, the last of

which do not leave us until late in October. While here they spend much of the time in considerable flocks on the middle of the ordinary sized lakes, except during the prevalence of high winds, when they are seen almost constantly on the wing. Dr. Hvoslef reports it as having about the same local history in Fillmore county, and Mr. P. H. Clague, of Herman, Grant county, has long noticed them on the lakes in the vicinity of that place.

The nest is said to consist of dried grass, lichens, moss, small sticks, &c. in profusion, deeply depressed in the center, and contains three olivaceous drab eggs, varying to much lighter shades, blotched and spattered with dark to light brown and faint purple. They vary much in size and measurements, averaging about 2.50 by 2 inches. Many of them are quite indistinguishable from those of the other species of the same genus.

The Herring Gull is a magnificent bird under any circumstances, but especially when leisurely floating upon the wing, turning his head from side to side in his unremitting vigilance to secure his food. As with the entire family, the telescopic vision never fails to spy instantly the merest fragment within possible range, for which it plunges with unerring aim.

In both migrations, embracing a considerable period in the autumn, they are abundant in numbers and flocks, remaining many times until completely frozen out of the lakes and streams that supply them their special food.

SPECIFIC CHARACTERS.

Head, neck, under parts, rump, and tail pure white; back and wings light pearl-blue; first six primaries marked towards their ends with black, which begins on the first about half its length from the end, and is rapidly lessened on the others until it becomes only a subterminal bar on the sixth; primaries all tipped with white; on the first quill it is about an inch and a half in extent, crossed near the end by a black bar, on the second quill there is a round white spot on the inner web near the end; secondaries and tertiaries broadly ending with white; bill bright yellow, with an orange spot near the end of the lower mandible; legs and feet flesh color; iris white. (Young, mottled with light grayish-brown and dull white; primaries and bill brownish-black, latter yellowish at base.)

Length, 23; wing, 18; bill, $2\frac{1}{2}$; tarsus, $2\frac{1}{2}$.

LARUS DELAWARENSIS ORD. (54.)

RING-BILLED GULL.

The Ring-billed Gulls have become much more numerous through a gradual increase since my first observation of them in 1857.

They are the most abundant of their family, and extensively distributed over the lacustrine regions of the commonwealth, breeding in all places adapted to their habits. Prof. Clarence Herrick reported them abundantly breeding at Lake Shatek in the southwestern part of the State—Murray county I believe—as early as any were reported to me from remote parts. Within much less distant points, I observed that it was relatively common and within a short period its extensive breeding has been fully known.

They may be seen as early as the 10th of April in forward seasons, but are more frequently later, but at once upon their arrival seem to be as much at home as if no inclement season had driven them southward six months before. At Bigstone, and at Mille Lacs lakes, and doubtless at a large number of other similar lakes amongst the thousands of the State, they breed on the ground, and where available on elevated promontories, but where the country is uniformly flat, as in Grant county where I have been to study their nidifications, they seek sandy shores or even small ponds occasionally, in very infrequented sections. Wherever it is they are gregarious.

Mosses constitute the bulk of the material of their nests, with which there is employed more or less grass, and from continuing to add a little new material every year, the nests often become quite elevated and remarkably conspicuous occasionally after several years.

About the first week in June the work of incubation commences by the daily deposit of a grayish-green egg, until three are layed.

SPECIFIC CHARACTERS.

Head, neck, tail, and under parts, pure white; back and wings light pearl-blue; first and second primaries black two-thirds their length towards the end, the three next quills with the black much less in extent, and on the sixth it is reduced to a subterminal bar; the first quill is black at the end, above which is a broad white band; the second quill black to its tip, with a white spot on the inner web an inch and a half from the end; the other primaries tipped with white; secondaries and tertiaries ending in white; iris, yellow; bill crossed near the

end with a blackish-brown band, between which and the base it is greenish-yellow; tarsi and feet greenish-yellow.

Length, 20; wing, 15; tail, 6; bill, 1.63; tarsus, 2.

Habitat, North America.

LARUS ATRICILLA L. (58.)

LAUGHING GULL.

The Mississippi River valley is a great thoroughfare of migrating birds, some of which pass directly over its sources toward Hudson Bay and still more northern regions. But all migrants must occasionally rest their weary wings, and replenish their empty stomachs, in doing which they leave a local record for the vigilant observer. The present species is one of this class, having been seen and obtained only in migration in the autumn, and nothing more has come within my personal knowledge of its local habits.

Years have sometimes passed without my having seen or heard of them, and then again several will be reported, and I may find one in the hands of the taxidermist, whose shelves have contained one or two of them from time to time, ever since I have resided within the State. Rumors have reached me occasionally in years gone by, that their eggs have been obtained in Cass county, but lacked assurance of their reliability; but more recently I have received a communication from a lady which makes it presumptively possible that the observation is correct. She says, in speaking of a nest found, that the eggs were three in number; ovoidal; grayish-green or drab; blotched and spotted several shades of brown and purple; and measured 2.30 by 1.65 inches.* I am not an expert in larine oölogy, so that the coloration of the eggs has less value to my presumption that the measures, which certainly correspond with those given by the authorities. I believe we shall find it does breed here.

SPECIFIC CHARACTERS.

Head and upper part of neck blackish lead gray, extending lower in front; upper and lower eyelids white posteriorly; lower part of neck, entire under plumage, rump, and tail, pure white; back and wings grayish lead color; the first six primaries are black, beginning on the first about two thirds of its length from the point, and regularly becoming less on the others, until on the sixth, it is reduced to two spots near the end; tips in some specimens white and in others black to their

* Letter from Miss Loveland, 1860.

points; bill, and inside of mouth dark carmine; iris bluish-black; legs and feet deep red.

Length, 18; wing, 13; tail, 5; bill, 1 $\frac{1}{2}$; tarsus, 2.

Habitat, Texas to Maine, and Middle American Pacific Coast.

Dr. Coues in his *Birds of the Northwest* (p. 651) discredits my report of the observation of this species, made to the Minnesota Academy of Natural Sciences in 1874. With just as much reason he will discredit my reaffirmation now (as he has done in the case of the Orchard Oriole in the same work) but "the world still moves" and facts remain just as stubborn as ever before he compiled that very valuable work.

LARUS PHILADELPHIA (ORD). (60.)

BONAPARTE'S GULL.

This beautiful little bird of its tribe reaches the principal portions of the State early in April, the 10th being my own earliest record, but it is often reported several days earlier at Lake Shatek in Murray county, and in other more southern localities. Individuals are seen as late as the 25th of May, and there are the best of reasons for believing that some of them at least breed on the islands of the larger inland lakes of the northern counties and along the shores of Lake Superior. Gulls are known to breed in considerable numbers in those localities, their nests having been observed while occupied, and this species corresponds to the general size and more ostensible markings as popularly described by residents and unscientific hunters who have resided in those sections for many years. The earlier representatives reach the section where my own opportunities are greatest often in the latter part of August, and individuals are met occasionally as late as the 5th of November, all of which would point to the probabilities of the presumptions mentioned. Mr. Washburn found them relatively common at Mille Lacs lake and Dead lake late in October. He says "This graceful little Gull was seen almost daily at Dead lake, and at other lakes throughout the country; sometimes a single bird, more frequently a pair, or a flock of six or eight. When one bird is wounded, or killed, the rest hover for several minutes over the unfortunate comrade, when several may be secured." For many years after coming to this State I believe that none of the Gulls bred within its borders, but imperfect observations led me slowly to the conviction that this species did so to a limited extent on the shores of Lake

Superior; but it has only been within a few years that I have felt any measure of assurance that they also breed about some of the inland lakes.

SPECIFIC CHARACTERS.

Head and upper part of neck grayish-black, this color extending rather lower on the throat than on the neck behind; lower part of neck, under plumage, rump, and tail, white; back and wings clear bluish-gray; first primary black on outer web; inner web of the same, both webs of the second, and the outer web of the third, white; inner web of the third, and all the other primaries the same color as the back; the six outer primaries have their ends black for the extent of about one inch on the central ones, but less on the first and sixth, and they are tipped with white slightly; shoulders, anterior borders of the wings, and outer webs of the primary coverts, white; bill deep black; inside of mouth carmine; iris hazel; legs and feet orange, with a reddish tinge.

Length, 14.50; wing, 10.50; tail, 4.35; bill, 1 $\frac{1}{8}$; tarsus, 1.25.

Habitat, whole of North America.

STERNA TSCHEGRAVA LEPECHIN. (64.)

CASPIAN TERN.

Until within a few years I have believed this Tern was only a rather common migrant, but I have the evidence that the species remains through the summer in many localities. Mr. Lewis entertained this belief as long ago as in 1876, having found the young birds in a visit to Polk county in July. It has been my privilege to do the same at a little later date, yet presumably too early for the migration of the young, and I am therefore entertaining the confident expectation of finding the nest in due time.

Usually, about the first of May, or possibly a little earlier, the Caspian Tern makes its appearance, and for only a short time is seen passing rapidly from lake to lake in search of its favorite food, the fresh-water mussels, with which the margins of the marsh-land streams and lakes abound. The flight is a marvel of gracefulness, ease, and unwearied maintainance, never failing to arrest the attention of any one at all interested in the birds. There is no marked difference in their numbers in the autumnal southward movement, which commences generally about the 20th of September, at which time, however, individuals continue to be seen occasionally about the larger lakes like Mille Lacs, Red lake, Shatek, etc., until near

the same date in the following month, or even a little later, when they are found to have disappeared entirely.

SPECIFIC CHARACTERS.

Forehead, crown, sides of head, and occiput black, glossed with green, which color extends below the eyes and under which is a narrow white line; back and wings light bluish-ash; the six outer primaries dark slate-gray on their inner webs; quill shafts white; tail and its upper coverts grayish-white; neck and entire under plumage pure white; bill and inside of mouth bright vermilion; legs and feet black; bill very stout; tail not deeply forked. In the young the back, wing coverts and tail are mottled and barred with blackish-brown.

Length, 22; wing, 17; tail, 6; bill, 3.

Habitat, North America generally.

STERNA FORSTERI NUTTALL. (69.)

FORSTER'S TERN.

I was much gratified, after long waiting and fruitless endeavor to find whether this species of Tern ever reared its young within our State, to have a clutch of the eggs sent to me from Douglas county. Poaching collectors had many times claimed to have obtained them, but their finds, with a few generous exceptions, have contributed very little to local natural history or a sense of personal obligations. Their exceedingly brief appearance, beginning about the 25th of April and lasting but a few days, comparatively, led me to apprehend that the instinct of incubation was indicating the proximity of their summer habitat, which ever kept me in expectation that it would ultimately be found near at hand. The nest was reported to have been located on a muskrat house entirely surrounded by water, and consisted of a moderate quantity of reeds and coarse grasses, very slightly hollowed, and contained three eggs, which were not pointed at the smaller end like some others of the same family but were decidedly ovate, light brown with a wash of palest green, blotched and spotted with dark brown, was more marked at the larger end. The average measure of the three was; 1.75 by 1.12. It was obtained June 7th, and the eggs were apparently fresh.

SPECIFIC CHARACTERS.

Upper part, sides of head to a line just below the hind neck, black; back and wings bluish-gray; primaries grayish-white on the outer webs and dusky-gray on the inner next the shaft, and over the entire web at the end; darker on inner

margin, the remaining portion of inner webs white; tail bluish-gray, except the outer web of the outer tail feather which is white, the inner web of this feather blackish-gray for about two inches from the end; rump white with a slight tinge of pale bluish-gray; sides of head, throat, and entire under surface, white; bill orange-yellow at the base, black near the end, with the tip yellow; legs and feet red.

Length, 14.5; wing, 10.50; tail, 6; bill, 1.50; tarsus, 1.

Habitat, North America generally.

STERNA HIRUNDO L. (70.)

COMMON TERN.

From about the 20th of April until the first and second weeks in October this species of the Terns may be occasionally seen, but never in any considerable flocks, as in the same latitude on the Atlantic and Pacific coasts.

For a few days after their arrival, small flocks are met with in the marshes embracing numerous ponds and lakes connected by streams and sloughs, but in a few days they seem to have all gone, yet the presence of one here and there is unmistakable, though even after securing a male on three occasions I have failed to flush the female or discover the nest in the summer months.

The taxidermists generally have an individual or two in their collections which they confound with two or three other species as classified now, but can give no intelligent account of where, when, or under what circumstances they were obtained. I know nothing more of their local habits or their distribution. Their usually accepted description is:

SPECIFIC CHARACTERS.

Upper part of the head and hind neck deep black, tinged with brown on the front part of the head; back and wings light grayish blue; first primary with the outer web black, on the inner web grayish-black next the shaft, this color increasing in extent towards the end, where it covers the entire web for about one inch, the rest of the inner web white; the next five primaries are hoary on their outer webs, and blackish-gray on their inner next the shaft, and occupying their entire web at the end; margin of the inner webs white; central tail feathers very pale bluish-gray, the other white on their inner webs, and gray on the outer webs, deepening in color towards the central feathers until it becomes blackish-gray on the lateral ones; sides of the head, throat, rump, and under tail coverts, white; breast and abdomen clear, pearl-gray; bill coral-red, black near the end, with the tip yellow; iris hazel;

legs and feet coral red, not so dark as the bill; claws brownish black.

Length, 15; wing, 11; tail, 6; tarsus, 0.75.

Habitat, North America generally.

The galloping herd of itinerant ornithologists who have been in immoderate haste to see their names in print, and enjoy a share of immortality while still warm with enthusiasm, have habitually reported this Tern as not breeding here to any extent, but more careful and long continued investigations of the local history of the species disprove their assumptions. I am now able to say that while they do not breed here to the extent that they do in some exceptional localities like those described by Samuels in his "Birds of New England," p 547, they are fairly common in the northern sections of the State. On the flat country approaching the Lake of the Woods they are numerous all through the season of breeding, although I could not give as much time to securing the eggs while in that region in 1887 as I desired, yet enough were to be readily seen to prove the past assumptions to be groundlessly made. The variations in size were quite striking, but not to be compared with the modifications of the markings.

STERNA ANTILLARUM LESSON. (74.)

LEAST TERN.

I have been not a little surprised that so few individuals of this species have come under my notice during the long years of my local observation, and still more so that amongst so many earnest collectors so very few have been observed. Nevertheless, the species not only come to and migrate through the State in considerable numbers, but the (supposed) eggs have been obtained in several widely separated sections, showing a general but not abundant distribution.

I have said "supposed eggs" because I do not feel entire confidence in their identity for the reason that other Terns were also observed, and the second year's plumage offers many difficulties in identification without any extensive series to compare with at hand.

My infamiliarity with the Gulls and Terns makes me speak with exceptional hesitation. With greater leisure, I hope to be able to speak with more confidence. I will say that I have found very few individuals in the fall migrations that were not in immature plumage, but I seldom fail of getting a portion of the mature in spring.

I find the average time of their arrival in spring through thirty years has been April 27, and almost invariably is then

found along the Mississippi and its principal tributaries within the State.

Later it has fallen under my notice in other localities, but only at considerable intervals. I know nothing of its habits.

SPECIFIC CHARACTERS.

A triangular white spot on the forehead extending to the eye; occiput, crown, and a line from the eye to the upper mandible, deep black; entire upper plumage and wings clear bluish-gray; first two primaries with the outer web and half the inner next the shaft, grayish-black, ends of the same color, inner margins white, the shafts of these two quills black; the other primaries same color as the back with the inner margins white; tail same color as the back except the outer margin of the exterior feather, and the inner webs of the others at the base, where they are white; entire under plumage silvery-white; bill pale orange yellow; iris hazel; legs and feet, light orange-red.

Length, 8.75; wing, 6.75; tail, 3.50.

Habitat, Northern South America, casually more northward into British America.

Later opportunities for more careful observations have enabled me to say that the Least Tern is not the rare bird generally represented, but on the other hand may be called fairly common throughout the later spring and summer till into September, and occasionally a few remain even till the first part of the following month.

Two clutches of the eggs have been brought to me,—one in June, 1887, and the other in July, two years later. They were cream-colored with a grayish tint, and marked with small and larger spots of varying shades of brown, some of which were confluent. One or two gave the least possible suggestion of a lilac wash.

HYDROCHELIDON NIGRA SURINAMENSIS GMELIN. (77.)

BLACK TERN.

Of all the Terns that visit the State this species is the most abundant. Arriving from the 7th to the 10th of May they seem to take possession of the whole commonwealth simultaneously. This remarkable uniformity of their vernal appearance in widely severed localities of latitude I have long observed.

Entirely insectivorous in their food, the first week or ten days after their arrival they are almost incessantly on the wing, in flocks of forty to a hundred, skimming the marshes, now overflowed more or less, and bearing on the currentless waters many kinds of insects, like crickets, grasshoppers, beetles and spiders. Following this they are little seen except early in

the morning or towards evening, as they are engaged in the structure of their nests. These are constructed of such materials as abound about them, usually reeds, rushes, swamp grasses, and moss, and are woven with considerable skill. They are quite uniformly placed on floating debris, consisting of similar materials to that employed in the structure of the nests, although placed occasionally on a buoy of wood or bark. The water in which these masses float is commonly from three to four feet in depth, and completely surrounded by reeds and wild rice. Breeding in communities, it is no uncommon thing to find half a dozen nests very near to each other upon the same float, and a single nest on one so small as to forbid the presence of another. Considerable numbers build by the 25th of May, as I have eggs I obtained before the end of the month, but the larger part of them are deposited after the first of June.

They lay from two to three eggs—occasionally but one—of a smoky-yellow color, thoroughly spotted all over with dark, umber-brown, more thickly in an undefined ring around the larger end.

During the breeding period very little is seen of them, but when the young are sufficiently developed to fly, they may be seen in great numbers flying over not only these reedy marshes, ponds and lakes, but more especially over the dry pastures, hayfields and wheatfields, where insects and grasshoppers are most abundant.

Silent, and apparently without suspicion, flitting here and there like the swallows, often very near without seeming to see one observing them, although he may have a gun in his hand at the time, they spend most of their time in quest of food—that universal stimulus to motion for all animate nature. Few are seen in the country later than the 15th of August, and then invariably it is the adult plumage. I have no record of their presence later than the 19th of August.

In his *Birds of the Northwest*, p. 708, Coues says: "They (the eggs) had to be closely looked after, for they were laid directly on the moist matting, *without any nest in any instance.*" This observation having been made along the borders of my special survey, and in the month of June, by so eminent a naturalist, surprised me greatly until I received a communication from Mr. E. W. Nelson, of Chicago, now of the Smithsonian Institution, who assured me that he had observed the same thing in Cook county, where he resided, but only when

the birds had been disturbed repeatedly. I regret exceedingly that the letter has been mislaid, or I would reproduce the statement in his own language. This is by no means the only instance of which birds have been known to forego the employment of a nest after having been persistently robbed of their eggs by man or beast.

Dr. T. S. Roberts, of Minneapolis, reported to me his discovery of several nests of this species on May 28, 1876; and on the 14th of the following June, Messrs. W. L. Tiffany and John Roberts, of the same place, secured six nests "on a sheet of floating moss, or fresh reeds, in about three or four feet of water, regularly woven of swamp grass, and each containing two or three eggs."

Mr. Washburn found them in July, 1885, "Very common throughout the Red River valley, about large sloughs and lakes,—at Ada, and along Thief river in the vicinity of Mud lake." Their distribution is nearly uniform where the food conditions are found.

SPECIFIC CHARACTERS.

Head, neck, breast, sides, and abdomen, black; lower tail coverts white; under coverings of wings ashy gray; back and wings dark plumbeous gray; the first four primaries grayish-black, with their shafts white; bend of the wing edged with white; tail same color as the back; bill, brownish-black; iris, brown; legs and feet, reddish-brown; length, 9.50; wing, 8.50; tail, 3.50. Habitat, Temperate and Tropical America.

Family PHALACROCORACIDÆ.

PHALACROCORAX DILOPHUS SWAINSON. (120.)

DOUBLE-CRESTED CORMORANT.

While shooting ducks in the spring hunters very soon learn to recognize the more obvious characteristics of this species of the Cormorants; one of these characteristics is the peculiarity of their flight. At the time referred to these birds are in considerable flocks, resembling in the remote distance the larger sized ducks and the black Brant until a good many times deceived, but the observing sportsmen readily discover the identity.

When frequently disturbed by the shooting at the ducks they will occasionally become mingled with them in their flight from one lake to another and are thus brought within easy range of

the guns, when the taxidermists get them for mounting in such numbers as to become a burden, while ordinarily they are a hard bird to obtain, for they are exceedingly shy and vigilant. Except when the water is frozen firmly, there is no time in the year when they may not be seen in almost every general section where the conditions are favorable to their habits of feeding, but their nests are more restricted, and not infrequently are associated with the Blue Herons in their long occupied rookeries. Thousands of people visiting Upper Lake Minnetonka during a period of full 30 years have seen them thus associated on "Crane Island," and the surprise of everybody has been that both the Cormorants and Herons did not abandon the breeding place long years ago. Their reluctance to abandon it, however, has been as great as was that of the Sioux, with the advantage over the aborigines that there were no treaties in the way of their continued possession. The State authorities have discovered the same fact and have tardily recognized the obligation to protect them from weapons of *civilized* warfare. Local observers in nearly all parts of the State report them from "occasional" to "innumerable," according to how near their breeding places the observations have been made, especially after they have commenced preparations for incubation.

The preparations for incubation are made about the 10th of May in large communities, on islands in the lakes and ponds, and almost impenetrable marshes, where are some large, branching trees in which they mostly build their coarse but substantial nests. These are usually bulky from having been added to a little from year to year, and consist of land and water weeds, portions of vines and some sticks, without *much mechanism in their arrangements*, being piled together around a deep depression, in which they lay three pale greenish or bluish eggs, over the surface of which is spread a smear of calcareous material making them somewhat rough to the touch. It is not an uncommon sight to see one or more of their nests on the same tree on which are a number of the herons' nests, with whom they have no neighbor jars apparently. Being principally fish eaters they spend most of the time in the water where their movements in pursuit of their prey are simply marvelous in velocity. With their totipalmated feet folded flatly into mere blades while carried forward and when struck out backwards opening to their utmost, and the half-spread wings beating with inconceivable rapidity, they seem to fly

through the waters at various depths in pursuit of their favorite food, the fish.

By some cormorantic agreement, they distribute themselves for feeding in such a manner as not to trespass upon each other's domain during the breeding time, some individuals of them going many miles away to feed. The females during this period are allowed the nearer preserves and improve only the earlier and later portions of the day to supply their necessities.

When the young are sufficiently grown they gather into immense flocks in infrequented sections, and remain until the ice lid of winter has been closed over their supplies of food when to appearance they do not go away, but are gone like the season—and how, when, and where?

In his communication to me of some observations made in Murray county in 1877, Prof. C. L. Herrick says of this species at lake Shetak: "The upper lake affords nesting places for innumerable Cormorants which are known as black loons." So from all sources, or at least many, including Lanesboro in Fillmore county from which Dr. Hvoslef says: "From April 3d, (1883), about fifty Cormorants were seen at the pond till the 12th of October. About the same date, but two years later, Mr. F. L. Washburn found them at Dead lake in Otter Tail county, fairly common for the species.

SPECIFIC CHARACTERS.

Head, neck, lower part of back and under surface greenish-black; feathers of upper part of back, wing coverts, scapulars and tertiaries, grayish-brown, the margins greenish-black; primaries blackish-brown, lighter on inner webs; secondaries dark grayish-brown; tail black; a line of white filamentous feathers running from the bill over the eye, and a few similar ones distributed over the neck; behind each eye is a tuft of rather long, slender feathers, erect and curving forwards; bare space in the region of the eye and gular sac, orange; upper mandible blackish-brown, with edges yellowish; the lower mandible yellow, marked irregularly with dusky; iris bright green; legs, feet and claws, black, middle toe claw pectinated.

Length, 33; wing, 13; tail, 6.75.

Habitat, Eastern coast of North America, breeding from the Bay of Fundy northward; southward in the interior to the Great Lakes and Wisconsin.

Family PELECANIDÆ.

PELECANUS ERYTHORHYNCHUS GMELIN. (125.)

AMERICAN WHITE PELICAN.

This immense bird usually signals his arrival in the early part of April by his characteristic notes from an elevation beyond the range of vision except under the most favorable circumstances. The sound of those notes is difficult to describe, but unforgettable when once certainly heard from their aerial heights. I have sometimes scanned the heavens in vain to see them, but am generally rewarded for my vigilance and patience if the sky is clear, and if cloudy, also, when I watch the rifts closely with my field glass.

They more commonly are in flocks of from thirty to fifty, rarely more; but when materially less than the former number, the flock has been divided, and they then fly lower. During the incoming migration of the spring of 1864 it was not an unusual thing to have them descend nearly to the tops of the trees, long before reaching a section for alighting. I secured one at that time which was eleven feet in extent and weighed twenty-two pounds. For more than twenty years after I came here to reside they bred in Grant county in a large community. Several of my ornithological friends visited the place from time to time, first of which Mr. J. N. Sandford of Elbow lake, who guided Mr. G. B. Sennett of Meadville, Pa., to the pelicanery subsequently, but after several years' anticipation of seeing it with Mr. Sanford myself, professional duties and ill health prevented, until, persecuted, robbed and mercilessly slaughtered, they finally deserted their ancient dwelling place, since which I have had no reliable evidence that they bred within our borders. It is persistently claimed by duck-hunters that they have renewed their limited breeding, but exactly where, rumor has not decided. I think that there is little reason to doubt that the pelicanery alluded to was the only one within our borders, for wherever these easily identified birds were observed during the period of breeding in the early morning and late in the day, the line of general flight pointed to that same locality. Shortly after their arrival in spring they pair for breeding, after which little is seen of them until late in the autumn, when they begin to flock for their late migration, which time depends entirely upon the

question of the supply of their food, which is mainly small fishes. These are abundant in the shallow streams, borders of the lakes and ponds, until sealed up by the ice. Most writers upon the habits of this unique species speak of the use of the lower mandible and gular sac as a scoop, or dip net, for gathering in their food. This seems possible, and even probable, yet I am compelled to say that while I have often observed their habit of dropping the inferior mandible slightly beneath the surface of the water when the upper one seemed only to rest on it, and thus allow the water to pass into the mouth as they were swimming about in deep as well as shallow water, I have never discovered the slightest evidence of their receiving food at such times. Like their renowned habit of extending their mandibles in a series of yawning like motions when standing upon the land, I have regarded the other as essentially a sort of meaningless diversion. Perhaps to rinse out the gular pouch. I am confident I could not have been mistaken, as my observations were made when the birds were under the most favorable circumstances for being observed, and I have employed a superior field glass while perfectly concealed from their sight. Whether seizing a minnow, or a pickerel weighing three and a half pounds, as in one instance, the fish is grasped transversely, when it is tossed into the air and invariably received with its head foremost in its descent into the pouch.

The sac, or pouch, is a temporary repository in which the food is retained for a longer or shorter period as required for supplies for digestion. The gular sac has no element of "a dip-net for catching prey", having no outlet for the water "shipped," not even the pectinated rami of the bill of several species of ducks. They are well known to seize great quantities of fish upon occasion, and it is equally well known that their stomachs are relatively exceptionally small. The sac is therefore an inexorable necessity for transportation in their prolonged flights over frozen lakes and rivers, and has been found on repeated occasions in possession of from one to several fishes. One at least of the purposes of the sac cannot be questioned.

In the latter part of May the old nests are slightly repaired or added to of such materials as are easily obtained, and the three to four eggs laid. They are very rudimentary, consisting usually of dirt scraped together and overlaid with coarse reeds, moss, &c., and are located quite near each other in close

proximity to water, with little attempt at concealment. The length of time after hatching before the young are taken to the water I have not reliably ascertained.

SPECIFIC CHARACTERS.

General plumage, pure white, (in breeding season with a roseate tinge); crest and elongated feathers on the breast, pale yellow; alula, primary coverts, and primaries, black, the shafts of the latter, white for the greater part of their length, and brownish-black at the end; outer secondaries, black, the inner more or less white, the shafts of all white underneath. Bill, yellow, with the edges and unguis, reddish; upper mandible high at the base, but becoming gradually flattened to the end; on the ridge just beyond the middle of the bill is a thin, elevated bony process about one inch high, and extending towards the end for three or four inches; lower mandible broad at the base, with the crura separated nearly to the point, underneath the lower mandible, beginning at the junction of the crura and extending down the neck about eight inches, is a large membranous sac, or pouch, capable of great expansion, of the same color as the bill; bare space around the eye, bright yellow; iris, white; legs and feet, yellow; claws, yellowish-brown. The female differs only in the absence of the bony projection on the upper mandible.

Length, 70; wing, 24.50; bill, 18.50; tarsus, 4.75; tail, 7.

Habitat, Temperate North America.

NOTE. I have no record of the earliest instance of their nesting, but generally it takes place in the latter days of May, several having been reported by the twenty-fifth. Some have been known to occur even after the first of June. The nests are very rudimentary, consisting in most cases of the dirt and debris found at the place selected, which is on alluvial lands quite near the water. There seems to be no attempt at concealment whatever usually, and they will endure a great deal of disturbance from intruders before they will finally abandon the spot chosen for incubation. From two to four white eggs constitute the "clutch," and the male shares the duties of the lengthy incubency, as it would seem to be the conjugal duty of all male birds, yet unfortunately some come very far short of it. I have often conceived that the female cow-bird laid her first egg in another bird's nest because her mate refused to share her sacrifices. Later facts, and many isolated circumstances have somewhat modified my opinions as to their abandoning the State for incubation.

Prof. Herrick, who is quite familiar with the bird life of Murray county, expresses himself as confident that they breed about Lake Shetak, and later Mr. F. L. Washburn, (now professor at Corvallis, Oregon, I am informed), mentions some circumstances in his correspondence that Lake Traverse and many other localities in the northwestern parts of the State have been adopted as breeding places by the Pelicans. He states

that in 1885, from some cause not quite certain, they sought new breeding quarters, having deserted the famous grand pelicanry "for many isolated localities never before occupied." Mr. Armstrong, of Herman, Grant Co., "found a solitary nest near the town containing two eggs." Certainly these circumstances justify the conclusion that the Pelicans have not yet deserted Minnesota as a breeding place.

PELECANUS FUSCUS L. (126.)

BROWN PELICAN.

Reasonably credible rumors from three different localities on the western borders of the State add one Brown Pelican each to the list of straggling visitors within our borders. I am very familiar with them in sections where they abound, but have never seen any within my present province.

Order ANSERES.

Family ANATIDÆ.

MERGANSER AMERICANUS (CASSIN). (129.)

AMERICAN MERGANSER.

This is the largest species of the true Fish Ducks. They reach the larger lakes somewhat before the disappearance of the ice. A narrow border may have yielded to the advancing sun and invited the fish from under the frozen canopy into its grateful rays, and thus offering the ducks their chosen food in abundance, but if they have counted upon such a repast they are liable to great disappointment, for the retreating cold often returns with a vigor that closes again every opening in the ice of the still waters of the lakes and ponds, when the premature invaders will be compelled to seek their supplies in the swift currents of the streams and rivers. At the time of their spring migrations, they appear in considerable flocks, and no inconsiderable numbers are killed by persons unfamiliar with their habits, and ignorant of their valuelessness for food, at least such was formerly the case; but since the country has become more extensively occupied by settlement, and been cultivated along the shores of their former haunts, they have disappeared from the more frequented lakes, and are now seldom seen except in the remoter districts. There they still breed in comparatively fair numbers. They place their nests in the forks of dead trees of the forest bordering the water where the banks are low and flat, or upon ledges of rock overhanging the water, in extremely secluded places. The nest consists of grass, leaves, moss, etc., over which are placed their own feathers in sufficient quantity for warmth to be easily maintained while incubation is in process. The eggs are about ten in number, and are of a cream white color, that varies in different eggs of the same nest. In earlier days,

when they bred in my own county, I found the young on the ponds and small grassy lakes as early as the first week in June, and as late as the last week of July, which warranted the presumption that they rear more than one brood each year.

Their food consists of fish, mussels, and occasionally the stems and roots of aquatic vegetation. The flight of the Mergansers, or Shelldrakes, as they are more commonly called in this country, is not very unlike that of the Mallard, yet easily distinguished by experienced sportsmen at a considerable distance. Although they have become quite rare in the southern they are more readily found in the northern portions of the State, where there are extensive are as yet wild enough to meet all the requirements for their food and reproduction. They linger in small family flocks in autumn as late as an abundant supply of food is obtainable, and move away southward in the night.

SPECIFIC CHARACTERS.

Feathers of the forehead extending on the bill in an acute angle for half the distance between those on the sides and nostrils; outline of those on the sides nearly vertical, and reaching but little beyond the beginning of the lower edge of the bill, but as far as those on the side of the lower jaw; nostrils large, far forward, their middle opposite the middle of the commissure. Head and neck green; fore part of back black; beneath salmon color; wings mostly white, crossed by one band of black; sides faintly barred transversely.

Length, 26.50; wing, 11; tarsus 1.85; commissure, 2.90.

Habitat, North America generally.

;MERGANSER SERRATOR (L.). (130.)

RED-BREASTED MERGANSER.

This Merganser cannot be regarded as a common resident, yet I have found it breeding within a few miles of both Minneapolis and St. Paul, and it is known to do so in several localities to the west of our great timber belt, as in the vicinity of some small lakes embraced in that forest. They arrive with the earlier game ducks, and are frequently shot under the supposition that they belong to that class. As with the other species of local ducks, they do not continue long in flocks, but shortly pair off and resort to the more favorable sections for breeding, where they build large, bulky nests on the ground. The nests consist first of rushes, reeds, coarse weeds and

grasses, with some roots. Over these is the true nest, composed of fine roots chiefly, which is covered with a layer of feathers. They lay about ten, light, dirty, drab colored eggs. I have found but one while employed for nidification, although several have come to my notice by finding the fragments of shells associated with them. The young birds were in the water of a draining ditch on the 9th of June. The species is abundantly reported in both migrations, yet only a very few individuals have seen these ducks during the summer, for the obvious reason that, like all other locally breeding ducks, they are rarely found on the wing. Hence Mr. Washburn's statement that he found the species rather rare in the Red River valley in July and August. They remain till very late in November, and occasionally all winter, as I have repeatedly seen them in open rapids on spring fed streams and the Mississippi.

SPECIFIC CHARACTERS.

Feathers of the forehead extending on the bill in a short, obtuse angle, and falling far short of the end of those on the sides; the outline of the latter sloping rapidly forwards, and reaching half way from the posterior end of the lower edge of the bill to the nostrils, and far beyond those on the side of the lower jaw. Nostrils posterior and narrow, their posterior outline opposite the end of the basal third of the commissure. Head with a conspicuous, pointed, occipital crest. Head and upper part of neck all around dark green; under parts reddish-white; jugulum, reddish-brown streaked with black; sides distinctly barred transversely with fine lines of black. Feathers anterior to wing white, margined with black. White of wing crossed by two bars of black.

Length, 23.25; wing, 8.60; tarsus, 1.80; commissure, 2 75.

Habitat, Northern North America.

LOPHODYTES CUCULLATUS (L.). (131.)

HOODED MERGANSER.

Undisturbed in the quiet solitudes of its favorite feeding places, especially during the mating season when the time is more devoted to courting, the male of this species of ducks has no peer for regal beauty in its family except the always to be excepted male Wood Duck, (*Aix sponsa*). It is a permanent resident, finding open water enough through the severest winters to make its supply of fish-food possible. On the coldest days I have many times observed it feeding in the rapids at the foot of the falls of St. Anthony. At such times

they may occasionally be seen flying further up or down the river in small parties.

Once in January, 1874, when the mercury had descended to forty degrees below zero while a north wind was blowing terrifically, I saw a flock of six of this species flying directly into the teeth of the blizzard at their ordinary velocity of not less than ninety miles an hour. The compactness of their flocks of half a dozen to fifteen in their flight is characteristic, and their directness fully equal to that of the Green-winged Teal, (*Anas caros inensis*). About the third week in April, or a little later, they disperse for incubation. They build their nests but a short distance from the water, and like the Wood Duck, in the hollows of trees, or upon the stubs of such as have been broken off by the wind. One discovered by a duck-friend of mine (to the location of which he called my attention many years since) was placed in a hollow cavity rotted out of a leaning trunk some forty feet from the ground, and consisted of weeds, grass and feathers, the latter completely concealing the others. It contained thirteen perfectly white, subspherical, thick-shelled eggs, that averaged 2.12 by 1.70 in measurement. In one instance, a lady sharing my interest in birds and game, while rowing with me, noticed what we supposed to be a Wood Duck carrying her chick by the neck from a tree into the water. We waited in vain some time to see if the bird would not bring another young one. Reaching the middle of the small lake, we saw the duck, by the aid of the field-glass, resume the loving task, and discovered the bird to be a female of the species under consideration. This was on the 18th of May. Mr. Treganowan found the baby birds in Becker county, on the 17th of August, showing that in one instance at least, a second brood presumptively was brought out in the same season. I am not confident that this is universally the case however. The food at this time embraces fish, molluscs, and aquatic insects. With the crest fully extended, the male of this species, as already intimated, presents a most beautiful view when swimming leisurely on the undisturbed water, under the deep shadows of the envioning woods. He takes none of the burdens of incubation upon him, but at that time hides himself away between the narrow banks of some solitary stream abounding with small fish, to resume in due time his place at the head of his well developed family. Like the other fish ducks, they stay as long as the ice will let them on the shores of the lakes, whence they go to open rapids, and late in November mostly drift more

southward. According to Mr. Washburn, this species is very common at Lake Mille Lacs, and Dead lake. Dr. Hvoslef finds them in February at Lanesboro, Fillmore county, in open places in the Root river. Mr. Edward A. Everett, of Waseca, reports them in January. Indeed, there are no sections where the birds have been looked after by competent observers which do not give reports of the Hooded Merganser. It must not be inferred that they are as numerous a species as some others breeding here, but they may be said to be common residents, large numbers of which go further north still to breed and further south to winter.

SPECIFIC CHARACTERS.

Head with an elongated, compressed, circular crest; anterior extremity of nostril reaching not quite as far as the middle of the commissure; frontal feathers extending nearly as far as half the distance from the lateral feathers to the nostril; the latter much beyond the feathers on the side of the lower mandible. Bill shorter than head. Bill, head, neck, and back, black; center of crest and under parts white; sides chestnut-brown, barred with black; anterior to the wing white, crossed by two black crescents; lesser coverts gray; speculum white with a basal and median black bar; tertials black, streaked with white centrally.

Length, 17.50; wing, 8; tarsus, 1.20; commissure, 2.

Habitat, North America generally.

ANAS BOSCHAS L. (132.)

MALLARD.

When the comfortless days of March have long delayed the departure of the winter, and the great lakes, and the little ones too, begin to show a liquid margin into which sundry reptiles and fishes have come to catch the first warm rays of the advancing sun, we look for the ducks to return, and first of all generally, the Mallards. And should a sharp thaw be attended by a warm rain, we never look in vain. The avaut couriers consisting of members of this species will more than likely form the largest flock of the entire season, and will come along the cloudy curtains of the horizon after the manner of wild geese, but with less of the wedge-shaped order of flight of the latter and their ostentatious honkings. Sweeping around in circles, the radius of which is many miles in extent, examining the various streams and lakes for the larger openings in the ice, they suddenly dip down to one as if to alight, when as abruptly they rise again and sweep away to another with a few

quacks of mutual advisement, or perchance of disappointment, and are soon out of sight. In half an hour they are back again to drop, one after another, into the open water of the very lake beside which we may be carefully concealed. Here, if undisturbed, they will spend the remainder of the day, but when the night has come they quietly fly away to the meadows and growing wheat fields or the oak openings where the mast is an assured supply for their repast. At the earliest dawn of the coming day, they return to the lakes for rest, mussels, aquatic vegetation and security. As they breed extensively in nearly every portion of the State adapted to their reproductive and food habits, little difficulty lies in the way of learning their characteristic habits. I find that as a general thing their nests are completed and occupied by the 15th to the 20th of May. As they deposit from ten to twelve eggs, and supposedly never more than one in the same day, it is pretty near the first of June before they are fully installed in the essential work of incubation. Only rather coarse weeds and grasses are employed in the structure of the nest, but it is lined with their own down liberally. The eggs are of a dirty, greenish-white color. The location of the nest may be on the veriest margin of the land near the water, concealed in the reeds and rushes, or a mile away, perhaps on the open prairie, hidden by the rank, unglazed tuft of grass which may be seen at a considerable distance. And again it is no unprecedented thing to find it amongst the coarse bushes on a wooded hillside. The ducklings are taken to the water in a short time where the brood may often be found without much difficulty, except the sacrifices of an early rising in the morning. They linger in the State until quite in autumn, growing and fattening on the wild rice, mast, and extensive waste of the wheat fields. In the latter place they are often in immense flocks, where the hunters are congregated for their destruction as late and early as the law allows them to maintain their slaughter. As matters have been for many years, their number must have become greatly reduced, and therefore we may well rejoice that our legislature has provided some long needed protection to them. To instance, not one alone of "crack sportsmen," but many from abroad as well as at home have boasted of having killed three and four hundred in a fall shooting, and in a single instance upwards of one thousand. This is truly duck murder. Thirteen thousand meandered, and therefore recorded lakes

and ponds, including all of the wild rice marshes, and wheat fields, will prove inadequate to maintain the supply at this rate. Thanks for legislation though late.

SPECIFIC CHARACTERS.

Head and neck bright grass-green, with a violet gloss, top of head duller; a white ring around the middle of the neck, below which, and on the forepart and sides of the breast, the color is dark brownish-chestnut; under parts and sides, with the scapulars, pale gray, very finely undulated with dusky; the outer scapulars with a brownish tinge; forepart of back reddish brown; posterior more olivaceous; crissum and upper tail coverts black, the latter with a blue gloss; tail externally white; wing coverts brownish-gray, the greater coverts tipped first with white, and then more narrowly with black; speculum purplish-violet, terminated with black; a recurved tuft of feathers on the rump; iris dark brown.

Length, 28; wing, 11; tarsus, 1.70; commissure, 2.50.

Habitat, northern parts of northern hemisphere.

ANAS OBSCURA GMELIN. (133.)

BLACK.

My first local observation of the Black Ducks began in the spring of 1862, during the spring migration. They were associated with the Mallards, and were exceedingly shy, a single one in the flock often proving a sad defeat to the sportman's purposes towards the other species. A few usually find their way into the game markets, in both migrations, and it is seldom that a season passes in which I have not observed their presence in one or both migrations. They are never abundant, indeed they are rather rare, and in small flocks in the spring migrations which are somewhat larger in the autumn. I have never counted more than 15 in a single flock, and more commonly not to exceed half a dozen. I had been told that they bred in the southern and western sections of the State long before I had an opportunity to corroborate the statement, but I have long since found them doing so in the valley of the Minnesota river, and in Kandiyohi county. Their nests were in a tussock of rank grass or reeds, in a marsh which had been overflowed during the prevalence of high water in spring, and in one instance was found as early as the 15th of May with three eggs in it. Another was shown me by a citizen who resided but a short distance away, containing ten, greenish-brown eggs. This was May 27th, which seems to indicate about the same period of nesting as for the former. Their food in

spring consists largely of aquatic larvae, and of molluscs with the succulent roots of fresh water vegetation; and in the autumn of wild rice and domestic grains, to which should be added considerable mast after the acorns have fallen. They seldom resort to the smaller lakes and ponds after raising their broods, but are found in the larger ones, and notably in the vicinage of timber lands. Their distribution is not uniform by any means, and about as difficult to ascertain as that of a great number of avian species as sparingly represented. What proportion of them go further north to breed it is difficult to even conjecture, but doubtless much the larger. They disappear in the fall migration somewhat earlier than do the Mallards. I ought to have said before that the nest is a large, compact one, and constructed of grasses and weeds, over which are imposed the duck's own feathers.

SPECIFIC CHARACTERS.

Bill greenish; feet red; body generally blackish-brown; the feathers obscurely margined with reddish-brown; those anteriorly with a concealed V-shaped mark, more or less visible on the sides of the breast; head and neck brownish-yellow, spotted with black; top of the head and nape, dark brown, with a green gloss on the sides behind; wings dull blackish, with a dull greenish gloss; speculum violet, terminated with black; inner tertials hoary gray towards the tips; axillaries and inside of wing white; tail of eighteen feathers; iris dark brown.

Length, 22; wing, 12; tarsus, 1.80; commissure, 2.56.

Habitat, eastern North America, west to Utah and Texas.

ANAS STREPERA. L. (135.)

GADWALL.

No species of the Duck family is a more regular resident, often reaching the State by the 25th of March, and found on favorite streams late in November. They are quite a numerous species and fly in compact flocks of about a dozen, rarely more, which is easily recognized by the experienced gunner at considerable distance by the distinctive character of their movements on the wing. Like the Mallards and many other species of the ducks, they live upon aquatic plants, both blades and roots, larvae, water beetles, mollusks, wild rice, and the various grains of the farmer's fields, to get which they fly long distances both at night and during the day.

The nests are found on the ground, in marshes skirting

streams of running water, and are composed of weeds, sticks, grasses, and rushes as the location conveniently supplies them. The eggs, eight to ten in number, are rather of a cream-white, at least would be but for the dirt imparted by the soiled feet of the brooding female.

As is the case with nearly every species of the family breed in the State, the distribution is subject to extreme variations from year to year. In a local scarcity of Ring-necks and Scaups, for instance, this species will abound during one season which may be followed in the next by its almost total absence, while one of those mentioned, or almost any other, may be in force in any single section. This circumstance applies equally with the Mallard.

The relative abundance of species may be best studied in the return of expert duck-hunter's bags.

In the hunting season there are few portions of our State where some of this species are not found. It has not yet been my fortune to see the nest and eggs *in situ*, but I have the latter in my collection obtained within a few hours ride of my home by Mr. E. L. Hood, an expert oölogist in my employment.

Incredible numbers of this species are slaughtered for the fall market and are regarded only second to the Mallard in value for the table. It is a gamy duck and flies promptly at the approach of danger; is an exceptionally good diver and rapid swimmer. It wanders a long distance from the water for nuts, acorns, etc., in the cloudy, windy days of November. They retire from this latitude generally during the last week in October.

SPECIFIC CHARACTERS.

Head and neck brownish-white, each feather spotted with dusky; top of head tinged with reddish; lower part of neck, with forepart of breast, and back, blackish, with concentric narrow bars of white, giving a scaled appearance to the feathers; inter-scapular region, outermost scapulars, and sides of body, finely weaved transversely with black and white; middle wing coverts chestnut, the greater, velvet-black, succeeded by a pure white speculum, bordered externally by hoary gray; innermost scapulars with a reddish tinge; crissum and upper tail coverts black; longest tertials hoary plumbeous gray; inside of wing and axillaries pure white; bill black; iris hazel.

Length, 22; wing, 10.50; tarsus, 1.65; commissure, 2.04.

Habitat, United States. Nearly cosmopolitan.

ANAS AMERICANA GMELIN. (137.)

BALDPATE.

In the spring of 1864 the Baldpates were more numerous than any other species migrating along the Mississippi through Minnesota.

It was observed by sportsmen and universally commented upon as most remarkable in the history of duck-shooting. The following year only a few were met with in the same localities, and never since as many relatively, but some years they are common while scarce in others. Subsequently, by extensive conference with intelligent and observing sportsmen, and a close watch of the markets, I satisfied myself that the variation in local numbers was balanced within the longitudinal boundaries of the State; that when scarce along the region drained by the Mississippi they were abundant along that of the Minnesota river, and *vice versa*, through the following years.

It has been a common observation that the Baldpates and Pintails almost uniformly arrive more or less commingled, which is also the case in their autumnal migrations. Both species arrive a little later than some others, and are seldom found in the larger lakes, but in the ponds and streams. Their food consists largely of roots of various aquatic plants. The Baldpates breed on the extensive marshes of the northern counties of the State, where Mr. Lewis and Mr. Treganowan found them in June and July. The nest possesses no distinctive characteristic and contains variously from six to twelve dirty, cream white eggs.

Mr. Washburn found it common and breeding at Otter Tail and Thief river. Dr. Hvoslef notes its arrival in Fillmore county from the 12th to the 20th of April, but says nothing of its breeding there, nor have I seen its nests in the section of my greatest opportunity for personal observation. I found it already beginning to be common in Grant and Big Stone counties late in August.

SPECIFIC CHARACTERS.

Tail of fourteen feathers; bill blue, the extreme base and tip black; head and neck pale buff, or faint reddish-yellow, each feather banded narrowly with blackish, giving the appearance of spots; top of head from bill, pale unspotted creamy-white; sides of head from around the eye to the nape glossy-green, the feathers however, with hidden spots, as described;

chin uniform dusky; forepart of breast and sides of body light-brownish, or chocolate-red, each feather with obsolete grayish edge, rest of under parts pure white; crissum abruptly black; the back, scapulars and rump, finely waved transversely anteriorly with reddish and gray, posteriorly with purer gray on a brown ground; a little of the same waving on the sides also; lesser wing coverts, plain gray; middle and greater, conspicuously white, the latter terminated by black, succeeded by a speculum which is grass-green at the base, and then velvet-black; tertials black on outer web, bordered narrowly by black, the outermost one hoary-gray, externally edged with black; tail hoary-brown; upper coverts black externally; axillars white; iris hazel.

The blackish chin appears to be found only in very highly plumaged birds, and the top of the head is sometimes pure white.

Length, 22; wing, 11; tarsus, 1.40; commissure, 1.08.

Habitat, North America.

ANAS CAROLINENSIS GMELIN. (139.)

GREEN-WINGED TEAL.

When the first flock of Ducks of the spring has arrested the attention of the amateur, or the keen eyed sportsman, he looks for the two Teals next. And that well trained eye knows each of the two species at a glance by its flight. Within the duck kingdom the Green-wings have no equal in speed on the wing, and only one superior for beauty. A little incident in my personal experience, gave me a realizing sense of the former. On an occasion when duck-shooting in a pass, not many miles from my home, I was standing behind a bush as high as my head, when I discovered a flock of this species coming from another lake. So directly were the ducks coming toward me that they seemed to be only poising on their vibrating wings when I fired at the leader, and his head dropped instantly, for he was as dead as he ever could be, and mine dodged to one side just in time to have the plumage of the bird brush my ear as it went by like a ball from a steel eight pounder, and only reached the ground at a distance of a hundred and fifty feet beyond. It has been said that the Green-winged Teal flies at a velocity of one hundred and sixty miles an hour. Judging it by that incident, I am ready to believe the estimate none too high. In 1876, they reached nearly every portion of the State on the 5th of April, as reports from most of them subsequently attested. But I have records of my own showing of their arrival as early as the

17th of March. Their distribution for breeding, becomes considerably restricted, but varies in the choice of localities in successive years. In the one first alluded to their nests were found in several places in Hennepin county, but in the next I could find or hear of none. In later years I found them breeding along the Minnesota bottoms and in the marshes along Minnehaha creek, which constitutes the outlet of Lake Minnetonka.

Mr. Washburn found them "rather common, and breeding at Otter Tail and Mille Lacs," in 1885. The nest is formed of weeds, sedges and grasses, lined with considerable down. Eight to ten eggs are usually laid, of a dingy creamy-white color. It is almost a strictly vegetable feeder, wandering some considerable distance from the water in search of berries, nuts, wild rice, etc.

SPECIFIC CHARACTERS.

Head, and neck all around, chestnut; chin black; forehead dusky; region round the eye continued along the side of the head as a broad stripe, rich green, passing into a bluish-black patch across the nape; under parts white, the feathers of the jugulum with rounded black spots; lower portion of neck all around, sides of breast and body, long feathers of flanks and scapulars, beautifully and finely banded closely with black and grayish-white; outer webs of some scapulars, and of outer secondaries black, the latter tipped with white; speculum broad and rich green; wing coverts plain grayish-brown, the greater coverts tipped with buff; a white crescent in front of the bend of the wing; crissum black, with a triangular patch of buffy white on each side; lower portion of the green stripe on each side of the head blackish, with a dull edge of whitish below; iris brown. Sometimes the under parts are strongly tinged with ferruginous brown.

Length, 14; wing, 7.40; tarsus, 1.15; commissure, 1.68.

Habitat, North America generally.

ANAS DISCORS L. (140.)

BLUE-WINGED TEAL.

No other species of the Ducks is so cautious upon its arrival as the Blue-winged Teal, a trait by which the old hunter determines its identity at once. In parties of eight to ten or a dozen, they will circle around, descending again and again only to rise again and go further up, or lower down the stream, to repeat the same demonstrations of indecision, many times over, and just as unexpectedly they suddenly drop out of sight

between the treeless banks. They are, as a general thing, several days later in their spring arrivals, and as much earlier than the Green-wings in autumn. This is not true in every migration, for I have once or twice known them to come a little before the other, and several times simultaneously; but in my observations extending over many years in succession, it has proved a noticeable characteristic in its migrations. They are seldom seen on the large clear lakes; but on small ponds, mud flats, and sluggish streams where various pond weeds and aquatic roots afford, in abundance its favorite vegetable food. Nesting late in May and early in June, they rear only one brood so far as I have been able to ascertain. The structure is uniformly of grasses, lined quite liberally with down from the female's own breast and is more commonly placed on dry ground at least a hundred yards from the nearest water. It is best found by carefully distinguishing the obscure path at the water's edge, and tracing it to its unsuspectedly remote seclusion. The search may prove the path to have been the beaten runway of the muskrat to some other pond, but may afterwards be distinguished by its having been so much more frequented and soiled.

The eggs are of the same general color as the Green-winged Teals, namely, a dull, dingy, cream-white, and are a little smaller in size, and about ten in number. Like the other species they fly in very compact flocks of a dozen or less, and at a terrific speed, only excelled by one other amongst all the ducks known. Tenderest of all, they retire southward earliest in the autumn, so that sometimes all have left the country by the 25th of October, or first of November. They are found breeding in every part of the State in different seasons.

SPECIFIC CHARACTERS.

Head and neck above plumbeous gray; top of head, black; a white crescent in front of the eye; under parts from middle of neck, purplish-gray, each feather with spots of black, which become more obsolete behind; fore part of back with the feathers brown, with two undulating narrow bands of purplish-gray; feathers on the flanks, banded with dark-brown and purplish-gray; back behind and tail, greenish-brown; crissum, black; wing coverts and some of the outer webs of the scapulars, blue; other scapulars, velvet-black, or green streaked with pale reddish-buff; speculum, glossy-green; outer greater wing coverts, white, as are the axillaries, middle of under surface of wing, and a patch on each side of the base of the tail; bill, black; feet, flesh-colored; iris, dark-hazel.

Length, 16; wing 7.10; tarsus, 1.20; commissure, 1.85.
Habitat, North America generally.

Later observations have convinced me that as a species they breed much more extensively throughout the State than does the Green-winged Teal. In the lacustrine portions, like the counties in the northwestern division of the Commonwealth as well as in the southeastern, I have the fullest assurances from my local observers to justify the opinion. I have found them doing so in five or six localities in my own county, (Hennepin.)

ANAS CYANOPTERA VIEILLOT. (141.)

CINNAMON TEAL.

On a few occasions since I have resided in the State I have found one of these beautiful ducks amongst others brought into the markets by hunters from the head waters of the Red river. On one such occasion my attention was specially called to "a hybrid duck" that proved to be one of these. I have been accustomed to seeing them in Lower California, where they are at home the year around. Of course those seen are rare stragglers, but as an occasional individual may continue to be seen, I will reproduce their brief description.

SPECIFIC CHARACTERS.

General color a rich, dark purplish chestnut; top of head, chin and middle of belly, tinged with brown; crissum, dark-brown; fore part of back, lighter with two or three more or less interrupted concentric bars of dark brown; feathers of rump and tail, greenish-brown, the former edged with paler; wing coverts, and outer webs of some scapulars, blue, others dark velvet-green, streaked centrally with yellowish-buff; edges of wing coverts, white, as are the axillaries and middle of wing beneath; feathers of uniform chestnut, without bands; speculum, metallic green.

Length, 17.80; wing, 7.50; tarsus, 1.15; commissure, 2.
Habitat, western America.

SPATULA CLYPEATA (L.). (142.)

SHOVELLER.

In driving across the high rolling prairie a few miles southwest of Fort Snelling, I discovered a female of this species in the distance, laboriously waddling through the grass less than one foot in height, up a gentle slope. A familiar muskrat pond of moderate size lay between me and the duck, from the shores of which emerged numerous paths of the muskrats which

could be indistinctly seen, even at that distance. These are generally very irregular in their course, greatly increasing the distance to any point they approach, and hence very misleading to any one not aware of their habits. It occurred to me at once that she was following such a devious way, as she advanced so indirectly and apparently hesitatingly. She never paused, however, until having arrived at a spot quite near a solitary bunch, or patch of rank growth, when after a moment's pause, and survey, she dropped her briefly elevated head and disappeared in that patch of rank vegetation. Except the restricted covert thus afforded, she could scarcely have selected a more exposed location, as it was plainly in view for a distance of three-fourths of a mile in the direction from which I saw her, and only a little less in any other one except directly opposite my location, which was slightly interrupted by the further elevation of the land. Marking down the location without the slightest difficulty, I drove on to my destination, not very far beyond, passing much nearer to the spot in my way, I did not return for some two hours, but on doing so drove directly to the spot and upon carefully parting the rank prairie grass, avoided by the grazing cattle on account of its being the product of a deposit of their offal late in the previous year, I at once discovered the nest with five pale greenish-yellow eggs.* They had the faintest tinge of olivaceous-gray, and measured on an average, a little more than 2 by 1.50 inches. Being called to the same place again after ten days, I drove to the spot, and drove the duck from her nest to find she had fourteen eggs, settling the question of her depositing one each day after she began laying. My discovery of the nest was on the 23d day of May. In early seasons they occasionally arrive in their spring migration by the 5th of April, but usually somewhat later. More commonly they are then seen in small flocks only, yet I have known them in an exceptional year to appear in very large ones, but when such is the case I have observed that such flocks do not remain long, but pass on north further, suggesting that their destination is probably the highest lati-

*When referring to the habits of the Shovellers in breeding, I should have said that while they frequently go so far from the water to build their nests, such is not their uniform custom, for more frequently the nests are to be found quite near it. One of them I found in a clump of rushes within a yard of running water, and another in the middle of a broad marsh, half a mile from water deep enough for the duck to swim in. The structure consists of such materials as are most easily obtained at and near the spot. The one first mentioned, on the open prairie, consisted entirely of dried grass, overlaid with feathers from the bird's own breast; while the latter two were constructed of rushes and reeds. They otherwise are like most duck nests, rather firmly built of a liberal supply of material. The market stalls bear testimony that nearly all sections are represented by this species, at least in the game season.

tudes in which the species breed, and further intimating that the smaller flocks which follow are subdivisions of larger ones which have begun to disintergrate before reaching us here. Their movements at these times do not materially differ from those of the Black Ducks on the wing, but the preponderance of white in the color easily distinguishes them at all ordinary distances and there can be no reason for mistaking them. They soon pair, and soon seek their grounds for breeding their young. Their food is, as their long, pectinated bills fore-shadow, aquatic insects, larvæ, tadpoles, worms, &c., which are obtained mostly in shallow waters. I have often flushed them from muddy pools and frogponds by the roadside before the nesting had begun, but never afterwards I think.

The distribution of the Shovellers is entirely determined by the character of the ponds and pools which afford their peculiar food. In the early autumn, if the frosts are delayed, as once until the middle of October, they live almost exclusively upon crustaceans and small molluscs, especially snails, which abound at that season about the shallow lakes and ponds.

They disappear very soon upon the advent of the first crisp frosts, be that, as in one year, August 30th, or September 30th. Their flesh is white and excellent, yet for some unexplainable reason is not popular in the average local markets, notwithstanding the high esteem in which it is held at the seaboard.

SPECIFIC CHARACTERS.

Head and neck green; forepart and sides of breast, greater portion of scapulars, and of the base of the tail, white; rest of under parts dull purplish chestnut; crissum, rump, and upper tail coverts black, the latter glossed with green; wing coverts blue, the posterior row, brown in the concealed portion, and tipped with white; longest tertials blue, streaked internally with white; others velvet green, streaked centrally with white; speculum grass-green, edged very narrowly behind with black, and then with white.

Length, 20; wing, 9.50; tarsus, 1.40; commissure, 3.

Habitat, Northern Hemisphere.

DAFILA ACUTA (L.). (143.)

PINTAIL.

When the steady advance of the sun has banished the ice from the lakes and every pool is ringing with the monotonous peepings of the frogs, the Pintails will be found in considerable numbers on the mud flats of the open level prairies, and ex-

tensive marshes, where for the time the tadpoles have attracted them by their abundance. But they were here before that time, having followed closely upon the track of the Mallards and other early ducks

In large and medium flocks, they will then be found along the recently opened streams, and in the woodlands where they spend much of their time in search of acorns, insects, snails, and larvæ of different kinds, which are under the wet leaves and on the old decaying logs with which the forests abound. Under these circumstances, they scatter widely, so that the first one encountered will seem to be a wanderer, but a little distance away another will be flushed, and so until several have flown off before the flock will rise as a whole, and perhaps not even then if no gun has been fired to simultaneously disturb them. Yet, when in the water they rarely scatter much, but swim very compactly as a flock, uttering a low chattering note as they move evenly along over the quiet surface. If driven to wing, they rise as compactly as they swim, a circumstance in their habits which has been noticed through their history, and has been made available and profitable by the pothunters. I have no reliable evidence that they breed in the southern portions of the State, but find them doing so limitedly in the middle, and commonly in the northern. They have been found with the young in July in several localities, and samples of their eggs which were taken from their nests in early June in Becker county have been sent to me by Mr. Blanche of Detroit. Mr. Treganowan reported the presence of the species in Kandiyohi county in June and July, and Mr. Lewis in early August at Big Stone. Near Herman in Grant county, a German farmer saw them at different times during the summer, and shot some of them in August which he had mounted, that established their identity. I was many years ago told that this species was breeding in Medina in my own county, but never having found them breed myself, I took this statement with some qualification until I found the adult birds myself, following which the eggs were brought to me from the same vicinity by Mr. J. C. Bailey, who resided there for many years.

They are among the shyest of the Duck family, and might elude common observation for a long period in any section while fairly represented. About the second week in October, often somewhat earlier, they begin to leave us in this locality, and are all gone by the first of November.

SPECIFIC CHARACTERS.

Tail of sixteen feathers; bill black above and laterally at the base; the sides and beneath, blue; head and upper part of neck uniformly dark brown, glossed with green and purple behind; inferior part of neck, breast, and under parts white; the white of the neck passes up to the nape, separating the brown, and itself is divided dorsally by black, which below passes into the gray of the back; sides, and back anteriorly are finely lined transversely with black and white; wings, plain bluish gray; greater coverts, with a terminal bar of purplish buff, below which is a greenish purple speculum, margined behind by black and tipped with white; longest tertials striped with silvery and greenish black; scapulars black, edged with silvery; crissum and elongated tail feathers black, the former edged with white.

Length, 30; wing, 11; tail, 8.60; tarsus, 1.75; commissure, 2.86.

Habitat, North America.

AIX SPONSA (L.). (144.)

WOOD.

Peerless amongst its entire family for its indescribable beauty stands the Wood Duck. The nearest to a rival in the Duck kingdom is the Mandarin Duck of Asia. But the difference between the two makes comparison odious. It is at once the Prince of Ducks. The most truthful and esthetic description of the mature male could reach no nearer the limning reality, than the coldest prose could paint the rainbow. Science, after all her most imposing assumptions, would sit down and weep before the task, in blank despair. The impotence of all attempts has smirched the skirts of hope by what has been assayed in its systematic as well as its vernacular nomenclature. *Aix Sponsa!* Shades of Linnaeus, weep cold, clammy tears for thine irremediable dereliction! Wood Duck! Summer Duck!

Arriving simultaneously with the other earlier species, none other braves the last rigors of the departing winter in the closing days of a Minnesota March with greater spirit. And when they come, like the rains of the tropics, they pour in until every pool in the woodlands has been deluged with them. This may sound strangely and exaggerated to ears unfamiliar with the history of bird life on the borders of civilization, yet such has heretofore been my personal observation at the very location of our city. Wilson and other writers who have described the habits of the Wood Duck have uniformly stated that "they seldom fly in flocks of more than thræe or four individuals together, and most commonly in pairs or singly." A little later

than the time in spring of which I have written such statements become true, for after a short time following their arrival, they are only seen in smaller flocks, and then only in pairs, after which, by the first of May, not at all, for the pairs have entered upon their mission of reproduction. Audubon's description of their nidifications, so often quoted, tells it so extremely well that it would be in almost bad taste to undertake another. He says: "In Louisiana and Kentucky, where I have had better opportunities of studying their habits in this respect, they generally pair about the first of March, sometimes a fortnight earlier. I never knew one of these birds to form a nest on the ground, or on the branches of a tree. They appear at all times to prefer the hollow, broken portion of some large branch, the hole of our large Woodpecker (*Picus principalis*), or the deserted retreat of the fox squirrel; and I have frequently been surprised to see them go in and out of a hole of any one of these, when their bodies while on the wing seemed to be nearly half as large again as the aperture, within which they had deposited their eggs. Once only I found a nest (with ten eggs) in the fissure of a rock on the Kentucky river, a few miles below Frankfort. Generally, however, the holes to which they betake themselves, are either over deep swamps, above canebrakes, or on broken branches of high sycamores, seldom more than forty or fifty feet from the water.

"They are much attached to their breeding places, and for three successive years I found a pair near Henderson, in Kentucky, with the eggs, in the beginning of April, in the abandoned nest of the Ivory-billed Woodpecker.

"The eggs, which are from six to fifteen, according to the age of the bird are placed on dry plants, feathers, and a scanty portion of down, which I believe is mostly plucked from the breast of the female. They are perfectly smooth, nearly elliptical, of a light color, between buff and pale green, two inches in length by one and a half in diameter. No sooner has the female completed her set of eggs than she is abandoned by her mate, who now joins others, which form themselves into considerable flocks, and thus remain apart till the young are able to fly, when old and young of both sexes come together, and so remain until the commencement of the next breeding season.

"In all of the nests I have examined I have been rather surprised to find a quantity of feathers belonging to birds of other species, even those of the domestic fowls, and particu-

larly those of the Wild Goose and Wild Turkey. On coming on a nest with eggs, when the bird was absent in search of food, I have always found the eggs covered with feathers and down, although quite out of sight, in the depths of a Woodpecker's or Squirrel's hole.

"On the contrary when the nest was placed on the broken branch of a tree it could easily be observed from the ground, on account of the feathers, dead sticks, and withered grasses about it. If the nest is placed immediately over the water, the young, the moment they are hatched, scramble to the mouth of the hole, launch into the air with their little wings and feet spread out and drop into their favorite element; but whenever their birthplace is some distance from it, the mother carries them to it one by one in her bill, holding them so as not to injure their yet tender frame. On several occasions however, when the hole was thirty, forty, or more yards from a bayou or other piece of water, I observed that the mother suffered the young to fall on the grass and dried leaves beneath the tree, and afterward led them directly to the nearest edge of the next pool or creek. At this early age, the young answer to their parents' call with a mellow *pee, pee, pee-e*, often and rapidly repeated. The call of the mother at such times is low, soft, and prolonged, resembling the syllables *pe-ee, pe-ee*. The watch note of the male, which resembles *hoe-ek*, is never uttered by the female; indeed, the male himself seldom uses it, unless alarmed by some uncommon sound, or the sight of a distant enemy, or when intent on calling passing birds of his own species."

I may be pardoned for my enthusiasm over this magnificent duck, when I state that I have enjoyed better opportunities for carefully studying its habits than of any other species, and the capture of a male in the perfection of his vernal plumage, was my first attainment in *wing* shooting some thirty years ago. Without a single stain of blood on it to mar its wondrously beautiful adornment, Mr. Wm. H. Howling, of my city, mounted it for me in the perfection of taxidermic art, so that now after so long a time it is in excellent condition and on the shelves of the museum of the Minnesota Academy of Natural Sciences. It was immortalized in the interests of science in its tragic death, at a spot now embraced in the heart of this great and phenomenal city. Since that evening, how many occasions for observing the species have I recorded amongst my notes on the

ducks of the commonwealth! In the denser portion of the vast forest which embraces the inlets and bays of many clear and beautiful lakes, I have cautiously sought a quiet covert toward the evening of a warm day, from which to observe this charming species in spring. Perfectly concealed in the thickets within a yard of the deeply shadowed water, with my field glass in hand, I have many times watched them by hundreds, until the darkness hid them from my sight. These occasions were in the season of their love, when the matchless plumage of the males was displayed as at no other time in their entire history. With the crest elevated, and like a coronet on the head which is drawn backward as proudly as the swan's, each male, an undisputed monarch of the mirror lake, glides here and there, in and out in his ingenious and undisguised endeavors to outdo every other in his imperial display, until the seething resplendence seems to be one moving scene of grace and indescribable beauty. During this wondrous spectacular exhibition of motion, the woodland echoes have frequently borne away the characteristic and impassioned notes of the rival lovers, *o-o-o-eek*, *o-o-o-eek*. Thus completely concealed as I was they would approach me closer and closer as the shadows deepened until verily I could have touched the nearer birds with a coachman's whip.

At such times, by the aid of my constantly adjusted glass, I could have numbered the very barbs of the primaries while they paused to redress a recreant feather. I have found the nest of this duck as early as the 15th of April, yet I think the average of the nesting is not entered upon until about the 10th of May, or a little later. Indeed, one instance came under my notice where the location was selected on the twenty-seventh of that month, but it is more than probable that the bird had been robbed of another of earlier date. That they rear two broods occasionally seems very certain from their being found at different times with a young brood as late as July third, to the tenth of that month. The location and character of the nest have been given by the quotation from Audubon. Those eggs which it has been my fortune to obtain have been pale green, buff colored, and variously from six to fourteen in number. Many flocks of this species linger until very late in the autumn.

SPECIFIC CHARACTERS.

Head and crest metallic green to below the eyes; the cheeks and a stripe from behind the eyes purplish; a narrow, short line from the upper angle of the bill along the side of the crown, and through the crest, another on the upper eyelid; a

stripe starting below and behind the eye and running into the crest parallel with the one first mentioned, the chin and upper part of the throat sending a well defined branch up towards the eye, and another towards the nape, snow white; lower neck and jugulum, and sides of the base of the tail, rich purple; the jugulum with triangular spots of white and a chestnut shade; remaining under parts white, as in a crescent in front of the wing bordered behind by black; sides yellowish gray, finely lined with black, the long feathers of the flanks broadly black at the end, with a subterminal bar, and sometimes a tip of white; back and neck above nearly uniform bronze, green and purple; scapulars and innermost tertials velvet-black glossed on the inner webs with violet; the latter with a white bar at the end; greater coverts violet succeeded by a greenish speculum, tipped with white; primaries silvery white externally towards the end; the tips internally violet and purple; iris red.

Length, 19; wing, 9.50; tarsus, 1.40; commissure, 1.55.

Habitat, North America.

My numerous correspondents have uniformly mentioned this species as common, and breeding in their localities, if in the timbered lands. Dr. Hvoslef only mentions them thus common, but says nothing of their nesting at Lanesboro or vicinity.

Mr. Lewis found their nests at several points in the northern sections he visited, and always under the Audubon conditions.

Mr. Washburn, always accurate and circumstantial, says, abundant, and breeding at Devil's lake."

AYTHYA AMERICANA (EYTON). (146.)

RED HEAD.

Amongst the numerous sportsmen who have long resided in Minnesota, the great paradise of duck-shooters, not one will be found who does not know the Red head at sight, and few of them will fail to identify him under all the various circumstances in which he is ever met with. Introduce the subject of duck-hunting, and "ten to one" he will refer to this species next to the first one mentioned, and will ask if any other game duck is so capricious in the numbers of its annual representation, while at the same time he narrates their incredible abundance during the spring or fall of some year and their scarcity in the year following perhaps. This has truly been a remarkable characteristic in the case of this well known species. To some extent this is characteristic of all species of ducks, but in few if any, as emphasized as in the history of the Red-heads. They arrive about as early as any others, and disappear very little earlier than the latest.

In the spring of 1863 they were never so numerous, both in spring and in fall migration; and in the following year they were almost unrepresented.

Again they were abundant in 1867, and comparatively scarce in the following year, and so during their entire recorded local history they have varied in their numbers.

They do not remain with us usually to exceed about two weeks, when all have moved off to still more northern latitudes for incubation. Nothing could be more characteristic of their habits while with us, than their seeking the mouths of the streams where they debouche into the lakes. When not on the wing or in the woods feeding upon the mast, we know where to look for them, especially on a cloudy, windless day. The only reason I have for thinking that they breed in the northern counties is, that they have been seen in several places in June, and again in early August.

Although he found them common in October at different places in Otter Tail county, Mr. Washburn makes no mention of them in his August observations in the same section, from which I am left to presume that there could not have been any indications of their breeding there. Mr. Lewis extended his explorations much farther north, and finding the males occasionally, very reasonably concluded that the species bred to some extent within our borders.

SPECIFIC CHARACTERS.

Bill as long as head, broad, blue, the end black, the region anterior to the nostrils dusky; head, and neck for more than half its length, brownish-red, glossed above and behind with violaceous red; rest of neck and body anterior to the shoulders, lower part of back and tail coverts, black; beneath white, sprinkled with gray and black anterior to the crissum; sides, interscapulars, and scapulars, finely lined with undulating black and white in nearly equal proportions, imparting a general gray tint; wing coverts a bluish-gray, finely sprinkled with whitish; speculum, consisting of the ends of the secondaries, hoary grayish-blue, lightest externally, and the innermost narrowly edged externally with black; basal portion of the inner primaries somewhat similar to the speculum; tail of fourteen feathers; iris orange-yellow. The Red heads are easily distinguished from the Canvasback by the shorter and broader bill, absence of brown on the head, and a greater predominance of black in the waved lines.

Length, 20.50; wing, 9.50; tarsus, 1.60; commissure, 2.80.

Habitat, North America.

AYTHYA VALLISNERIA (WILSON). (147.)

CANVAS-BACK.

Although so famous among sportsmen and epicures at the seaboard, this species loses its preferments in our waters, and upon our Minnesota tables, taking a second place in both. As a general thing they appear to reach us about the same time as the Redheads do, but this is not always the case for, as intimated when speaking of the latter, it may abound when the Canvas-back entirely fails to put in an appearance, as in 1863. In the following year—that is, in 1864—the Red heads were barely represented, while the present species were exceptionally common for the species. Again in 1886, they were common in the autumn, but sparingly represented in the preceding spring.

When observed in the spring migration, they remain about two weeks, and are then found on lakes, streams and marshy ponds, feeding upon aquatic vegetation, crustaceans, molluscs, insects and larvæ of different kinds. They never appear to scruple about appropriating a small fish that comes in their way upon occasion. They return from the north ordinarily about the first week in October, and after a stay of about two weeks, or a little more, move on southward.

SPECIFIC CHARACTERS.

Bill long, slender and tapering; head all around and neck chestnut; top of head and region around the base of the bill dusky brown; rest of neck, body anterior to the shoulders, back behind, rump and tail coverts, black; under parts white; region anterior to anus, sides, interscapulars and scapulars, white, finely dotted in transverse lines with black the white greatly predominating; speculum bluish-gray lighter externally; innermost secondaries of the speculum edged externally with black; iris carmine.

Length, 20; wing, 9.30; tarsus, 1.70; commissure, 2.65.

Habitat, nearly all of North America.

I have always been incredulous as to the special claims of this duck for the table, and having enjoyed ample opportunities for comparisons, which not only embrace different species, but the same species inland and on the seaboard of both coasts, I do not hesitate to say that whether obtained in one or the other section, the culinary preparation being equal, the Canvas-back is equally desirable for eating, and that but for "the seaboard fashion" in the case, this duck would, instead of having the first place in epicurean distinction, have one much nearer to the second. Duck-meat, like a good many other things, is affected very much by the "environments" when eaten. A good cook is the chief one of those, and a good appetite stands next. To *under* value the Canvas-back is an inland "fashion."

AYTHYA MARILA NEARCTICA STEJNEGER. (148.)

GREATER SCAUP DUCK.

The comon name, Blue-bill, is the only one known to the vernacular of our local sportsmen. Amongst the earlier migrants of its sub-family, the Blue-bills come to us in the first ranks of the duck hosts of late **March**. It seems as if "when one comes, all come," but the number vary, like some other species, with the seasons, sometimes overshadowing any, indeed every other species for a short time. At these times they frequent all waters, pools by the wayside—shallow lakes, ponds, streams and marshes, but still discover to the critical observer, a preference for estuaries. These afford them such food as the high waters bring down from the inundations of the higher lands.

They fly in very close, compact flocks, which, however large upon their first arrival, are soon broken into smaller ones of about a dozen to twenty, and are much on the wing when the weather is cloudy and windy. When on the water at considerable distance, their identification is not ordinarily difficult, on account of their huddling together very closely, and their habit of constantly diving. They are about the tamest of the wild ducks, and almost the stupidest also, for after having been repeatedly fired into, and driven to wing, they will return by a short circle to nearly the same locality until a considerable portion of the flock has been killed.

During the last week in April, and the first in **May** they disappear, after which only an occasional male is seen through the summer in the low wet marshes. They build their nests of reeds and grass, on the ground in remote marshes and swamps, about the second week in **May**, and deposit eight to ten eggs colored pale drab, and dingy with a wash of olivaceous. The first nest to which my attention was called by Mr. Lewis, was located within three miles of this city, near a sluggish stream connecting two lakes. It contained but three eggs on the thirteenth of **May**, but was not disturbed until containing eight, only one of which I was permitted to retain. I think there are relatively few that breed as far south as where my personal observations have been principally made, but they are as common as any other species about **Lake Superior** during the summer in the marshes.

Mr. Washburn states that they are reputedly regular summer residents, and breed near Fergus Falls in rather limited numbers. He regarded them as a moderately represented species in the breeding season, the larger proportion going further north. In each of my personal explorations in Wright, Meeker, and Kandiyohi counties, I have carefully sought for information respecting the nidifying habits of this species in those sections, and have been so far rewarded as to find their eggs in the possession of several persons residing there, and obtain such detailed descriptions as to the location of the nests, and general habits of the Blue-bills as leaves no doubt of their breeding there, though nowhere numerous. I was shown the deserted nest in one instance, but their well known resemblance to those of the Mallards in both location and structure, robbed the observation of all value in the absence of the eggs and the duck. In every shooting season the variation of the measures of the Blue-bills has arrested the attention of sportsmen as well as naturalists, yet very few have overlooked their persistent habits enough to confound them with the Little Black-heads (*A. affinis*). Under my notes of measurements for thirty years the variations in this species have never exceeded 20.75 inches in length; wing, 9.25; nor fallen below 17.50 and 8, while the Little Black-heads have been between 17.50 in length; with the wing, 8; and 15, in length, with the wing, 7.25. I have never doubted the specific distinction of these two ducks since I became more familiar with their habits, although inclined to do so before; but I cannot account for intermediate forms, or rather intergrading measurements, by any proportionate hybridism, as has been so stoutly obtained. Although they are here so assuredly during the entire season, their habits do not make them specially observed to any marked extent, until they begin to gather into appreciable flocks late in the autumn; often into November, after which they remain but a short time.

SPECIFIC CHARACTERS.

Head and neck all around, jugulum and shoulders, lower part of back, tail, and coverts, black; head with a gloss of dark green on sides; rest of under parts white; feathers on lower parts of belly and side, the long feathers of the flanks, interscapular and scapulars white, waved in zigzag transversely with black; greater and middle wing coverts similarly marked but more finely and obscurely; greater coverts towards the tips and the tertials greenish black; speculum white, bordered behind by greenish black; white extending across the whole of

the central portion of the secondaries; outer primaries and tips of all, brownish-black; inner ones pale gray; the central line dusky; axillars and middle of the inferior surface of the wing, white; bill blue; nail black; legs plumbeous; iris yellow.

Length, 20; wing, 9; tarsus, 1.60; commissure, 2.15.

Habitat, North America generally.

Since the previous was penned, I have recovered some of my most valuable notes which had mysteriously disappeared some time ago, amongst which is an account of discovery of a full nest of this species in the latter part of May, 1877, but a short distance from my cottage at Lake Minnetonka. It was built on the side of an obsolete, half destroyed old muskrat house, in the middle of a reedy lake or pond, formerly a bay-like prong of the greater lake itself. It was composed of reeds almost entirely, over which were some grasses, and over this a layer of the duck's own feathers. Ten pale, drab colored, dirty eggs, with just a perceptible wash of olivaceous, constituted the clutch, none of which showed any signs of being addled. The Blue-bills breed in all portions of the State I doubt not, much more frequently than generally hitherto supposed.

The reckless presumptions, or rather assumptions of carpet-concluders, as to the habits of species about which little was formerly known, have deterred many from earnest, expectant investigations in sections where the decree had precluded all hopes of finding them at all. Over ambitious writers have anticipated science by gratuitous conclusions upon very small data for very large inferences. We feel sorry for them when sleeping truth has finished her nap. The world is round, and still moves unconcernedly on.

AYTHYA AFFINIS (EYTON). (149.)

LESSER SCAUP DUCK.

It has been often observed that although the Greater Scaup Ducks may come to us in the spring or fall migration in great numbers, the Lesser Scaup Ducks are just as likely to be only sparingly represented, and when on the other hand, the former are barely represented, this species will as possibly be found abundant; yet this is by no means a rule, for I have not only known them to both be here in exceptional numbers, but to be equally reduced to a mere representation. I find by referring to my records of the dates of arrival of the birds in spring, that as a general thing, the species under consideration, has been slightly later in arriving at this locality, say three to five days. Like the former, they seek the running streams, or rather their estuaries, on first reaching this latitude, but very soon resort to the swampy marshes and shallow ponds and pools. Their food is more restricted to larvae, worms, and

crustaceans than is that of the others, and they are a little more shy and suspicious. Its presence here through the season of reproduction, although by no means abundant, indeed I may say rare, shows beyond question that it breeds here to some extent at least, but to what is only conjecture until their differentiation from the other species is more thoroughly understood. Persons entitled to the highest confidence by their integrity have expressed themselves certain that they have repeatedly seen the female and young in the marshes in July, but science wants a "certainty" which is more certainly assured than that. Dr. Coues tells us in his *Birds of the Northwest*, that he found them "breeding along the upper Missouri and Milk river," at least which "appeared to be of this species, as were the several specimens examined." Their presence there would by no consideration justify an assumption that they most likely breed here, for there is a marked difference in the climate of the two localities.

Comparatively few of those persons who have taken pains to report local observations of the water birds of the State, have recognized the species definitely, but Mr. Washburn has as follows: "*A affinis*, or Little Black-head, appears to be by far the more numerous representative of the family Fuliginæ in the fall. I found them very numerous indeed at Dead lake between October 10th and 20th. Many were shot, varying somewhat in size and coloration, none measuring over 17.25, and one 16. There colors too, varying from brownish-black to jet-black, and specimens that were but little marked, to those having much wavy black in fine lines on back and sides. Undoubtedly there are intermediate examples between *Affinis* and *Marila*. This subject, and the study of hybridism among Anatidæ and Fuliginæ, I trust I shall be able to investigate in the future. October 11th an adult female *affinis* secured in Otter Tail county, measured 16.50, 7.50, 2.50; and another from the same place measured 17.25, 7.75, 8."

SPECIFIC CHARACTERS.

Bill blue; nail black; head, neck, forepart of breast, back anterior to shoulder, lower part of back, tail and its coverts, black; head with violet-purple reflections, changing occasionally to green; belly and sides, with axillaries, and central portion of inner surfaces of wings pure white; lower part of belly near anus, undulated finely with black spots; inter scapular region and scapulars white, with transverse zigzag bands or lines of black which are much further apart in the scapulars,

which consequently are whiter; wings blackish; lesser and middle coverts sprinkled with grayish; speculum white, edged behind with greenish-black, which is also the color of the tertials; white of speculum crosses the middle of the secondaries; iris yellow.

Length, 16.50; wing, 8; tarsus, 1.35; commissure 2.

Habitat, North America generally.

These Ducks are frequently more numerous than any other species in the fall, not excepting the Buffle-heads. They retire southward about as much in advance of the Blue-bills as they arrive later in spring.

AYTHYA COLLARIS (DONOVAN). (150.)

RING-NECKED DUCK.

In the spring of 1861, and again in 1867, this species seemed to overshadow every other in numbers, and there have been few years in which it has not had a fairly common representation. They arrive about the same time in spring as do the Greater Scaups, but seek the lakes and ponds rather than the streams. Their movements on the wing are quite characteristic, and enable those familiar with the flight of different species of ducks, to single them out very readily. In one respect they remind us of the Golden-eyes. On rising from the water, their flight, always vigorous, is attended with a whistling sound, so distinct as to assure their identity even while yet invisible to the eye, and when visible, the flocks are easily determined by their loose, scattered mode of arrangement. They are more suspicious, and vigilant than some other members of the genus, and give the gun a wide birth after discovering that it is loaded. They are good divers, and feed upon minnows, crayfish, tadpoles, aquatic roots, insects, and grains or seeds, according to their prevalence at the season. The larger part of them move northward before the first of May, but some remain here to breed, their nests having been occasionally found as far towards the southern border of the State as Heron lake in Jackson county, in Hennepin and Becker counties, and in the vicinity of Big Stone lake, thus indicating a wide distribution. As early as the summer of 1863, reports reached me of their being seen during the breeding season along the Minnesota river, and again in 1869, a farmer residing near Rice lake in Anoka county, who claimed to know most of the prominent species of game ducks, insisted that the Ring necks stayed around the lake all summer, as he had flushed one of them several times in a marsh bordering it. In driving back and

forth to my cottage on Lake Minnetonka during many successive summers, I noticed now and then in the early mornings, an occasional solitary duck flying along the course of Minnehaha creek that looked in the distance like the male of this species.

Afterwards Mr. T. S. Roberts found the nest at a point not very remote from where I had noticed those males, as he informed me. Since then I have found this species breeding in several localities in the vicinity of Minneapolis, and in Kandiyohi county. I am satisfied that it does so generally throughout the State. Of the seventeen eggs I have had the opportunity to see in the nest and in the possession of a collector in my employment, the average measurements were, 2.25 by 1.60 inches. They were white, with a pale wash of green, that varied considerably in intensity, being deepest before they had been blown. The nests were variously placed from on a muskrat house, as in the case of the one found by Mr. Roberts, to a flat spot in the thick rice bordering a small lake, as found by my collector.

SPECIFIC CHARACTERS.

Bill blackish, with a basal and subterminal bar of bluish-white; head, neck, and body all around anterior to the shoulders, back and tail-coverts, black; the head glossed with green above, on the sides with purplish-violet; the back greenish; middle of neck with a narrow chestnut ring, subcontinuous above; under parts, and space immediately anterior to the shoulder white; space anterior to the black of the crissum, and the sides, very finely waved with black; scapulars very slightly sprinkled with dots of grayish; wings plain grayish-brown; speculum, consisting of the terminal half of most of the secondaries, grayish plumbeous, the innermost of them tipped with white; point of chin white.

Length, 18; wing, 8; tarsus, 1.30; commissure, 2.10.

Habitat, North America.

Since writing the above, I have recovered some notes mislaid, in which I find that both of my assistants, Messrs. Lewis and Treganowan, have recognized their breeding in Big Stone and Becker counties. The former upon finding them frequently in the breeding season, and the latter having found the nest in Becker in 1879. Mr. Washburn found them well represented among the ducks, breeding at Mud lake in Otter Tail county. Mr. J. M. Holzinger says in a communication to me in 1887, that this species is more abundant at Winona than *A. affinis*, but he makes no mention of its local breeding

habits. When there shall have been a more extended exploration of the northern portions of the State, during the mid-summer, I feel confident that it will be found that the Ring necks breed there as commonly as in any other locality or district of its entire range.

GLAUCIONETTA CLANGULA AMERICANA

(BONAP.). (151.)

AMERICAN GOLDEN-EYE.

This Duck returns with rather more than ordinary regularity as a migrant but is rarely observed here in the season of breeding. Small flocks may be seen occasionally in winter, especially at times of exceptionally severe weather. They are almost uniformly amongst the earliest to reach us in the spring, while the lakes and streams are yet sealed with ice, except spots along the shores and where the currents are more rapid in the streams.

The whistling of their wings in flight is a generic characteristic, and is often heard before the duck is visible. They remain but a short time, but in autumn they sometimes reappear as early as the second week in October, when they remain in flocks of a dozen to twenty, about as late as any of the other species, after which they principally disappear. In early times small flocks remained in the spring-holes along the Minnesota river bottoms and below the Falls of St. Anthony all winter, which they may still do in wild, and unfrequented sections. On the 3d of February, 1886, one of the coldest days experienced during that winter, they were seen on the river at Lanesboro in Fillmore county, by Dr. Hvoslef, and by others who reported them from several widely different sections. Neither of my earlier lieutenants ever met the Golden-eye except rarely in the colder winters, and Mr. Washburn found them there in the sections he visited even in the spring migrations. He saw a few individuals at Dead lake, but they were universally in immature plumage.

I have been assured by local sportsmen at Herman in Grant county, that "a few Whistlers" have been seen near there late in the breeding season, and from similar assertions by those who seemed to know the species under its common name of Whistler, I am compelled to believe that laggards may occasionally be overtaken by the impulse and urgency of ovular expulsion, and rear a brood within our borders. I find this im-

pression thoroughly rooted in the minds of several experienced observers whose opportunities have been exceptionally good, and have extended through a longer residence than mine.

SPECIFIC CHARACTERS.

Bill, black; head, and upper part of neck, glossy green; under surface opaque velvety purplish-black; an elliptical patch along the base of the upper mandible anterior to the eye, lower part of the neck, under parts generally, sides, middle and greater wing coverts, innermost secondaries, and tertials (except the innermost three or four) white; white on wing a continuous patch, although there is a concealed black bar on the bases of the greater coverts; inner scapulars white, margined externally with black; posteriorly however they are black, streaked centrally with white; inner scapulars and tertials, and the whole back, rump, and lesser wing coverts, black; primaries and tail black with a hoary gloss; under side of quills and lower greater coverts plumbeous-gray; rest of under wing and axillars sooty-brown; long white feathers of flanks edged superiorly with black; iris, golden-yellow.

Length, 18.75; wing, 8.50; tarsus, 1.50; commissure, 2.

Habitat, North America.

GLAUCIONETTA ISLANDICA (GMELIN). (152.)

BARROW'S GOLDEN-EYE.

If the measurements given by systematists were reliably specific, I could report this species with more confidence, but those, as well as all of the specific characters given definitely, grade into each other so completely that I do not feel like speaking with the confidence I otherwise would in many, or rather several instances. Still, one specimen obtained in 1877, and another in 1881 were well made out; both having been brought in from beyond the Big Woods by sportsmen who called them "Whistlers." Last year one was sent me from near the Iowa state line which was a typical bird, and Dr. Hvoslef has a female of this species in excellent plumage.

I must conclude that they are rare, but less so than I once supposed. I think it quite possible that amongst those reputed to remain in open waters through the winter, this species may yet be found most represented.

SPECIFIC CHARACTERS.

Head and neck all around a bluish violet, occasionally with green, or purplish reflections; a large white patch anterior to the eye, occupying the entire side of the bill and running up in a point on the forehead; lower neck and underparts generally

white; a narrow white patch on the middle wing coverts; greater coverts black, tipped with white, which is continuous with the white secondaries, but separated from that on the middle coverts; anterior scapulars white, edged externally with black; posterior ones black, with a white central streak; rest of upper parts, sides behind, and tibia, black; long feathers of the flank white, tipped and edged above with black.

Length, 22.50; wing, 9.50; tarsus, 1.60; commissure, 1.80.

Habitat, Northern North America.

CHARITONETTA ALBEOLA (L.). (153.)

BUFFLE-HEAD.

Occasionally, during the entire summer, individuals of this species have been seen along the shores of the larger lakes bordered by timber, as also along the Minnesota river in the vicinity of Shakopee. Such has been my confidence that to a limited extent they breed here, that I have left no opportunity unimproved to discover the final proof in the finding of a veritable nest. But for this testimony I must still wait, notwithstanding the oft repeated assurances of several persons that they have found them. In one instance my hopes had been nearly realized when I found the nest to be that of the Wood Duck (*Aix sponsa*). In another, where the species was apparently well known and excellently described, proved to be quite another, the nest of which was on the ground, which however was so elevated that in passing to it the female appeared to go into a hollow limb immediately in front of it. They reach the principal portions of the State oftentimes before there are lakes enough open to allow them to get to their chosen food, the mussels and small fry. The flocks in spring migration are usually small compared with those of late autumn, averaging no more than ten to twenty ducks, while at the later one, they often exceed five times those numbers. They are incessant divers, and very fleet in their movements under the water, seizing minnows like the true fish ducks, which element of food becomes evident in the deterioration of their flesh for the table.

The principal northern migration of the species is over by the 1st of May, flocks of three or four, and even only pairs remaining a little later.

SPECIFIC CHARACTERS.

Bill blue; head and neck anteriorly, dark colored; region in front of the eye, and on the sides of the collar behind, rich

green, which shades into purplish on the upper and under surfaces of the head; a broad patch on each side of the head from the posterior border of the eye, meeting its fellow on the nape, the lower neck all around, under parts generally, wing coverts (except the lesser) and most of the secondaries, and scapulars, white, the latter narrowly edged externally with black; rest of upper parts, except as described, black, passing gradually, on the upper tail coverts into pale gray; axillars, and under wing coverts, sooty brown, more or less tipped with white; iris hazel.

Length, 15; wing, 6.65; tarsus, 1.25; commissure, 1.45.

Habitat, North America.

CLANGULA HYEMALIS (L.). (154.)

OLD-SQUAW.

In local popular parlance this species is variously called by the following names: Old-wife, Old-squaw, Old South-southerly, Long-Tailed Duck. I heard of this Duck through the leading sportsmen for several years before I saw it, after which it soon became familiar to me. But it remains here for a short time only in either migration, arriving amongst the earliest migrating species, and disappearing entirely in a very few days. In fall they reach the State only a short time before the whole sub family moves southward.

They usually remain very distinct, in flocks of from a dozen to fifty and sixty. Their movements are so characteristic on the wing, that having observed them attentively once, they need never be mistaken for any other species afterward. They are only a little better for the table than a narrow-billed Fish Duck.

From the local observations of casual observers I should be led to suppose that this species might remain in Kandiyohi and Big Stone counties considerably longer in both migrations than I should be able to vouch for from authentic sources beyond my personal notice.

SPECIFIC CHARACTERS.

Bill, black, orange-yellow towards the tip; head, neck, and breast, very dark blackish-brown; head above, back, rump and middle tail feathers, black; whole side of head from the bill to behind the eyes and sides of the body, pale bluish-gray; portion of cheek patch immediately around and behind the eye, with a longitudinal streak each side of the occiput, under parts generally, and the more external feathers, white; feathers on the forepart of the back, and scapulars, broadly edged with

light reddish-brown; under wing coverts and axillars, brownish-chocolate; no white on the wing; iris, white.

Length, 21; wing, 9; tail, 8; tarsus, 1.50; commissure, 1.60. Habitat, Northern Hemisphere.

HISTRIONICUS HISTRIONICUS (L.). (155.)

HARLEQUIN DUCK.

This peculiarly marked duck is found on Lake Superior in the winter, and has been obtained once in Grant county, whence it was brought here by Mr. Norris on his way to New York where he purposed to have it mounted for his private collection. On two other occasions a specimen found its way into the hands of a taxidermist in St. Paul, and those of another residing in Minneapolis temporarily. These could be only stragglers in migration.

SPECIFIC CHARACTERS.

Head and neck all around, dark blue; jugulum, sides of breast, and upper parts, lighter blue, becoming bluish-black again on the tail coverts; the blue of the breast passes insensibly into dark bluish-brown behind; a broad stripe along the top of the head from the bill to the nape, and the tail feathers, black; a white patch along the entire side of the base of the bill anterior to the eye, and passing upwards and backwards so as to border the black of the crown, but replaced from above the eye to the nape by chestnut; a round spot on the side of the occiput; an elongated one on the side of the neck; a collar around the lower part of the neck, interrupted before and behind, and margined behind by dark blue; a transversely elongated patch on each side of the breast, similarly margined; a round spot on the middle wing coverts, a transverse patch on the end of the greater coverts, the scapulars in part, a broad streak on the outer web of the tertials, and a spot on each side, the rest of the tail, white; sides of body behind, chestnut-brown; secondaries with a metallic speculum of purplish or violet-blue; inside of wing and axillars, dark brown; iris, reddish-brown.

Length, 17.50; wing, 7.70; tarsus, 1.50; commissure, 1.55.

Habitat, northern North America.

SOMATERIA SPECTABILIS (L.). (162.)

KING EIDER.

A pair of these ducks was obtained in Grant county by Mr. Emery Armstrong, of Herman, in October, 1885. After considerable correspondence, I learned that one of them was sent to Philadelphia, and the other to some friend in Michigan.

The same gentleman says that he has seen quite a number of them flying over the level prairies in the vicinity of Herman, and he has shot several without suspecting it was a rare species in the State. The section mentioned where those were obtained is a level prairie for a long distance, and abounds with shallow ponds so much exposed as to make them the safest of resorts for water birds in general, with which it verily swarms in their flocking seasons. It was through Mr. Washburn's courtesy that I learned of this pair of King Eiders having been obtained.

As the locality is a favorite hunting resort of mine, and Mr. P. H. Clague resides there, a friend who loves ducks (to eat) as well as I do (to list,) I propose to settle this regal question if it takes a good many duck-seasons to do it in.

SPECIFIC CHARACTERS.

Body and wings, black; the portion anterior to the shoulder joint, interscapular region in part, most of neck and throat, white; jugulum with a creamy tinge; a narrow border to the frontal process of the bill and their interspace, small space around the eye and a V-shaped mark on the chin, black; top of head and nape bluish-ash, slightly spotted with black; middle wing coverts, tips of secondaries, axillars, most of under surface of wing, and a patch on each side of the rump, white; sides of head glossed with transparent emerald-green; the scapulars have the black tinged with slate.

Length, 21.50; wing, 10.70; tarsus, 1.85; commissure, 2.53.

Habitat, northern North America.

OIDEMIA AMERICANA SWAINSON & RICHARDSON. (163.)

AMERICAN SCOTER.

Only occasionally observed about our smaller inland lakes, these Ducks are not uncommon in the vicinity of Duluth on Lake Superior in pairs or quite small parties. Sportsmen familiar with the seacoast Ducks tell me they sometimes meet the Scoters, or "Coots" in considerable numbers on the shores of Mille Lacs lake. In the winter of 1867 and '68, and again in 1874 and '75, I found several of them in openings where spring-brooks entered the streams, as I did also in the turbulent rapids below the Falls of St. Anthony. I have in a few instances seen individuals of both sexes in the collections of the local taxidermists. I am informed by Mr. Holzinger of Winona, that one specimen is in the possession of Professor Heaton, of the Normal school at Winona, which he obtained on the Mississippi, just above that city. My observations embrace only the sea-

sons of migration and occasional winters. The absence of white in contrast with the uniform black, identifies the species very readily.

SPECIFIC CHARACTERS.

Tail of sixteen feathers; bill much swollen on the basal third; basal portion of culmen, convex, and rapidly descending; terminal portion of bill much depressed; anterior extremity of nostrils half way from the lateral or upper feathers at the base of the bill to the tip; swelling at base of bill divided by a furrow along the median line; frontal feathers extending slightly forward in an obtuse point; color entirely black all over, without any white; bill black along the edges and tip, the swollen basal portion red to beyond the nostrils.

Length, 23.80; wing, 9.20; tarsus, 1.80; commissure, 2.14.

Habitat, coasts and larger lakes of North America.

OIDEA DEGLANDI BONAPARTE. (165.)

WHITE-WINGED SCOTER.

The White-winged Scoters are not often seen before the third week in October or even a little later than that, and very rarely in any considerable numbers. A few of them get into the market at such times, but are so unsaleable that they are liable to remain on hand some time. Occasionally they are purchased and mounted by the taxidermists. Later they are only found in open shallow streams where the rapidity of the current prevents the formation of ice, and in spring-holes near large water courses. More commonly but a pair is found in one locality during the winter. Their food consists of molluscs, crustaceans and fish, the latter predominating. In open winters they leave the State by the 15th of March. I have no record of their presence later than the 25th of that month. Mr. H. W. Howling, of East Minneapolis, has a pair of these Ducks mounted in his possession which he has kindly permitted me to examine very recently. The male had the "white elongated patch around and a little behind the eye" excessively developed. It reached nearly to the top of the head. The female had besides the "whitish patch on the side of the head behind the eye," another rather obsolete one in front and below the eye.

SPECIFIC CHARACTERS.

Bill very broad, wider towards the tip than at the base; feathers extending far along the side of the bill, and on the forehead for nearly half the commissure, running in an obtuse point about as far forward as the lower corner of the outline of

the feathers on the side, both reaching nearly to the posterior border of the large, open, nearly rounded nostrils; culmen horizontal, a little beyond the frontal feathers, then abruptly bent downward, nearly perpendicularly to the much depressed, nearly horizontal portion; a sharp, indented ridge along the base of the culmen, ending in a trihedral tubercle; color black; a white elongated patch around, and a little behind the eye, and a large white speculum on the wing composed of white secondaries and tips of greater coverts; bill black at the base and lateral edges red elsewhere; iris bright yellow.

Length, 21.50; wing, 11.30; tarsus, 2.10; commissure, 2.80.

Habitat, northern North America.

ERISMATURA RUBIDA (WILSON). (167.)

RUDDY DUCK.

The habits of this species are such as to make it a little difficult to gather much information of them until a good fortune has exposed some of their peculiarities to us, as it were by accident. I must allow myself to quote a paragraph from Langille, "Our Birds in their Haunts," a charming, delightful, and reliably instructive work which ought to have a place in every bird-lover's library in America. Some of his descriptions are word paintings which rival Audubon's colors. When speaking of this unique duck (pp. 471,2) he says:—"An anomaly of its kind is this little creature.

"Some fifteen inches long, and 21.50 in extent, it has a peculiarly short, and almost round appearance. The long and gradual curve of the crown, joined to a bill rather short, broad and much depressed is a marked feature; the rather long and broad tail, with scarcely any coverts above or below, is decidedly out of order for a Duck; the broad tip of the wing, so apparent in flight, would seem more in place for a Coot, or a Gallinule; striking seasonal change of plumage in the male would do for a Gull, or a Grebe; the large egg, with granulated shell, might be mistaken for that of a Goose; while its diving propensities would do credit to a Dabchick. Look at that elegant male, as he floats on the smooth surface of some fresh water channel in the breeding season! Almost as motionless as a wooden decoy, he holds his large and full spread tail straight up, often catching the wind just in the right direction, and thus using that appendage for a sail. Jet black over the crown and down the back of the neck, cheeks clear white, the remaining upper parts a bright, glossy, dark-red, he is a well defined object even in the distance. The female (which the

male resembles precisely, from fall till spring) is a dark brownish-gray, the throat and broad stripe through the eye lighter, both sexes being white, or mottled with gray underneath.

"The young are a little lighter than the female. Except in its sojourn in the south in winter, where it may be seen in immense flocks, especially in Florida, it is generally in small flocks after the manner of the Buffle-head.

"When rising from the water, it runs on the surface for some distance, and generally against the wind. If it cannot command a fair open space for flight, it will dive, using its tail either as a rudder, or as a paddle in a vertical motion, and will hide itself away among the grass and sedges. When on the wing, it flies low along the surface of the water, with a rapid beat of its broad wings, making a short, plump figure, quite uncommon for a Duck; and it generally flies quite a distance before alighting."

It arrives from the south not far from the second week in April, possibly a week or ten days earlier, for as has already been intimated, their low unheralded flight, along between the banks of the streams, and usually late in the twilight, or extremely early in the morning, almost precludes the possibility of arriving at precise data as to the time of their arrival or departure. That they do resort to the larger lakes occasionally is conceded, yet never have I seen them anywhere but on the creeks, or smaller ponds, except in migration along the Mississippi, when they kept close to the surface. I can recall no time either when by any means they could be driven more than thirty or forty feet into the air, and then only to drop down again as soon as beyond immediate danger. If disturbed by the approach of the gunner, when concealed from him by the banks or a short bend in the stream their feet and wings may be heard in their flight, but they will remain unseen as a general thing. When suddenly surprised, as is sometimes the case, as when gunners come upon them simultaneously from opposite directions, they will dive, and immediately reverse their direction of submarine escape, and only return to the surface close under the bank amidst debris or reeds, and very much scattered, thus escaping unscathed.

Nesting is begun in May, from the first week of which they have as apparently disappeared as if they had migrated, all to devote themselves to the great mission of reproduction. I have never personally had the pleasure of finding the nest

with eggs in it, but have been quite content to discover the female and very young, in the third week in June. Others have on several occasions obtained the eggs and female with them. The nest is built very loosely of grasses and reeds, or rather coarse weeds, and is placed on the ground close to the water and well concealed by sedge, or other rank vegetation. More frequently it is located in a dense growth of wild rice.

The eggs are white with a tinge of stone color, and large for the relative size of the duck. No species of its kind more effectually conceals its nest and eggs, seldom leaving them without covering the latter with feathers and debris. They retire from our latitude by the last week of October oftentimes, yet I have found them still later in exceptional seasons. Dr. Hvoslef reports them at Lanesboro on the 20th of that month. I found them common at Herman at a little later date in 1886, and Mr. Washburn reports them the same at Dead lake in Otter Tail "between the 10th and 26th the year previous."

SPECIFIC CHARACTERS.

Bill grayish-blue; top of head and nape black; sides of head below the eyes, with the chin, pure opaque-white; lower part of neck all around, entire upper parts, and upper portion of sides, chestnut red; under parts generally lustrous grayish-white, with an occasional brownish tinge; crissum pure white; wings brown, without speculum, finely and almost inappreciably sprinkled with gray; tail nearly black.

Length, 16; wing, 5.80; tarsus, 1.25; commissure, 1.80.

Habitat, North America.

CHEN HYPERBOREA (PALLAS). (169.)

LESSER SNOW GOOSE.

In its favorite localities during the autumn especially, this species eclipses any other of the Goose kind for numbers. When visiting Grant county in October, 1884, in company with my son, where we were joined by our friend Mr. P. H. Clague for a grand Goose hunt, we met this species in force. Anything like accurate estimates of numbers in a given flock of any kind of birds must be practically impossible, yet, approximation enough to convey a good general idea has been reached by Wilson and others, by subdividing. At a glance the mass may be instantly halved, quartered, eighthed, and sixteenthed, when its count becomes possible in many cases. By such a method of calculation I made an estimate of a flock containing quite nearly 300 geese, and checking down the different flocks

during one day's observation, I arrived at the conclusion that within an area of five miles in diameter, we saw not less than 5,000 Snow Geese, without having recounted any flocks, as they confined themselves through the bright, sunny day to the same bodies of water, as a consequence of which, not a White Goose was killed, by any of us during the day. The hunters call them White Brant. The sight of one of those animate clouds of floating snow on which the dazzling rays of the sun are pouring on a bright October day, can be neither described nor forgotten. The Snow Geese make but a comparatively short stay in this latitude in the spring, but seek those most northern by the 15th to the 20th of April generally. The measures of all which I have obtained, and found in the markets, have placed them within the lesser species as recognized by the Check List of the American Ornithological Union, not one in ten exceeding twenty-seven inches in length, with the wing sixteen. The Blue Goose, about which there has been some controversy, and which it has been my good fortune to secure several times, is beyond a doubt in my own mind, the young of the species under consideration, the measures essentially agreeing with theirs.

When speaking of them in his reports from Mille Lacs, and Crow Wing, Mr. Washburn says: "Very abundant on the prairies west and south of Fergus Falls." And again speaks of "*Chen coerulescens*, Blue Goose," as being often killed during the open season near the same place.

Mr. Herrick found "immense numbers of the Snow Geese at Lake Shatek, the source of the Des Moines river." I might add other reports from Waseca, Big Stone, Kandiyohi, White Bear, and other localities, without increasing the measure of knowledge of the species. They are exceedingly wary, and hard to get. Their food in the autumn consists largely of wild rice with several species of berries. However, earlier they depend upon aquatic and marsh vegetation, including some snails and insects.

SPECIFIC CHARACTERS.

Bill and legs, red; color pure white; primary quills black towards the end, silvery bluish-gray towards the base where the shafts are white; spurious quills also bluish; inside of wings except the primary quills, white.

Length, 27; wing, 16; tarsus, 3; commissure, 2.

Habitat, North America.

CHEN HYPERBOREA NIVALIS (FORSTER). (169a.)**GREATER SNOW GOOSE.**

In nearly every migration from the north of the Lesser Snow Geese there has been occasionally an individual shot where the measures have been greater than those given for the species, some of which reach the figures given for the Greater species, yet in habits I have discovered no difference whatever between them. I wait for more light on the specific differences upon which the classification rests. The measures hitherto given by all authorities have been:

Length, 30; wing, 16.30; tarsus, 3.12; commissure, 2.10.

Habitat, whole of North America.

ANSER ALBIFRONS GAMBELI (HARTLAUB). (171a.)**AMERICAN WHITE-FRONTED GOOSE.**

In the summer of 1876, I found a mounted specimen of the male of this species in high plumage, in the collection of Mr. Shroeder, a taxidermist of St. Paul. He could tell me nothing about its history except that he obtained it of a local sportsman in the previous spring. Since then I have met with occasional small flocks of them, both in spring and autumn, in the height of the anserial migrations, and have received reports from a number of observers in different sections of the state. Mr. James Thompson, of Lanesboro, shot one on his mill pond on the 11th of April, 1883. Mr. Clague, to whom reference has already been made, residing at Herman, in Grant county, has shot several near that place, and Mr. John Cutter, of Minneapolis, has bagged them at Big Stone, and on the Minnesota bottoms within an hour's ride of his residence. Yet they should not be regarded as by any means common.

I am quite familiar with the White-fronted Goose in its favorite region on the Pacific coast, where it is rather the choicest of its kind for eating, and where immense numbers are brought into the markets of Sacramento, Stockton and San Francisco. It was of this species that the largest number was obtained at a single shot of a "California Duck Gun" which has ever been recorded. Hunted constantly in the "Tules" as they have been for many years, they have long since become shy, and exceedingly difficult of approach. To meet this, an ox is trained to obey the *sutta voce* commands of the gunner as he walks beside him, keeping step with the forelegs by

which he is concealed from the geese on the "sloughs" along the San Joachim and Sacramento rivers, or along the bays. The approach is so slow that the ox naturally feeds much of the time, while the gunner, peeping over the back, and under the neck of the ox, watches the movements of the flock until they bring all the relationships right to serve the purpose most effectually, when he carefully turns the gun into position, fires a pistol, carried for that end, the countless flock rises, and when a little above the water, trigger is pulled, and then follows the "rain of geese," till between the killed and the wounded, it sometimes seems as if the whole flock must have been exterminated by that terrific shot.

Fifty drams of Duck powder behind a pound of Goose shot, well directed under such circumstances, ought to show results. Sometimes it does.

An instance of considerable local interest occurred which will illustrate the results of swivel gun shooting upon the White-fronted Geese.

A citizen of Sacramento, many years since, published an offer of a Panama hat worth \$25, to the person who would beat his record with a single shot at Geese. He had killed nearly fifty. For fifteen years the hat remained unclaimed, when a claimant proved his right to it by showing seventy-five Ducks of this species killed by a single shot on the "Tules" of the San Joachim, near the Suisan bay. They are seldom numerous in the spring migration, indeed some years almost unobserved, but rarely fail of returning in the autumn during October in large and numerous flocks. Their habits while with us are not characteristically unlike most other members of its family.

SPECIFIC CHARACTERS.

Tail of sixteen feathers; bill and legs red; along sides of bill and forehead, white, margined with blackish-brown behind; rest of head and neck grayish-brown, paler on jugulum; back bluish-gray, the feathers anteriorly tipped with brown, sides similarly colored; breast and belly grayish-white, blotched irregularly with black; anal region, sides behind, and beneath the tail, with upper coverts, white; secondary quills and ends of primaries dark-brown, remaining portion of primaries and coverts silvery ash; shafts of quills white; greater coverts edged with white; tail feathers brown tipped with white; axillars and under surface of wings ashy-plumbeous.

Length, 28; wing, 16.30; tarsus, 2.90; commissure, 2.05
Habitat, North America.

BRANTA CANADENSIS (L.). (172.)

CANADA GOOSE.

About the twentieth of March the Canada Geese come in large flocks, and at once possess the open, prairie lakes, and those embraced in extensive marshes. Their honkings at once enlist the interest of everybody who is waiting impatiently for the spring. The long, triangular flock will soon have everybody out of doors gazing at it wherever it passes. It is not much to be wondered at surely if those honkings are melody in more than one sense to the people of this latitude after a six-months bird silence, because of its announcements and its prophecy. Arriving uniformly in the first half of the day, we feel quite assured then that they have come to stay for a time at least, while those reaching us later, and during the night, pass directly on further north. Unlike most other wheat producing countries, Minnesota grows very little that is sown in the fall, and hence has little inducements to offer these birds in this respect upon their arrival, but her meadows, and the products of what has just been planted in wheat, soon supply them abundantly, and they drift about hither and yonder till about the 25th to the 30th of April, when they disappear as if they had been spirited away as mysteriously as the swallows formerly disappeared upon the approach of winter. They have paired and entered upon their great mission of nidification, a little removed from the ponds in the marshes, or on the "high-and-dry" islands in the lakes and larger water courses. The nests are formed of such materials as are in the locality chosen, more frequently sticks, coarse weeds, and grass, and are lined with feathers. They lay from eight to ten eggs which are too well known to need description. Nests have been found with the full complement of eggs in them as early as May 1st, but it is generally later than that. The male shares the confinement of incubation, at least while the female seeks her accustomed food. Nothing can exceed the devotion of both parents not only until the young are fully grown, but until "they are of age" the following spring.

Their fondness for the succulent blades of the volunteer wheat, and the soft grains of the waste of the preceding crop, costs them their lives by thousands in the fall months, when they are shot from holes in the ground surrounded by artificial decoys.

If it was not for their pulling the young wheat out of the ground, and thus destroying it entirely, as they do where the ground is very friable, they would do little if any harm, as snipping off the luxuriant blade rather contributes to the development of the roots, and thus to the perfection, and final quantity of the grain. To the same end, in fall-wheat countries, the farmer often grazes his wheat fields in early spring. Hot, dry "northers" in the great valleys of the Pacific Coast, will sometimes scorch the wheat fields in late winter until there is not a blade of the beautiful green to be seen, but if not so far advanced as to involve the first "joint," the undisturbed roots will soon throw out the blades again, and a better crop will follow for the premature firey grazing. They are great mast eaters, consuming incalculable quantities of mast in fall and spring both.

Their habits have been so often described in detail, that it would seem to be a work of supererogation to refer to them, but that of their manners in the season of pairing and in the defence of their young, is so striking that I will refer to them by a quotation from "Our Birds in Their Haunts," (Rev. J. H. Langille, M. A.) which is a quotation by the author of that work. It says: "It is extremely amusing to witness the courtship of the Canada Goose in all its stages; and let me assure you, reader, that although a gander does not strut before his beloved with the pomposity of a turkey, or the grace of a dove, his ways are quite as agreeable to the female of his choice. I can imagine before me one who has just accomplished the defeat of another male, after a struggle of half an hour or more. He advances gallantly toward the object of his attention, his head scarcely raised an inch from the ground, his bill open to its full stretch, his fleshy tongue elevated, his eyes darting firey glances, and as he moves he hisses loudly, while the emotion which he experiences causes his quills to shake and his feathers to rustle. Now he is close to her who in his eyes is all loveliness, his neck bending gracefully in all directions, passes all around her, occasionally touching her body, and as she congratulates him on his victory (over all competitors, H.) and acknowledges his affection they mutually move their heads in a hundred curious ways." The same author has previously described its courage and strength in the defence of the mate and young so graphically that I allow myself the further quotation which follows. Speaking of an exceptionally large one that "returned three years in suc-

cession to a large pond a few miles from the mouth of Green river in Kentucky, and whenever I visited the nest it seemed to look upon me with utter contempt. It would stand in a stately attitude until I reached within a few yards of the nest, when suddenly lowering its head, and shaking it as if it were dislocated from the neck, it would open its wings and launch into the air flying directly at me. So daring was this fine fellow, that in two instances he struck me a blow with one of his wings on the right arm, which for an instant I thought was broken. I observed that immediately after such an effort to defend his nest and mate, he would run swiftly towards them, pass his head and neck several times over and around the female, and again assume his attitude of defiance." This description is no more graphic than true, as I have had personal opportunity to verify it. I regard this species as amongst the most interesting and remarkable of the bird kingdom. Senator R. B. Langdon resides across the street from my office, and has an enclosure in which he keeps deer, antelopes and a flock of wild geese, the habits of each and all of which I have had ample opportunity to observe in years of confinement. The deers (two are added by birth each year, the latter part of June) and the geese manifest a great interest in the many children who visit their park. If one of their number runs a race along the iron fence which incloses them, both the deers and geese will at once join in the race, the latter with wings at half extent, and gabbling and cackling so much like the rollicking children that it is difficult to decide "which is which." If any of the ruder children turn and threaten to use sticks or clubs, the deers will gallop away, but the geese will instantly drop their heads, rustle their feathers, and rush up to the fence so resolutely as to send their persecutors flying, and does a bolder boy return, they will form a line of battle, and commence the ominous shaking of their heads, until one would suppose they would become unjointed. In such an attitude, with the suggestion of the bare possibility that they might possibly fly over the fence in their anger, even the boldest will consult the better part of valor and run away.

To say in a report like this that myriads of this species have annually visited the State to either breed here or, after two or three weeks, pass further north to do so, may seem an exaggeration, but what more temperate language would more nearly convey a just idea of their numbers? Yet it must be conceded that in the southern half of the State, their numbers

have materially diminished since the population has so greatly increased, and railroad connections with all of the other States have made it possible for hundreds of "crack-shots" to be on their haunts the moment the law allows them to be taken. Remoter sections submit them to less vernal persecutions, and there the numbers remain more nearly the same as those of several decades now gone. On their first arrival in any section, they spend much time on the wing reconnoitering, but soon become settled down to their work of eating, rather than flying. I suppose that there are sections where none of them ever breed, but I do not know of a county where I have been in summer, and had an opportunity to consult intelligent, observant residents, where I have not had good reason to believe that they were breeding to some extent at least. The country at large is eminently favorable to their nidification, and their habits during that season protect them from observation, while the enforcement of the statutes by the State Sportingmen's Club attend to their enforcement.

SPECIFIC CHARACTERS.

Tail of eighteen feathers; head, neck, bill and feet deep black; a large triangular patch of white on the cheeks behind the eyes; the two of opposite sides broadly confluent beneath, but not extending to the rami of the lower jaw; a few whitish feathers on the lower eyelid; upper parts brown edged with paler; under parts light, with a tinge of purple-gray, sometimes a shade of smoky brown; edges of the feathers paler; color of the body of the feathers though similar, becoming deeper on the sides, tibia, axillars, and inside of the wings; the gray of the belly passes gradually into white on the anal region and under coverts; upper tail coverts pure white; primary quills and rump are very dark blackish-brown; tail feathers black.

Length, 35; wing, 18; tarsus, 3.40; commissure, 2.10.

Habitat, North America generally.

BRANTA CANADENSIS HUTCHINSII (SWAINSON & RICHARDSON). (172a).

HUTCHINS'S GOOSE.

It is a difficult matter to convince the casually observing sportsman that there are really two varieties of the "Common Wild Goose," while he will readily concede a considerable variation in the size of different specimens of the species. The two seem to be thoroughly mingled in their autumnal migrations, with an immense preponderance of the Canadas, but in spring

very few of this species are noticed. Arriving presumably about the same time, these are believed all to pass further north to breed, and return to us about the first of October, or a little earlier. I cannot estimate their relative numbers in either migration, neither do I know of their having any distinguishable habit which enables me to identify them until they are in my hands. This is also true of their specific characters, only differing from *Canadensis* in the measurements, which grade into each other through occasional individuals as has been abundantly demonstrated.

BRANTA BERNICLA (L.). (173.)

BRANT.

While this species is not an abundant one within our boundaries, it is relatively a fairly represented one. Appearing in small flocks simultaneously with the others about the 25th to the 30th of March, they remain about three weeks, in the lakes, ponds, and estuaries of sluggish streams, where considerable numbers of them are shot for the market, after which they move on to much higher latitudes to rear their young. Specimens of the Brant may be found in the collections of the taxidermists, and different scientific societies in the State which have been secured in the migrations from year to year, representing both sexes and age. In autumn they reach the north-western portions of the State in considerable flocks about the first of October and remain as late as any others before passing further to the south to winter. Mr. Washburn, who visited the region of the Mille Lacs lake, and Otter Tail lake, in the interests of this department of the Natural History Survey of the State, extending his observations from the 9th of October to the 10th of November, 1885, found these birds "quite numerous near Fergus Falls," and similar reports reached me from Grant, and Bigstone counties.

It is rarely the case that some of them cannot be found in the game stalls of the City Market during the periods of their usual presence and migrations.

SPECIFIC CHARACTERS.

Bill, feet, head, neck, primary quills, tail, and body anterior to the wings, black; secondary quills nearly black; on each side of the middle of the neck, a small white crescent, streaked with black; lower eyelids with a very faint trace of white feathers; black of the jugulum abruptly defined against the

bluish silver-gray of the remaining under parts, the feathers of which have the basal portions bluish gray; axillars and inside of wings showing a darker tint of the same; the gray of the belly passes gradually into white behind, the tail being encircled all around and concealed by this color; back and wing coverts grayish-blue with slightly paler edges; rump, similar, but darker and more uniform blue, the secondaries have some concealed whitish on the inner webs towards the base.

Length, 23.50; wing, 12.75; tarsus, 2.26; commissure 1.40.

Habitat, northern parts of Northern Hemisphere.

BRANTA NIGRICANS (LAWRENCE). (174.)

BLACK BRANT.

Several stragglers of this Pacific Coast species have been brought in during the past ten years, by parties visiting the Red river valley in the fall shooting season. If they are anything more than stragglers, they must still be regarded very rare. Their identity I can vouch for, from a long familiarity with them in Sacramento and Santa Clara counties, California.

SPECIFIC CHARACTERS.

Head, neck, and body anterior to the wings deep black, passing into dark sooty plumbeous on the rest of the body, this color beneath extending nearly to the anus, and above shading insensibly into the black of the rump; middle of the throat with a white patch extending round on the sides, and somewhat streaked with black; no white on the eyelids; sides of rump and base of the tail, with upper and under tail coverts concealing the tail, and space across the anus, white; primary and secondary quills and tail, black; feathers on the sides of the body beneath the wings like the belly, but with white tips.

Length, 29; wing, 13.80; tarsus, 2.30; commissure, 1.50.

Habitat, Arctic and Western North America.

OLOR COLUMBIANUS (ORD). (180.)

WHISTLING SWAN.

Many years ago this species was believed to be a regular summer resident of the Red river valley, and not without reason, for they were occasionally met with as late as the tenth of May in spring, and as early as the twentieth of August. But these instances have proved to be very rare, and when they were reported to me some important observations regarding their identity were wanted in their later appearance. Having never observed them personally, I have been left to the conclusion that they were the young of the Trumpeters, a

species long ago known to breed here limitedly in the region referred to. That the Whistlers, however, are met with here occasionally during the early and late migrations, we are equally assured by their having been obtained at those times for taxidermists to mount. Mr. Howling kindly called my attention to them many years ago in his collections.

Mr. Shroeder, a taxidermist long known in St. Paul, had one obtained on the Red river which I was permitted to examine, but of the special history of which he could give me nothing. When passing over, in their early spring migrations, I have several times had my attention called to them by their peculiar notes, some time before I could see them at their great elevation. With my glass I could not only determine that they were Swans, but readily count them, which has been once thirty-one, and on another occasion only three, when they were not thirty yards above the forest trees amid which I discovered them. These times have usually been in March, and only once in the first days of April. They must breed as a rule far to the north of our national line.

SPECIFIC CHARACTERS.

Bill as long as the head, broad, high at the base; feathers on the forehead ending in a semicircular outline; nostrils far forward, the anterior extremity considerably more forward than half the commissure; color pure white; bill and legs black; the former with an orange or yellowish spot in front of the eyes. Immature birds with the head above tinged with reddish-brown. Tail feathers twenty.

Length, 55; wing, 22; tarsus, 4.25; bill, 4.20.

Habitat, North America generally.

OLOR BUCCINATOR (RICHARDSON). (181.)

TRUMPETER SWAN.

When the long embargo of a subarctic winter has terminated and the waning drifts of the remaining snows have been reduced to narrow borders of the forest and fences, despondent hearts from hopes deferred will wake to new consciousness of existence, like another resurrection. The senses all feel the wondrous change, and catching the impulse of nature's wide outreachings, accept their new responsibilities. The babbling of the brook once more set free, the cawing of the crow, the cheery *chink, chink* of the returning woodpeckers, appeal to every sentiment of gratitude in the reverent heart, and the cup of peaceful joy is filled to overflowing.

The quickened ear hears the honkings of the Pelicans and Geese against the very heavens, and still far above them the trumpeting of this snowy Swan. Their gracefulness of flight, the daring, giddy height, conspire to fill the soul with adoration for the wonderful, the beautiful. From their exalted pathway of the air, they rarely descend until over the most unfrequented districts, where before, they have reared their young. Extremely shy, descending in majestic circuits they do not hastily alight, until the section has been most thoroughly reconnoitered and found devoid of man, their cruellest of foes.

They live mostly upon vegetation both terrestrial and aquatic, and about the first of May nest-building is begun. The structure is loosely formed of weeds, reeds, grass and such other materials as are found convenient to the location and is superficially lined with down from their own bodies. They lay eight to ten pale green eggs. Incubation lasts four weeks, soon after the completion of which, the young follow the parents into the water. Formerly the nests were occasionally found at different places all over the State, but of late, none have been reported from any. Still the young of the year are to be seen in the vicinity of the the Red river very nearly every year after the middle of October. The latest recorded date of my personal observations, before their final disappearance was November 17th, but I have learned that individuals have been seen still later, which suggests that they were laggards from accidents or gunshot wounds.

SPECIFIC CHARACTERS.

Bill broad and longer than the head; the feathers ending on the forehead in a semi-elliptical outline; nostrils with the anterior extremity as far forward only as half the commissure; tail of twenty-four feathers; color pure white throughout; bill and legs entirely black; bill without any red spot at the base. Less mature specimens with the head above tinged with reddish-brown.

Length, 60; wing, 24; bill, 4.50; tarsus, 4.60.

Habitat, principally the interior of North America.

Order HERODIONES.

Family ARDEIDÆ.

BOTAURUS LENTIGINOSUS (MONTAGU). (190.)

AMERICAN BITTERN.

Variouly called Bittern, Shidepoke, Pumper, Stakedriver, &c., &c., according to local custom, this familiar Heron is relatively as well represented here as any other of its family. They reach us as early as the first week in April. By the 25th, they have become paired and their nests are constructed soon afterwards. They consist of small sticks, coarse grass, with more or less leaves of sedge brush and are placed directly on the ground in the most inaccessible bog marshes and sloughs. Preferably a tuft of willow sedge is chosen that gives the nest a slight elevation, yet not uniformly so, for I find them not infrequently placed between the bogs in the marshes that are devoid of all kinds of brush. A rank bunch of grass that springs up in these places, will most naturally be the place to look for them first, however. The eggs are usually four in number, of a striking drab color, with more or less olivaceous. Sometimes their nests are found in small communities but as a general thing that custom is locally disregarded. The notes of the Bittern are remarkable and are heard only during the period of pairing and nesting. They have been variously described by writers as they sound to their ears and have been rendered into *dunk-a-doo*, *pump-ah-gah*, *ponk-a-gong*, *kunk-a-whulnk*, *chunk-a-lunk*, and *quank-chunk-a-lunk-chunk*, all of which seem to me to convey as nearly a correct idea as may be obtained, as I have heard them at different times. But one must have heard them to understand how well any of them really describes their "song."

The attitude of the prairie-hen cock in booming, the turkey gobbler in gobbling is no more extreme or characteristic than is that of the Bittern in the act of disgorging himself of his in

expressibly infelicitous love notes. Standing perfectly erect and entirely motionless, the bill pointed exactly toward the zenith, the head is seen to be very slowly sinking while the body correspondingly assumes the horizontal position and the neck becomes sigmoid by its double flexion, it suddenly shoots forward and a little downward and laboriously pumps out the amorous utterances, doubtless to the entire satisfaction of the waiting ear, whether the mate's or another masculine representative of his species that accepts it as a challenge to come over and get most ingloriously thrashed. Aspectively the performance is suggestive of strangulation until "kunk-ah-whulnk" has all been ejected. If any other performance could match this in uncouthness to eye or ear, it has not been mine to witness it with either of those senses. The food consists principally of frogs, in the seizure of which their heron-like manner of remaining motionless for long periods that the unapprised reptiles may unconsciously come within easy reach, is a pretty sure guaranty that they shall have enough to eat as long as the frogs last. It is seldom that more than one individual is seen in any one immediate locality, when it must have been discovered at a distance while in its perpendicular attitude, or by some sudden surprise, for they drop the head down so slowly as to allude observation, and then run at a rapid pace through the grass, weeds, reeds and rushes to a considerable distance in some unexpected direction, and there remain hidden until all danger of discovery is past before resuming their watch for frogs and small snakes. One may pass very near where they are concealed without flushing them, as they are capable of judging very accurately whether they are actually under the eye of the intruder or not.

By the first week in August the young have attained the general appearance of the adults, and when the frogs disappear they do likewise.

SPECIFIC CHARACTERS.

Upper mandible black; the lower greenish-yellow; lores and eyelid yellow; iris bright yellow; upper part of head depressed, with the plumage there deep blackish-brown; long, yellowish-brown feathers on the neck behind shaded with darker; throat whitish, streaked with dark brown; from the posterior and lower part of the auriculars, a broad patch of black passes diagonally across the neck; back deep brown barred and mottled with many specks and streaks of brownish-yellow; quills black with a leaden gloss, and tipped with ochereous brown; legs and feet yellow, washed with pale green; middle claw pectinated; beneath pale yellowish-brown streaked with darker brown.

Length, 27; wing, 11; tarsus, 3.60; bill, 2.75.

Habitat, Temperate North America.

The Bittern is almost universally distributed wherever the food supply is found. In an hour's ride within my own county, a half dozen may be readily seen by any one acquainted with their habits, by overlooking a meadow a quarter of a mile away. He will notice what seems to be a stake in the ground rising but little above the grass. If he has a field glass, he will at once be able to make out the head and neck of his bird, but let him not think to see that head go down, or even move, should he wait half an hour, and how much longer I cannot say, for my time for observing the habits of birds has ever been too precious to stay his attitude out, but if he has a friend with him, or better a trained bird dog, the observer may send him forward, while he holds his game under his lens and he will soon see how the *stake* sinks out of sight and then he may trace the stealthy movements to another spot whence the stake will again appear.

BOTAURUS EXILIS (GMELIN). (191.)

LEAST BITTERN.

It is not a little remarkable that a species like this can remain so long unrecognized or supposably so rare when actually so common. For long years I watched for the Least Bittern before I had the pleasure of having it in my hands, and when I was rewarded I had the additional pleasure of knowing how and where to look for more of them. I have of late years found them common in their favorite haunts about ponds embraced in high reeds and flags, portions of which stand in the water. Not half a mile from the business center of my city is a pond of this character, where this species has been a regular summer resident since first I observed it nearly twenty years ago. An early visit to this pond long before sunrise, has always resulted in the catching of a glimpse of one or more of them along the borders of their covert. And I could add a score to the number of different localities where these birds may be found in their season, within three or four miles of the first. They come to the State a little later than the Greater Bitterns, generally the second week in April, and have begun building their nests by the 10th of May following. These are more commonly suspended from the reeds above high water mark. Fairly within the mass are frequent clusters or tussocks of the same, that afford the chosen supports for the nest while augmenting the concealment. Several coarse stalks are embraced in the platform, which consists of dried grass so wound

about the former as to preclude the possibility of its slipping, and into and around about which is built up the whole structure consisting thus of coarse, reedy grass, into which are woven fine, jointed green grasses, not severed from their roots in the submerged ground. But they are not always placed in this manner, for it is not unusual to find them directly on the ground, on the edge of a floating bog in shallow water, or occasionally in a sedgy bunch or bush of dwarf willows. The nest is loosely built, very little dished, and contains four to five white eggs, with a faint wash of green.

They rear two broods, the last of which is strong enough to fly well by the second week in August, and they all quit the country by about the fifth of September. Their food consists largely of leeches, to which are added lizzards, tadpoles, snails and young frogs. I have never found fishes among their ingesta, but have too much respect for the taste of the bird to doubt that they sometimes constitute a good share of a round meal.

NOTE. The circumstance of my never having met with the species for so many years after my residence in the State had begun, recalls the fact that only two or three of my volunteer assistants and correspondents have mentioned it. Mr. Holzinger, of Winona, says: "This bird is little seen, but has recently been found breeding around Lake Winona."

In this place I will say that I have never found the Least Bittern breeding in communities. However, I can easily imagine local temporary causes which might impel them to do so, and since it is a common thing for them to be closely associated with several species of blackbirds and other species of herons in their nidification, it seems as if it might be expected that they will sometimes be found breeding in communities.

Their habits are decidedly nocturnal, and their migrations are begun and terminated between two days, after the manner of another but featherless biped who quits his wonted "banks" for more northern latitudes, without the slightest regard for seasons.

SPECIFIC CHARACTERS.

Back and head above, dark, glossy green; upper part of neck, shoulders, greater coverts, and outer web of some tertials, purplish-cinnamon; a brownish yellow scapular stripe; bill slender, acute, both mandibles about equally curved; legs very short; tarsus less than middle toe; inner toe much the longest, claws long, acute; tarsi broadly scutellate anteriorly; body much compressed; head smooth; occipital feathers somewhat lengthened; lower neck behind bare of plumage; tail of ten feathers.

Length, 13; wing, 4.75; tarsus, 1.60; bill, about 1.75.

Habitat, temperate North America.

ARDEA HERODIAS L. (194.)**GREAT BLUE HERON.**

Crane island is situated in the upper portion of upper Lake Minnetonka, and has received its name from the circumstance of its being the breeding and roosting place of the "Blue Cranes," as this species is popularly called. How long it has been thus occupied is not even traditional, for it was a heronry earlier than the Indian traditions began. About the 10th to 15th of April, and occasionally a little earlier, these birds begin to arrive in small parties, at once seeking their old roosting place. A steady increase in their numbers continues for about a week, when the whole clan seems to have reached the heronry, and early in the mornings they may be seen flying far away in all directions till all have departed. An hour before the sun sets, they begin to return, but it will be some time after dark before the last have arrived. They gather into clusters, or loose parties in sections to which they resort, after having satisfied their hunger, and enter into matrimonial negotiations in which rivalries and jealousies lead to some severe contests between the males. By the first week in May all of these matters are settled, and the nesting begins from the 5th to the 10th of May. The structures consist of sticks, twigs, coarse and medium weeds of different kinds, very roughly and loosely disposed, with barely depression enough to retain the eggs, three to four in number, light bluish green in color, all of which is placed in the forks of a tree at about sixty feet elevation. The island on which the tree stands, at some day in the remote past, was evidently densely covered with lofty elms, sugar maples, oaks and basswoods, but the excrement accumulating from year to year, and age to age, has destroyed them until the number left standing has become few and considerably scattered. Since that lake has become a great summer resort, and is constantly plied with some twenty or thirty steamers of various sizes (with whistles loud enough to be heard quite distinctly fifteen miles away), three or four times as many full sailed yachts, to which may be added two or three hundred row-boats, constantly flitting back and forth at all hours of the day and far into the nights, it is a standing surprise that these birds (and their copartners, the cormorants, whom I had like to have forgotten to mention in this connection), still continue to return year after year to the same familiar spot. However, it must be confessed that from these disturbing causes, to which

should be added a long-continued practice of firing pistols at them from the steamers' decks to see the females rise in clouds from their nests, and the robbing them of their eggs by men and boys by the employment of telegraph pole climbing irons to reach them, their numbers became so sensibly reduced as to call in special legislation, some five or six years since, or all would have been destroyed or driven entirely away. I have taken all measures within my reach to ascertain the area daily visited by the "cranes" and cormorants brooding and roosting in this group, and while not absolutely certain of the exact dimensions, I can safely say it covers a circle the diameter of which is not less than eighty miles. In England it is said that all roads lead to London, so when I see or hear of individuals of these species flying regularly *from* the direction of Minnetonka in the morning, until nearly nine o'clock, and after four in the afternoon till dark, *towards* it, uniformly, I conclude that they belong there. The nearest heronry to this of which I have any reliable knowledge is about 190 miles from here. They rear but one brood in a season here now, if ever they did before. Their food is frogs, fish, snakes, mice, water beetles and slugs. From the 15th to the 20th of October they go away to the south in small flocks.

There is another heronry somewhere in the southeastern part of the State, which I have not yet succeeded in locating, but I think it is somewhere perhaps in Dodge, Olmsted or Freeborn county. A large one has long been located in Douglas or Grant county, I am credibly informed by duck-hunters. In general their distribution is co-extensive with the State, yet there are considerable sections where they do not go on account of the deficiency of appropriate food.

Mr. Washburn found them common throughout his explorations at Mille Lacs and in the different sections of the Red River valley.

Mr. Lewis found it in nearly every place he visited in the north and western parts of the commonwealth.

If intelligently cooked, the flesh of the entire Heron family is excellent eating, including the unprepossessing and most unpopular Bittern, as I can bear positive testimony, for by the courtesy of Mr. Wm. Tiffany I breakfasted with him upon it once many years ago. If there is anything which forever settles the question of man's evolution from animals lower than the monkeys, it is the attainment of prejudices respecting his food. His employment of the imagination in the domains of

scientific investigation has unduly developed it, and hence his reason dictates his stomach, but very poorly.

SPECIFIC CHARACTERS.

Lower third of tibia bare; above bluish-ash; edges of wing and the tibia rufous; neck cinnamon-brown; head black with a white frontal patch; body beneath black, broadly streaked on the belly with white; crissum white; middle line of throat white, streaked with black and rufous; bill yellow, dusky at the base and greenish above; forehead and central part of crown white, encircled laterally and behind by black, of which color is the occipital crest and its two elongated feathers; neck, light smoky cinnamon-brown, with a tinge of purple; chin and throat whitish; the feathers along the central line of the throat to the breast, white, streaked with black and reddish-brown, except on the elongated feathers of the breast; body bluish-ash above and on the sides; the under parts including the tuft of feathers on each side of the breast and belly to the crissum, sooty-black, much varied along the middle line with white; tibia and edge of the wing rufous; quills black, becoming more plumbeous internally until the innermost secondaries are ash, like the back; the elongated tips of the scapular feathers have a whitish shade; tail bluish-slate color; bill yellow, dusky green above; loreal and orbital spaces light green; iris yellow; feet olivaceous, paler above the tibiotarsal joint; claws black.

Length, 42; wing, 18.50; tarsus, 6.50; bill, 5.50.

Habitat, North America.

ARDEA EGRETTE GMELIN. (196.)

AMERICAN EGRET.

In my list of species observed fifteen years ago I gave this one as an occasional. I had found a representation of it in private collections only, since which time I had met with it in flocks of half a dozen or less a few times, and individuals still more frequently. They have been killed along the bottoms of the Minnesota river occasionally ever since Fort Snelling was located, and within the last ten years, one has been obtained on the Red river as far north as Moorhead. A friend of mine brought in a fine male from Big Stone lake last spring (1888) which he has mounted in good order.

No nests nor young have been reported, but their observation in the warmest days of July lends plausibility to the conjecture that they may breed here.

Still, I think it more probable that they are generally stragglers from flocks located below, along the Mississippi or along the Missouri river.

I have never found them later than the 25th of August, yet sportsmen are confident of having seen them in the distance on flat prairies west of the Big Woods as late as the same date in September.

SPECIFIC CHARACTERS.

Bill slender, yellowish to the tip, culmen nearly straight, more convex terminally than the gonys; middle toe more than half the tarsus, outer toe longest, claws moderate, considerably curved; tarsus broadly scutellate anteriorly; head smooth; back, in breeding season with a series of plumes longer than the tail, and curving gently downwards; tail of twelve broad, stiffened feathers; back of neck well feathered; feet black; colors pure white at all times.

Length, 40; wing, 17; bill, 5; tarsus, 6.

Habitat, America, chiefly south.

ARDEA CANDIDISSIMA GMELIN. (197.)

SNOWY HERON.

We must consider this species as in a measure a straggler, so infrequently has it been seen under circumstances of certain identification.

I have seen them several times when from their smaller size, I could scarcely doubt their being this species, but they were too cautious for me to secure any. I found one in Mr. Howling's collection many years ago and two others since, the latter of which came to him from the Red River country "somewhere." Sportsmen claiming to know the species well, insist that they meet considerable numbers of them in both spring and fall shooting along the Minnesota River in occasional years, but I am apprehensive that they confound the other species with it, (*A. Egretta*), notwithstanding their assurances that they can distinguish them. That a few visit us is certain however, and that they go somewhat beyond the latitude of St. Paul and Minneapolis cannot be disputed, but several years have intervened between any observations of their presence by myself or others. They are described as follows:

SPECIFIC CHARACTERS.

Bill compressed; culmen slightly concave in the basal two-thirds, terminally more convex than the gonys; middle toe three-fourths the tarsus; tibia bare for nearly one-half; occiput with a full crest of loosely fibred feathers as long as the bill; feathers on lower part of throat somewhat similar; middle of back with a series of plumes, with the fibrillæ distant and lengthened, plumes recurved at the tip, where the fibrillæ of

opposite sides are horizontal, but approximated in a vertical plane; they reach nearly to the tip of the tail, sometimes beyond it; bill black, yellow at base, including the loreal region and around the eye, as well as a larger basal portion of the lower mandible; legs black; lower part of tarsus behind and the toes yellow; color of plumage throughout pure white.

Length, 24; wing, 10.20; tarsus, 3.80; bill, 3.15.

Habitat, Temperate and Tropical America.

ARDEA VIRESCENS L. (201.)

GREEN HERON.

A common summer resident, found along those of our inland streams which meander the meadows and the marshes with a sluggish current, after the 10th of April. It is seldom that an hour's hunt along their rank grassy, reedy borders does not give one a sight of one or two of them. They commence building as early occasionally as the first of May in small communities, but usually about the 5th, a loose, bulky, flat nest of sticks, twigs and leaves, placed in the tops or branches of small trees in thickets. They lay about four pale-blue eggs, sometimes only three and sometimes five. They rear two broods usually.

Their food embraces frogs, fishes, slugs, cray-fish, worms, &c., which they obtain abundantly enough to make them remain in a single spot for hours when undisturbed, under which circumstances their maneuvers may be watched with a glass with great satisfaction, provided a position has been attained without the knowledge of the bird. This is no easy task, for their telescopic eyes take in every moving thing possible considerable distances away. More frequently one will find him standing in several inches of water, close to that which is still deeper, and as motionless as if he were grown there, with his head resting back upon his breast, and woe betide the reptile or fish that ventures within the radial possibilities of that neck and unerring bill. He never strikes by guess, and rarely without securing his victim, which is swallowed invariably head foremost, in the twinkling of an eye. He does not ordinarily thresh the ground with his game as the Greater Bittern often does, to reduce it to flexibility, or fractures, in order to swallow it, but selects the size best adapted to the capacities of his throat. When fishing for frogs specially his methods are somewhat modified. Instead of retaining his fixed attitude, which the frogs soon learn to recognize when their heads are

above water, he takes advantage of the moment when, with their heads immersed, each is seeking a spot in which to hide, and steps promptly but cautiously along to a favorable position, and assuming his wonted attitude with his neck drawn back over the breast, and when an inquisitive head rises, the same fatal stroke brings Johnny Crapeau's favorite "to bag." Communal as they often are in breeding, they always hunt solitarily, and seem to individually have a sort of squatter's pre-emption over a given territory, returning to it daily through the entire season. The young having become full grown by the first to the tenth of August, they may subsequently be often seen going forth in the early morning in families supposedly, and returning at evening by the same routes in like parties. I have never seen them later than the 25th of October. They seem all to disappear at nearly the same time.

Dr. Hvoslef reports them at Lanesboro and vicinity early in April and late in October, but mentions the discovery of no nests or heronries.

Mr. Lewis reports them common in all of the northwestern portions of the state as far as Pembina. Mr. Clague finds them occasionally in the lower portions of Grant county. The most frequented locality I have known for this small heron, is a low boggy marsh through which Minnehaha Creek flows, by which are thus connected Lakes Amelia and Mud, the former of which is partly and the latter entirely within the city limits. Careful observations at the twilight of either end of the day will find them there uniformly. I wish to say that they do not universally breed in communities in Minnesota, for in every instance in which I have found them doing so, I have failed to find other nests or birds. Instances have occurred under my observation, where in the entire absence of trees, or bushes of any size, they have placed the nest, composed of coarse dry weeds and reeds, and cat-tails, on a tussock in a reed-hidden quag-mire. Indeed, in common with many other species of the birds, they manifest great capacity to adapt their habits to extreme circumstances when necessary. One nest, built high and dry above the water in a pond, on the top of a muskrat's house, was pointed out to me, so secure from human intrusion that no attempt was made by the birds at concealment.

SPECIFIC CHARACTERS.

Bill acute, rather longer than head, gently curved from the base; gonys slightly ascending; legs short, tarsus scarcely longer than middle toe, broadly scutellate anteriorly; lateral

toes nearly equal; head with elongated feathers above and behind; these and interscapulars and scapulars lanceolate; neck short, bare behind inferiorly; tibia feathered nearly throughout; tail of twelve feathers; top of head and body above, glossy green; coverts edged with brownish yellow; neck dark purplish chestnut; chin and central line of throat white; body beneath plumbeous ash.

Length, 15; wing, 7.50; tarsus, 2; bill, 2.40.

Habitat, Canada and Oregon, southward to northern South America.

NYCTICORAX NYCTICORAX NÆVIUS (BODDERT). (202.)

BLACK-CROWNED NIGHT HERON.

I find this common species much more frequently in the taxidermists' shops than in its haunts, although I do so occasionally when on their grounds at twilight, and I find they breed regularly very near to if not still within the city limits. Their nocturnal habits protect them from observation, but it is known that they roost during the day in the tamarack swamps and come forth at twilight to seek their food along the borders of streams, ditches and on the marshes. The nests are constructed about the tenth of May, or a little later, in the tamarack swamps, on the trees, and are formed of sticks. More than one may occupy the same tree, but the only night-heronry I have ever seen had not to exceed a half dozen nests, unless I failed to see them, which might have been the case with all of my diligence, for they were well concealed in the thick branches of the trees which stood in a foot or more of water near one of our smaller lakes, or ponds, as the people from Maine call them. This breeding place has long been broken up. I find through one of my most reliable and indefatigable correspondents in the southern part of the State that this species is quite common there. He met them in nearly all of the summer months of their summer residence there. (J. McClintock). Mr. Lewis, perfectly familiar with all of their habits, reports them common through Becker and Polk counties, and believes them nearly universally distributed throughout the northern and western divisions of the State. It cannot be called a numerous species in any other than a relative sense here. At Thief river there is a heronry of the species, which, if carefully observed during a season or two, might be of much value in making numerical estimates. (Washburn).

Their food does not differ materially from that of other herons I think.

They retire southward by the second week of October.

I omitted to say that the eggs are somewhat variable in color from bluish green to greenish-yellow, and generally four in number.

SPECIFIC CHARACTERS.

Head above and middle of back, steel-green; wings and tail ashy-blue; underparts, forehead and long occipital feathers, white; sides tinged with lilac; bill very thick at base and tapering to the tip; culmen nearly straight for half its length, then considerably curved; lower outline of bill nearly straight; gonys proper slightly concave; legs short and stout; tarsus equal to middle toe, and covered with hexagonal scales, those anterior largest, but those on the upper portion much larger, and extending entirely across; tibia bare for one fifth; lateral toes nearly equal, the outer rather longest; claws small, considerably curved; tail short, of twelve broad, rather stiff, feathers; head with the occipital feathers elongated and with two or three very long, straight feathers (long as bill and head) springing from the occiput; these are rolled up so as to appear like a single cylindrical feather; back of neck covered with down, but not provided with long feathers; scapular and interscapular feathers elongated and lanceolate; the webs scarcely decomposed; upper part of head, upper eyelids, occipital, crest, scapular and interscapular region, dark lustrous steel green; wings and tail ashy-blue; under parts, forehead and long occipital feathers, white passing into pale, ashy-lilac on the sides and neck above, as also tinging nearly the whole under parts; the region along the base of the bill, however, nearly pure as on the tibia; bill black; loreal space green; iris red; feet yellow and claws brown.

Length, 25; wing, 12.50; tarsus, 8.15; bill, about 3.10.

Habitat, America.

NYCTICORAX VIOLACEUS (L.). (203.)

YELLOW-CROWNED NIGHT HERON

The first time I met the Black-crowned Night Heron in the State was in Mr. William Howling's taxidermal shop in 1864 I think, when standing beside it was a Yellow-crown. Although I began to meet the former from time to time, it was several years before I saw another of the latter, till I found it again in a private collection in St. Paul. I have never taken the bird, but in all the instances in which I have seen these specimens, I have ascertained that they were collected here, and under precisely the same circumstances in which the others were found. I know nothing more of the bird locally than I did

twenty years ago. I can only count it an occasional straggler, presumably individuals which become mixed with the other species in migration.

SPECIFIC CHARACTERS.

Neck and body uniform grayish-plumbeous; head bluish ash; hood and a broad patch on the side of head yellowish-white; scapular and interscapular feathers dusky, edged with grayish-plumbeous.

Length, 24; wing, 12; tarsus, 3.75; bill, about 2.75.

Habitat, semi-tropics.

Order PALUDICOLÆ.

Family GRUIDÆ.

GRUS AMERICANA (L.). (204.)

WHOOPING CRANE.

While yet the prolonged winter maintains its relentless hold upon the northland, and deep snows conceal the demarking shorelines of the lakes and streams, the Whooping Crane may be faintly heard, and often seen against the cold blue sky, winging his dauntless way to some unknown open sea still nearer the undiscovered pole. In the last days of February sometimes, but oftener in the third week in March, flocks of ten to twenty are seen, and occasionally on to the 15th of April such flocks continue to arrive, only a few individuals of which remain to breed in the remote portions of the State.

The only evidence I have that it breeds here is circumstantial. Through a course of many years observation, individuals of the mature *white* birds have been obtained or well identified during every month from March to November inclusive, quite a number of which have found their way into the collections of museums and private individuals. Both the Minneapolis and St. Paul Academies of Natural Sciences have them, and I think there is one in the museum of the State University, but I do not know when they were all obtained. Amateur oölogists have several times brought me the eggs to purchase, claiming that they were obtained in some part of the State, but I had doubts about them which made them really of no value to me. Two such were nearly four inches in length, with their reputed color, markings, and warty roughened surfaces.

They inhabit the most out-of-the-way morasses and impenetrable swamps, with little else but a knowledge of the local habits of the larger waders to stimulate careful research by competent observers.

I have noticed a single individual at different times during the summer, a mile distant from my nearest approach, spearing frogs, snakes, &c., and as many times resolved to resort to a mud boat that could be poled over the bogs and mire, believing that due search might be repaid with a nest and eggs. When moving to any considerable distance, they mount up to great elevations, but ordinarily in their haunts, they fly barely above the top of the reeds, brush, &c. Fish, frogs, slugs, worms, tadpoles, snails, snakes enter into their bill of fare. Individuals of this species linger into November once in a while, if the fall is rather prolonged.

In 1883 they entered the State on March 25th, and in 1864, February 27th, when we had an unusually early spring.

"A few birds of this species shot near Fergus Falls." (Washburn).

Dr. Hvoslef says that he met them in March, 1886, at Lanesboro; but makes no reference to their remaining through the summer.

Mr. Treganowan reported them constantly seen in the summer months in Pembina county, but nowhere numerous.

SPECIFIC CHARACTERS.

Bill deep, compressed; lower mandible as deep along the gonyx as the upper opposite to it; gonyx convex ascending; commissure straight to near the tip, thence a little decurved and crenated; color pure white; primary and spurious quills with their shafts black; space in front of the eyes and extending backward between them to a point on the occiput, and below them involving the whole cheek to a point behind the ears, blackish; this space having the feathers reduced to stiff hairy black shafts, but concealing the warty and granulated skin; feathers on middle of nape above plumbeous-dusky.

Length, 52; wing, 24; tarsus, 12; commissure 6.

Habitat, interior of North America.

GRUS MEXICANA (MÜLLER) (206.)

SANDHILL CRANE.

The rapid settlement and extensive cultivation of the lands of the State has somewhat modified the habits of this species of the Cranes. Twenty-five years ago, they bred extensively in several of the southwestern counties, where now they are seldom seen except in migration.

They still breed in the northern and western sections, where the uninhabited prairies are large and flat, affording all the

conditions of food and protection. They reach us the first week in April, four years out of five, and commence incubation by the first week in May. They generally gather loosely together some dried, coarse grasses and weeds for the nest, in which they deposit from two to four drab-brown, rough-shelled eggs.

In many instances, the indications of a nest are ridiculously small, and not infrequently entirely wanting. I have never known them to rear more than one brood in a single summer, but there are cases in which for some reason the nesting has been exceptionally delayed, and quite young birds are seen late in July. The earlier birds, although yet unable to fly, will give a man a lively race to overtake them when they are six weeks out of the shell. In Noble and Jackson counties, some ten or twelve years ago, the Sandhill Cranes reared their young in great numbers, on the dry flat prairies, where many of them were often taken before they were grown enough to fly. Rev. Mr. Mitchell, of St. Paul, then residing in this City, passed through that section at the time that the young were in this stage of development, and ran one of them down, which he brought home with him, and subsequently made it a present to me. I kept it until it was two years of age, and took great pleasure in studying its peculiar habits and tractability. It was a great joker in its way, always getting the better end of things. Nothing possible that it could swallow failed to get into its maw, from a pocket knife, double-ten nail, teaspoon, spools of thread, and bits of tin, to a dozen large sized marbles. Of course, these were after a time regurgitated, as all indigestible matters are with many of the birds of other orders also. He was fond of toads in the absence of frogs and fishes, and did not object to small chicken when he did not get a supply of his favorite food. By keeping his wings cropped, I was enabled to allow him considerable latitude, and he would often enjoy a pose on one foot, while the other was drawn close to his body, seeming to be asleep until something unusual aroused him. Immediately upon discovering him, big dogs and little dogs would dash at him to seize him, till noticing his apparent indifference, the smaller ones would desist, but the larger ones, more selfreliant would venture in the radial reach of his bill, after which they invariably changed their minds, finding they had no further use for "Sandie," a name given him by Mr. Mitchell, upon his capture.

My faith in his ability to defend himself against dogs became so strong that upon the application of several parties with vicious canines, to show what their special dog could do, I challenged any and all, one at a time, to attack him. One of the largest in the city was allowed to open the tournament in the presence of many witnesses. Sandie was taken out onto the lawn in front of my home, and after various comical familiarities in the way of eating unheard of things offered him, posed quietly on one foot, and having closed his eyes as an expressive hint that he was satisfied for the time to suspend performances, when we all withdrew a little distance, and a bouncing dog—a cross between a mastiff and Newfoundland—was shown the stilted biped, and stayed not a moment in his “going for him.” Sandie, whose whole demeanor was under the closest notice, partially opened his windward eye, but remained standing upon the single foot, without in the slightest changing his position, his doubly curved neck, head and bill, drawn well back upon his body, till the onrushing dog was within a half of a yard of him, when his closed, acutely pointed bill and head shot out like an arrow from a bow, and the ferocious canine doubled up into the shape of a letter “C,” and peeling for home, howling as if in the agonies of an attack of colic, left the sponge high in air, never again to challenge a Sandhill Crane to combat. Never afterwards would any one who witnessed the short “mill” permit *his* dog to give or accept a challenge from Sandie. Sometime after this I presented him to the Central Park Museum, in New York City, where it was my great privilege to see him after a number of years, and again several years later, on my way to Europe in 1882, found him without any indications of increasing age or infirmities, and Mr. Conklin, the manager who received him from me originally, assured me that Sandie was all right, and appeared to greatly enjoy the considerable numbers of his species associated with him in that paradise of bird incarceration.

SPECIFIC CHARACTERS.

Bill compressed; lower mandible not as deep towards the tip as the upper; gonys nearly straight, in the same line with the basal portion of the bill; commissure decidedly curving from beyond the middle to the tip, where it is even, not crenated; color bluish-gray; primaries and spurious quills dark plumbeous-brown; the shafts white; cheeks and chin whitish; entire top of head bare of feathers, warty and granu-

lated, thinly beset with short scattered black hairs; feathers of occiput advancing forward in an obtuse angle, the gray feathers along this point and over the auricular region, tinged with plumbeous.

Length, 48; wing, 22; tarsus, 10; commissure, 6.

Habitat, interior of North America

I found immense flocks of Sandhill Cranes in the Sacramento valley, not far from the foothills of the Sierra Nevada mountains, in 1870, about the middle of February. But not any larger are found there than in the flat prairies along the Red river in northern Minnesota, two months later in the spring. There are times at that season of the year when their hoarse crotchings may be heard almost continuously in some localities.

At the time of mating, the males have a habit of rising to immense elevations, and beating large circles while they maintain their notes for hours at a time. These can be distinctly heard after the bird has risen to such a height as to be beyond the range of the best human vision.

Family RALLIDÆ.

RALUS ELEGANS AUDUBON. (208.)

KING RAIL.

For many years after I became a resident of the State, my duties called me daily considerable distance into the country in various directions, and not infrequently in the night. In my solitary rides I became familiar with almost every sound habitually heard in the darkness, one of which came uniformly from certain marshy water courses, and the borders of reedy ponds near which I passed. At such times my ears were the principal organs of sense, and I noticed amongst the many sounds, one that seemed to formulate the syllable *greck*, repeated four to five times in succession, with the heaviest emphasis on the first utterance, which diminished with each repetition, the last being considerably less emphatic, yet still fairly distant.

Its resemblance in some respects to the notes of the Virginia Rail, suggested to me the King Rail, but I could neither find one myself in all my explorations nor could I learn of any one else finding the first individual of that species, until in the summer of 1875, Mr. George W. Tinsley brought me one for identification. He obtained it on the first day of August, on the Minnesota river bottoms, some ten to twelve miles south of Minneapolis. It proved to be an adult male in remarkably fine plumage. He sought for the female and nest or young, but in

vain, for if there were either, the concealment was too complete. The location abounded with wild rice and reeds, as those in which I had so often heard its notes did. Since then I have secured several, and have had it reported by different correspondents from widely severed sections of the province with which my investigations are specially concerned. The earliest record of its observance is May 5th, and I think will not soon be found much earlier, for from an average in my personal notes I find they arrive about the twelfth to the fifteenth.

The exact date it is impossible to arrive at, as their movements are in the night. That they breed in many sections cannot be reasonably doubted after having been observed so many times in June and July, although no nests nor young broods have yet been found. They appear to have all gone from those localities where hitherto found, by the fifth to the tenth of September, although from the variability of the seasons from year to year, instances may occur in which they will be met with still later. Their food is principally leeches, worms, snails, and aquatic insects, but in the season when seeds and grains are ripe, they fatten readily upon them, as we are informed by several writers. This is the largest species of the Rails in the United States, as well as the most beautiful.

SPECIFIC CHARACTERS.

Upper parts olive brown, with longitudinal stripes of brownish-black, most numerous on the back; line from the base of the bill over the eye, dull orange-yellow; space before and behind the eye brownish-cinereous; throat and lower eyelid white; neck before and breast, bright rufous-chestnut; sides, abdomen, and under tail coverts, with transverse bands, of brownish-black and white, the dark bands being the wider; tibia dull yellowish-white, with spots and transverse bars of ashy brown; upper wing coverts reddish-chestnut; under wing coverts black, with transverse lines of white.

Length, 17; wing, 6.50; tail, 3.

Habitat, United States.

RALLUS VIRGINIANUS L. (212.)

VIRGINIA RAIL.

This bird is very generally distributed over the country where the conditions exist for its maintenance. No one can tell just how or when they arrive, but either very early in the morning or late in the twilight at evening. Like its congeners, it is somewhat of a nocturnal species and makes its pilgrimages, as well as its local excursions in the gray of the morning or in the

gloaming of the evening. They are found to have arrived about the first of May with great uniformity, and after about three weeks the nests are built, and consist of a pile of weeds and grass of considerable bulk, having only about an inch in excavation, sometimes a little deeper, into which they deposit eight to ten eggs. I should say that when the first egg is laid the depression is very slight indeed, but the male continues to build up the structure around the female, or she rearranges the material so as to increase the elevation around herself, or, which is the more probable, the weight of her narrow body upon the loose, light materials, continues to deepen the excavation for sometime after she begins to occupy it. The color of the eggs is a dark, dirty buff, blotched with different shades of brown, or a reddish and brown. Their habits confine them to swamps, marshes and meadows difficult to approach, and are therefore less frequently discovered. From these considerations we are justified in the presumption that they may be much more numerous than at first appears. Except in unusually favorable seasons they leave in their autumnal migrations early in September, but they are occasionally seen as late as the 25th of that month. During the summer I find them about the reedy bays of most of the lakes in different seasons and not infrequently along the marshy borders of several streams within an hour's ride of my home. Examples of this species are often to be seen mounted, in the shops of the taxidermists, representing both sexes and the young of the year.

Although Mr. Washburn made his explorations of the Red river valley between the 28th of July and the 12th of September, for some reason or other he failed to find these Rails, although he met with Soras in abundance everywhere. Mr. Holzinger reports them as frequently seen about Lake Winona. I am not a little surprised that so careful an observer as Dr. Hvoslef did not mention their presence at Lanesboro.

SPECIFIC CHARACTERS.

Much smaller than either the King or the Clapper Rail, but resembles them both in form and the former in color. Upper parts olive-brown with longitudinal stripes of brownish-black; line from the base of the bill over the eye reddish-white; throat white; neck before, and breast bright rufous; abdomen and under tail coverts, with transverse bands of black and white, the black being the wider; upper wing coverts bright rufous-chestnut; under wing coverts black, with transverse lines of white.

Length, 7.50; wing, 4; tail, 1.50.

Habitat, North America.

PORZANA CAROLINA (L.). (214.)

SORA.

"Thin as a Rail" is a very common expression, without much sense or significance until a genuine Rail has been looked upon, after which its figurative applicability receives a new force. The relative depth and breadth of the body when seen explain it all. Everything is adapted to the place in which Infinite Wisdom placed it; the laterally expanded Goose, as well as the laterally contracted Rail. The one with its webbed toes for a natatorial life; the other with its immoderately elongated, disenthralled toes to run, squirrel-like over the lightest drift-wood and expanded lily pads on the water. The casual straggler, with only his cane in his hand, in languid idleness sitting down on a log near an expanse of the water-lillies about sunset, will see more of these birds in a half hour of observation, than a collector will in ten days of constant tramping. Tail erect, the bird is seen tripping along the debris of the shore, and onto the frail, floating lily-pads, pausing not a moment before an open space, but dropping into the water, swimming unconcernedly across to more lilies or a point of drift, seizing an insect first on one side and then on the other, till it disappears in the twilight, or beating a circuit it returns again. In the mean time, more individuals have come upon the scene, and there are a half dozen, busily and cheerily searching for the wanted food, while they all keep up a rather subdued "*ca-weep-eeep, ca-weep-eeep-ip-ip-ip*" like a flock of young domestic chickens.

These birds reach Minnesota about the 25th of April, and begin to build by the second week in May. The structure consists of weeds and grass in abundance, making a large pile for the size of the bird, hollowed somewhat, and placed on a bunch of coarse grass, in the marshes. They are said to be sometimes found under extremely different circumstances, as brier patches, cranberry vines, or even under the current bushes in a country garden, but if the full history of such cases could be known, a sufficient reason would be revealed for the exceptions. The eggs are a yellow-drab, with the slightest tinge of olive-green, and from five to ten in number.

Their food as has already been indicated, is made up of different forms of aquatic insect life, to which must be added small molusca, crustacea, and seeds of different kinds. They remain until late in October, very frequently. This is by far

the most abundant species of the Rails which spend their summers in nearly all parts of Minnesota. In speaking of his observations of this species in the Red river valley Mr. Washburn says:—"They are extremely abundant everywhere in the marshes and sloughs. During the summer, one only catches occasional glimpses of them, although their *crek, crok, crek*, is heard everywhere in the reeds. In September, however, I find the young and old birds more easily observed, there being more of them, and consequently they are less shy. They are then seen running over the reedy surface of the ponds, and slipping in and out among the rushes and reeds that fringe the shores." The same gentleman found them still common in the meadows of Otter Tail county between October 9th and November 10th. Mr. Westhoven told him he had often captured them when mowing in the meadow, by placing his two hands quickly over the spot in the grass where he had seen them go down, the grass holding them effectually without injuring them.

Few but those who are specially interested are apt to notice the little busy Carolina Rails, so well concealed do they keep themselves in the presence of man, but after one has the secret of their habits he may easily find and make his notes in their closest proximity.

In the early history of Minneapolis a fifteen minutes' walk in almost any direction, just after sunset, would place the Rail-hunter in its haunts, and again the same in the gray of the morning. Amongst the later haunts in which I have found it abundant for its kind is one along the northwestern shores of Lake Calhoun (Mendoza?) where a narrow tamarack swamp touches it for a distance of about 100 yards, and another about a mile west of the Falls of Minnehaha.

Mr. Efell, who had been spending some time in the vicinity of Moorhead late in the summer, became very much interested in their local habits from finding their nests to be quite common in the cultivated fields, especially the corn fields; the nest was degenerated to a simple depression in the soft earth, with a slight lining of weeds, of which there were generally an abundance. This seemed quite remarkable to one who cannot see *through* evolution, but it shows that when we have written up the natural history of the world, we shall need to do it all over again every season or two.

SPECIFIC CHARACTERS.

Space around the base of the bill extending downwards on the neck before and over the top of the head, black; under parts greenish-brown, with longitudinal bands of black, many feathers having narrow stripes of white on their edges; behind the eyes, side of the neck and breast, fine bluish-ashy, with circular spots and transverse bands of white on the breast; middle of abdomen and under tail coverts white; sides and flanks with transverse bands of brownish-black and white; bill greenish-yellow; legs dark green.

Length, 8.50; wing, 4.25; tail, 2.

Habitat, temperate America.

PORZANA NOVEBORACENSIS (GMELIN). (215.)

YELLOW RAIL.

I introduce this Rail with the satisfaction of having seen enough of them to regard them no longer as mere semi-occasional stragglers, but as rare summer residents. Mr. Shroeder, of St. Paul, for many years the only taxidermist in that city, had two specimens of them in 1865, and Mr. Howling of Minneapolis, secured one in 1869, since which I have found two more in private collections. I have never seen one of them alive. I could not learn who obtained those in the collections of either of the taxidermists, but the others were secured by two hunters* who supposed they were "some new kind of snipe." I know nothing of their local habits except that those referred to were obtained in the season when the other Rails were breeding. I hope to learn more about them in other localities in the State in due time.

SPECIFIC CHARACTERS.

Entire upper parts ochre-yellow, with longitudinal wide stripes of brownish-black, and transverse narrow stripes of white; neck and breast reddish-ochre-yellow, many feathers tipped with brown; middle of abdomen white; flanks and ventral region with wide transverse bands of dark reddish-brown and narrow bands of white; under tail coverts rufous, with small spots of white; under wing coverts white.

Length, 6; wing, 3.25; tail, 1.75.

Habitat, eastern North America.

NOTE. But one seen since the above was written ten years ago.

* Jas. Smithson (since dead) and John R. Smith, of Lockport, N. Y.

PORZANA JAMAICENSIS (GMELIN). (216.)**BLACK RAIL.**

I record this southern species entirely upon a report that one individual was taken last year in Fillmore county. Its description was so well given that, without seeing the specimen, which was taken to some eastern collection before I had an opportunity to examine it, I believe there can be no reasonable doubt of its identity. Besides, it is a matter of record that it has been obtained in Wisconsin several times, a good many years since. (Birds of the N. W., Coues.)

SPECIFIC CHARACTERS.

Smaller than the Sora, or any other North American Rail. Head and entire under parts bluish ash, or nearly slate color; darker and nearly black on top of head; abdomen and under tail coverts with transverse bands of white; neck behind and upper part of back dark reddish-chestnut; other upper parts brownish-black with circular spots and irregular transverse stripes of white; quills brownish-black, with small spots of white; tail nearly same colors.

Length, 5; wing, 3.25; tail, 1.50.

Habitat, middle and southern states.

L. B. R.

GALLINULA GALEATA (LICHTENSTEIN). (219.)**FLORIDA GALLINULE.**

This is another species which I found in the hands of Mr. Shroeder as long ago as 1865. Since then I have had ample opportunity to decide that although not common, it is a regular summer resident, breeding in the Minnesota River bottoms at Big Stone lake, and along the Red river.

It has been seen very rarely earlier than in June, when they were unquestionably breeding, although in one or two instances it has been observed in April, thereby showing that it migrates in all probability as early as the Rails do, and possibly the principal ducks. One nest obtained by a gentleman residing at Fort Wayne, Indiana, (Mr. George), and brought in with the bird, was constructed entirely of reeds, which constituted but the upper portion of a mass that had been built up out of the water. It contained ten eggs of a light brown color, spattered and splotted with reddish-brown, more marked about the larger end. Other nests have been described to me as having

been constructed of different materials, and placed on floating debris. The newly hatched young resemble black chickens in their appearance and notes. In their habits they resemble the Rails.

Langille, in his work, "Our Birds and their Haunts," page 403, says of the young of this Gallinule:—"These birds which swim, dive, or run upon the lilly-pads with equal ease, are to be associated with still waters, and with that queen of our ponds and lakes, the sweet-scented water-nymph. No infant of a royal household ever sported under a more beautiful canopy than is found by these Gallinule chicks beneath the snowy wreath of odorous petals and central crown of gold, standing like an elegant sunshade in that quiet nook, which mirrors the bluff and the surrounding landscape."

SPECIFIC CHARACTERS.

Frontal plate large, obovate, terminating square on top of the head; bill shorter than head, rather thick, compressed; wing rather long; tail short; legs moderate; toes and claws long and robust; head, neck, and entire under parts dark-bluish cinerous, frequently nearly black on the head and neck, and generally lighter on the abdomen; a few feathers on the flanks widely edged with white; shorter under tail coverts black, longer ones white; upper parts brownish-olive, darker on the rump; quills dark brown; tail brownish-black; frontal plate and bill, bright red, tipped with yellow; tibia with a bright red space on the bare portion next to the feathers; lower portion of the tibia, tarsus and toes yellowish-green.

Length, 12.50; wing, 6.75; tail, 3; bill, 1.25; tarsus, 1.75-2. Habitat, temperate and tropical America.

FULICA AMERICANA GMELIN. (221.)

AMERICAN COOT.

A most abundant and universally distributed species, reaching us but little if any later in spring than the Mallards, breeding in extensive communities on inaccessible bogs, with nests of half rotted reeds loosely built, in which they lay ten or a dozen dirty-cream eggs, speckled and spotted with dark-umber. This is the terse record of the Coot or Mud Hen, in Minnesota.

From the Iowa line to the British possessions, the testimony of observers is the same, that they are "abundant everywhere." Mr. Washburn's report of the ornithology of Otter Tail county speaks of their presence in great numbers on a little lake near Dead lake as late as the 26th of October (1885),

even after the ice had formed, leaving only small patches of open water into which they crowded in a dense black mass. Quoting from his memorandum of the 21st, he says:—"Last night was cold and still, and this morning it is a comical sight to see them standing on the slippery surface of the ice. When alighting, the impetus of their flight causes them to slide along like a schoolboy on skates. A foot slips from under one, down it goes, sprawling with outstretched wings, but soon regaining its feet to try again. In the unfrozen spots, the water was black with them, mingled with Ducks, the whole looking like a compact black body, while on the edges of the ice, large Mallards and Red-heads stood looking with suspicion towards the spot where I stood."

Rev. J. H. Langille's description of many of the habits of this species is so nearly like the notes I find in my own note book, that I should subject myself to the suspicion of plagiarism if I did not either reword them, or quote him, so I accept the latter alternative, with the cheerful acknowledgment that I think him entitled to the copyright, for although the later written, they are the better. He says in his "Our Birds in their Haunts," pp. 405-6; "Its breeding habitat is from Northern New England, the Great Lakes, and corresponding latitudes, northward. It breeds in such abundance as to be the characteristic bird on St. Clair flats, where they are as common as hens in a farm yard. The nest is in reedy pools or shallow water about rivers, lakes and ponds, composed of dried grasses and sedges, after the manner of the Rails and Gallinules, sometimes tied to the tall clumps of sedges, and yet resting on a mass of floating debris; sometimes resting on the dry ground near their watery abodes. On St. Clair flats it is a floating nest, anchored to the cat-tails and sedges, resembling that of the Common Gallinule, but generally placed further out in the flooded marshes, towards the channels and the lake.

"Some twelve inches in external diameter, and rising about eight inches above the water, it is almost invariably built of the dried and bleached leaves of the cat-tail; the saucer shaped interior being often lined with fine marsh grass. Like that of the Gallinule, the nest often has a gradual inclination on one side, forming a convenience for the bird to enter from the water. So free is the motion of this nest, that it may rise and fall with the changes of water level, or rock in the storm with perfect safety.

The eggs, some 9-14, 1.87×1.27 to 2.00×1.80 , are slightly tinged with brown being very minutely specked and spotted all over with black, or dark brown, and so near the color of the bleached material on which they are laid, as scarcely to be discernible at any considerable distance. The bird does not sit very closely, but running on the debris or water for a few feet, takes wing with a peculiar splatter, never rising high or flying far. When swimming, the Coot will often allow an approach within shot range, then starting on a run on the water it will rise into the air gradually with a spitting, splattering noise, which soon becomes very familiar and distinguishable to the ear. Often shaking the large lobed feet when clear of the water, it flies with the bill pointing down and the feet bending upward, its broad wings differing from those of the Ducks; and its near splash into the water being about as peculiar to itself as is its noise on rising. Very properly do the western hunters call this bird the "Splatterer." When the black clouds of a near thunder storm are overhead, its white bill in front of its black head becomes very conspicuous, fairly gleaming with whiteness. It is decidedly a noisy bird, its *coo-coo-coo-coo-coo* being heard both day and night, the first note being prolonged on a much higher key, while the rest are somewhat accelerated. It will often *quack* similar to a duck, and has other notes too unique and difficult of description to be given here.

"The Coot is quite playful on the water, and when the male stretches his neck forward, partly elevates his wings like the swan, and spreads his tail, showing the white underneath, he is quite a beauty no doubt, in the eyes of the female."

SPECIFIC CHARACTERS.

Head and neck glossy black, with a tinge of ashy; under tail coverts white; entire other plumage dark bluish cinereous or slate color, with a tinge of olive on the back and darker on the rump; edge of wing at shoulder and edge of first primary, white; secondary quills tipped with white; rump frequently tinged with brownish; bill very pale, or nearly white, with a transverse band of brownish black near the end, the tip white; legs dull grayish green.

Length, 14; wing, 7; tail, 2.

Habitat, North America.

Order LIMICOLÆ.

Family PHALAROPODIDÆ.

CRYMOPHILUS FULICARIUS (L.). (222.)

RED PHALAROPE.

The Phalaropes are chiefly distinguished from the other families of the order to which they belong by their lobate feet. There are only three species known in this country, and they are divided into two genera. This one stands alone in its genus, but is a companion of the Northern Phalarope in its breeding only in the arctic latitudes so far as is at present known. It is only a transient migrant here, seen in its spring migration about the 10th of May, and again in August, usually not far from the 25th in its southern movements. I have generally found them at those times occupying sandy knolls in the vicinity of the smaller lakes and ponds, yet not infrequently on the dry, cattle grazed prairies; notably in early times in the vicinity of Fort Snelling and westerly from there upon the highlands along the Minnesota river. When looking for them I have seldom been disappointed in finding them very regularly at these times and in these localities until in late years they have sought more retired spots to avoid the pothunters, whose bags bear testimony that they still visit us at the usual times mentioned. They remain about from two to three weeks, when the maternal impulse sends them to their chosen latitudes for breeding in their spring migrations, and towards the south for food in their autumnal

Should the time of their migration be characterized by extremes of the weather, they remain but a very short time. I have seldom failed to find more or less of them in the hands of those indefatigable taxidermists, Messrs. Wm. Howling and Son, at these seasons, freshly procured for mounting to fill orders from distant sections for museums, or for private collections. Mr. Washburn's visits to the Red river country were a little too early for their presence.

SPECIFIC CHARACTERS.

Bill strong, flattened and widened towards the end; wings long, tail short; legs short, plumage thick and compact like that of the swimming birds; head above, space around base of bill, throat and back, brownish-black; feathers of last edged broadly with pale, ochre-yellow; wings and tail ashy-brown, paler on the wing coverts; greater wing coverts widely tipped with white; stripe on cheek white; entire under parts deep, brownish red, inclining to purple on the abdomen, and with a glaucous cast in very mature specimens; under wing coverts and axillaries pure white; bill greenish-yellow; feet dark-bluish.

Length, 7.50; wing, 5.25; tail, 2.75; bill, 1; tarsus, 0.75.

Habitat, northern parts of northern hemisphere, breeding in the arctic regions, and migrating south in winter; in the United States south to the Middle States, Ohio Valley, and Cape St. Lucas. Chiefly maritime.

PHALAROPUS LOBATUS (L). (223.)

NORTHERN PHALAROPE.

About as well represented as the Red, the Northern Phalarope reaches us at the same time in May with the other, in small parties of five or six, or even less in many instances, in the vernal migrations. In the latter part of August, they return with their numbers somewhat augmented, which are still increasing somewhat until their final departure in September. Graceful in every movement, and extremely active in procuring their food, which consists of small mollusks, insects, worms, and crustaceans, they cannot fail to arrest the attention wherever seen. It affects pools, and ponds of water containing different forms of aquatic insect life. A tender bird, all leave on the first advent of the first decided frost, which has occurred within my own memory several times, on the night of August 31st and September 1st.

They are known to breed in the higher latitudes, but none are known to do so this side of the British possessions.

SPECIFIC CHARACTERS.

Neck encircled with a ring of bright rufous, with a stripe of the same on each side; head above and neck behind, sooty-ash; back, wings and tail, brownish-black, paler on the rump, mixed with bright ferruginous on the back; tips of greater wing coverts white; sides and flanks ashy, frequently mixed with reddish; throat, breast, and abdomen white; bill, legs and iris dark brown.

Length, 7; wing, 4.50; tail, 2.25; bill, 1; tarsus, 0.75.

Habitat, northern North America.

PHALAROPUS TRICOLOR (VIEILLOT). (224.)**WILSON'S PHALAROPE.**

Of all the shore birds which are ever seen about our ponds and numerous lakes, Wilson's Phalarope is the most beautiful. Reaching the lower borders of the State by the 25th of April, they gradually spread over its whole extent where the food-conditions invite them, and after about three weeks, build their nests in canebrakes, and reed-embraced pools, in close proximity to those of several other species of water birds. The nests are constructed of fine reeds, grass, and invariably a little moss,—sometimes principally of moss with no reeds and but little grass, and is a loose structure, placed on a hummock of moss, or in a tussock of reeds or grass.

They contain three to four olivaceous-drab colored eggs, spotted all over with large spots of dark umber. These colors vary exceedingly in different specimens.

The young are following the parent by the third week in June, and are full grown by the first week in August. They remain but little later than the other Phalaropes in the autumn generally, although not very infrequently individuals have been obtained in October.

Their chief food seems to be mollusca, but embraces exceptionally nearly everything eaten by the other Phalaropes, and the different species of Snipe.

Their habits are so occult that it is no easy task to observe them. Wading about in a busy, contented manner in a shallow pool, picking out its food nimbly, and unerringly, or creaking a note repeatedly that is much more easily learned than written, they seem the embodiment of beauty, grace, and absolute contentment amidst the humblest circumstances of environment.

A good number of these birds have found their way into the different taxidermal and scientific collections in the State, in different stages of development, and many more find their way into the markets in snipe season during fall shooting.

My greatest difficulty in getting the eggs of this species into my records rightly has been the popular confounding of the birds with the "snipes." I have insisted upon the bird accompanying the nests and eggs until in two instances I have attained certainly, and in one fairly so, although I have never had the great pleasure of securing them myself. Their local breeding habits are above any question.

SPECIFIC CHARACTERS.

Larger than either of the other Phalaropes; bill, slender, flattened; wings, long; tail, short; legs, moderate; tarsus, compressed; plumage very compact; head above and neck behind, light ash; wide stripe behind the eye, reddish-black; neck before, and wide stripe running upwards onto the back, bright reddish-brown, darker on the sides of the neck; back, wings, and tail, cinereous; darkest on the wings, and mixed with reddish on the back; rump, and upper tail coverts, white; entire under parts white, except the neck before, which is pale reddish; bill and legs, black.

Length, 9.50; wing, 5.50; tail, 2.25; tarsus, 1.25.

Habitat, temperate North America.

Family RECURVIROSTRIDÆ.

RECURVIROSTRA AMERICANA GMELIN. (225.)

AMERICAN AVOCET.

These waders are less abundant in Minnesota than in either of the Dakotas, but I have met them in their spring migrations almost uniformly, and in small flocks occasionally in the autumn. They arrive about the first week in May, sometimes a little earlier, and mostly disappear in a few days, the majority going either farther north, or west into the states mentioned, where the general conditions are more favorable for their food. Except in San Diego, California, I have found them mostly about the shores of small lakes in dry sections, many of them sandy, and without much if any timber. Nearly every dryland lake has somewhere along its outline a marshy, muddy border that affords just the kind of condition most likely to be charged with an abundance of larvæ and worms which constitute their chief diet. However, during migration and the interval between their arrival and the nesting, I have found them along the borders of running water, and the sandy, stony shores of large lakes like Minnetonka, but only in pairs. At these times they are not infrequently associated with the Stilts. The only nest that I ever saw was on the shore, perhaps not more than a yard from the water, and consisted of little more than a moderate depression in the dry earth between tussocks of coarse grass, with some fragments of grass and weeds laid loosely around it. It contained four eggs the ground color of which was an olivaceous-drab, but varying in intensity in the

entire clutch, and marked very distinctly with different shades of brown. They are less frequently seen in the fall than in the spring, and are all gone sometime before the frost has cut off their supply of food.

Since my first records of this species I have been told that several specimens have been seen along the Minnesota bottoms during summer, leaving a reasonable presumption that they breed there limitedly; and rumor makes them occasionally seen at the same season along the Red river in the vicinity of Moorhead, but with how much assurance of being correct I cannot say.

SPECIFIC CHARACTERS.

Bill rather long, depressed; wings long; legs long; tarsi compressed; tail short; head and neck pale reddish-brown, darker on the head, fading gradually into white; back, wings, coverts and quills, black; scapulars, tips of greater wing, coverts, rump and tail, and entire under parts, white, the last frequently tinged with reddish; bill brownish-black; legs bluish.

Length, 17; wing, 9; tail, 3.50; commissure, 3.75; tarsus, 3.50. Habitat, Temperate North America.

HIMANTOPUS MEXICANUS (MÜLLER). (226.)

BLACK-NECKED STILT.

This wader has as nearly the same history in Minnesota as the Avocet as any description could make it. Arriving simultaneously, they are found essentially in the same localities, and breeding alike as to nesting and feeding. However, I will say that this species is found more abundantly represented in those places where the Avocets are least, and quite as well represented in their main breeding locations on the Red river. I have never seen its nest "in situ," but the eggs I have seen. They are pale brownish-olive, and covered with dark brown splotches, varied with lighter brown.

Mr. Lewis reports them common along the Red river from spring till late in October. Mr. Washburn does not mention them at either that section, or at Mille Lacs. Mr. Treganowan notes them at Kandiyohi, and in Grant county in limited numbers, but not in the breeding season. It is quite evident that migrants from the north in September, distribute themselves over sections that are not visited by birds breeding here. It is very sure that none have ever been observed in those sections at other times than those of migrations. A few have been seen at Duluth on Lake Superior (Laurie), and others in

Le Sueur county, (sent to this city for mounting), and they get into the Snipe market occasionally in the fall. The latest date at which I have any record of seeing them is October 15th, (1874).

SPECIFIC CHARACTERS.

Legs very long and slender; wings long; large space in front of the head, spot behind the eye, and entire under parts, white, frequently with a very pale reddish tinge; head above, neck behind, back and wings, glossy black; rump and tail white, the latter frequently tinged with ashy; bill black; legs red,

Length, 14; wing, 8.50; tarsus, 4; tail, 3; commissure, 3.

Habitat, Temperate North America.

Note. The Black-necked Stilts are much more common in Minnesota than I formerly supposed, breeding in general sections in which the Avocets breed as evidenced by their presence during the entire season of nidification. After they disperse to breed, they are seldom seen except by those specially devoted to the critical study of their specific habits, and then very infrequently as they are much devoted to their special duties, and as it is well known that the male assumes equal responsibility in covering the eggs in the intervals of the absence of the female, and as the young are cared for much longer than many other species look after theirs, their vigilance in maintaining great secrecy would add greatly to the difficulties in finding their nests. I have never seen it, but the eggs have been sent to me under circumstances under which I could have no doubt of them, and corresponded to the descriptions of the acknowledged authorities.

Family SCOLOPACIDÆ.

PHILOHELA MINOR (GMELIN). (228.)

AMERICAN WOODCOCK.

As early as the full tide of the Duck migration reaches us, the Woodcock is here, and invariably in small parties of five or six, rarely more. At this time it will be found in the low brushlands bordering heavier growths on the southern side. I have no record of its arrival earlier than the last week in March, when it was obtained by Mr. J. C. Bailey near Whale Tail lake, in the western part of Hennepin county, at a spot long known to him as a favorite one for the Woodcocks. He discovered it by having observed it about the same date in former years, and being on the alert for its first arrival, watched for it at twilight in the morning. Its habits are so well known to sportsmen, that it would be time unprofitably spent to refer to most of them here, but for the fact that all

who are interested in the natural history survey of Minnesota are not sportsmen. It is essentially a nocturnal bird, beginning its movements in search of food at the early twilight and terminating them only at the opening day. As the food consists of animalcules, insects and worms chiefly, and the bill is long, slim and slender, it must find pools of stagnant water, and soft, muddy soil in which to secure it. When visiting such localities, the borings of their bills in soft mucky places, will often attract the experienced eye, and result in the early capture of a brace of these birds. Often times during the spring and summer, I have determined their presence in some favored locality by hearing their notes in the night. These consist of several forms or variations, the principal ones of which are more nearly expressed by *chip-ah, chip-ah, chip,* and another somewhat resembling *tweet, tweet, tweet-ah, tweet-ah, &c.*

If not already mated when they reach this latitude, they are soon after, for by the fifth to the tenth of April the nests are constructed, and the eggs laid. These are from three to four in number, of a creamy-drab, with a little shade of olivaceous, more or less spotted with reddish-brown and lilac. Both sexes participate in the sacrifices of incubation, and vie with each other in faithfulness to the eggs and young, the latter being fed by them until about full grown. I think the new family remains unbroken till their southern migration has taken place, unless broken by their destruction.

I have found them as late as the fifteenth of October, yet I am satisfied that this is exceptionally late for the larger part of them. In every respect the Woodcock is unique. In structure, it certainly is so remarkable that the commonest observer would at once recognize it. No other bird has its eyes so near the top of its head, a characteristic so marked as to lead to the identity by anyone who ever saw a plate of it, or even had read a popular description of it. Its nocturnal habits are such that it may be comparatively abundant in a given locality without the slightest suspicion of its presence, until familiar with its "borings" which may be numerous in the immediate vicinity of the residence. For years this was the case with a family residing near the banks of the Mississippi, within the limits of this city. The borings had yearly been noticed near the stable and attributed to worms, while the bird tracks associated with them were credited to snipe that came to feed upon them. As soon as an intimation of their real origin came to the gentleman residing there, he began a series of careful

observations resulting in the discovery of several nests within a hundred yards of his barn. For as much as five years after the observation of the borings, part of which passed before his knowledge of their real cause, these birds returned to the same place, but new nests were constructed each season. He was able to secure me all the eggs of Woodcock that I desired, and allowed me full opportunity to share all his observations during the last year of their return. The extension of the streets of the city demanding the removal of the barn, thicket, and the soft, mucky springhole, put an everlasting end to their return. One of the nests alluded to seemed to have been constructed entirely of leaves, while another had a large mixture of dried grasses. Still, in the larger number of instances it consists only of leaves, with very little attempt at architecture. The choice of the place for the nest is perhaps more commonly a meadow rather than a thicket, and in a clump of small willows, alders or birches, wherein are accumulated many leaves of the previous year out of which to construct them. The period of incubation is fourteen days. That time is made equal to a much longer one, by the circumstances of the male occupying the nest in the absence of the female to procure herself food. It was remarkable to me to see how tenaciously the sitting bird would cling to the nest in the immediate presence of danger, allowing me to almost reach it with my hand before slipping off and flying away. At other than the time of incubation, they shift their feeding grounds in what appears a most capricious manner, but really under the indications of the weather, a circumstance familiar to expert Woodcock hunters. Their flight is spirited and rapid, and attended with a twittering note that is very characteristic. They have a remarkable habit of poisoning a moment on their wings when they have been flushed, in which position they are pretty sure of death from the sportsman's shot, if he is accustomed to shooting Woodcock, and it is the only position in which any one except an expert will be likely to harm them, for they drop out of sight as if killed when they disappear again. They are rapid runners and hard to flush the second time, but will stand for a dog to point as long as almost any other bird in the sportsman's calendar. During the latter part of the summer, they disappear until early in September, or even a little later, it being their moulting season, when it is nearly impossible to find them, indeed I must say that I have never quite satisfied myself where they go.

But when they return in that month, instead of affecting the former localities, they are generally found in cultivated fields, amidst corn, grain shocks, etc., and occasionally in ditches in the meadows. Itinerant collectors have failed to contribute any information about this species in other sections of the State, and I am left to sportsmen for facts concerning their local distribution. Through them I have ascertained that while nowhere extremely abundant, it is found in all sections favorable for their securing food.

SPECIFIC CHARACTERS.

Bill long, compressed, punctured and corrugated near the end; upper mandible longest, and fitted to lower at the tip; wings moderate, first three quills very narrow; tail short; legs moderate; eyes inserted unusually distant from the bill; occiput with three transverse bands of black, alternating with three others of pale, yellowish rufous; upper parts of the body variegated with pale ashy, rufous, or yellowish-red of various shades, and black; large space in front, and throat, reddish-ashy; line from the eye to the bill, and another on the neck below the eye, brownish-black; entire under parts pale rufous, brighter on the sides and under wing coverts; quills ashy-brown; tail feathers, brownish-black, tipped with ashy, darker on the upper surface, paler and frequently white on the under; bill light brown, paler and yellowish at the base; legs pale reddish; iris brown.

Length, 11; wing, 5.25; tail, 2.25; tarsus, 1.25.

Habitat, eastern province of North America, north to British provinces, west to Dakota, Kansas, etc.

GALLINAGO DELICATA (ORD). (230.)

WILSON'S SNIPE.

In the last days of February, some sixteen years ago, the Ducks, Geese, and this species of Snipe came into this latitude as unseasonably as the farmers commenced sowing their wheat. And cold as several "snaps" were subsequently, none of these species left the country, appearing constantly afterwards on the fields and in the marshes where the waters were open. The Snipes are usually either preceded by the Geese and Ducks somewhat, or being quite nocturnal in their habits, are overlooked for more or less time after their arrival, which is probably the case. Excepting the spring mentioned, and another in which they were observed on the 27th of March, they have never come under my notice, nor have they been reported to me by others before the first of April.

They come in small parties that resort to the ponds, and are found in the meadows late in May, more frequently in pairs than in these small flocks of half a dozen. A few are occasionally seen as late as the 15th of May, but the most have disappeared by the end of the last week of April, or the first of May.

Sportsmen insist that they belong in Kandiyohi county, but I do not fully credit the statement, although the lateness of the date on which they have come under my own observation here, make such a fact possible, especially in the northwestern portions of our territory. No nests have yet been reported within our borders. They return here in flocks of twenty to thirty, or even more sometimes, about the 25th of August. These flocks are gradually augmented until hundreds may be flushed on their favorite feeding grounds by the 25th of September. Mr. Washburn found them abundantly represented everywhere in favorable localities in the Red river valley, from October 10th till the 25th, (when he left there), and Dr. Hvoslef reports them in Fillmore county, November 8, (1885). Mr. Lewis was always confident that a few remain in the southwestern section of the State all winter. The latest that any have been seen in Hennepin county (latitude 45), is November 12th, 1868. Their habits while here are too well known to need any description.

Since writing the above, many circumstantial proofs have reached me that this species does breed considerably within our limits, and I shall hope that before this report is finally closed, I shall be fully assured that such is the case, for everybody in general believes so.

SPECIFIC CHARACTERS.

Bill long, compressed, flattened, and slightly expanded towards the tip, pustulated in its terminal half; wings rather long; legs moderate; tail short; entire upper parts brownish-black, every feather spotted and widely edged with light rufous, yellowish, or ashy-white; back and rump transversely barred and spotted with the same; a line from the base of the bill over the top of the head, throat and neck before, dull reddish-ashy; wing feathers marked with dull brownish-black; other under parts white, with transverse bars of brownish-black on the sides, axillary feathers, under wing coverts, and under tail coverts; quills brownish-black; outer edge of first primary white; tail glossy brownish-black, widely tipped with bright rufous, paler at the tip, and with a subterminal narrow band of black; outer tail feathers paler, frequently

nearly white, and barred with black throughout their length; bill brown, yellowish at base and darker towards the end; legs dark brown; iris hazel.

Length, 10.50; wing, 5; tail, 2.25; bill, 2.50; tarsus, 1.25.

Habitat, Temperate North America.

MACRORHAMPHUS SCOLOPACEUS (SAY). (232.)

LONG-BILLED DOWITCHER.

The migrations of this Snipe do not materially differ in any respect from Wilson's. If anything, it is habitually the more abundantly represented, especially in the fall migrations. Sometimes they reach us simultaneously with the earlier Ducks, but more frequently they are in spring a little later. They fly very compactly, and are thus slaughtered in great numbers for the market in the autumn. In the absence of positive proof I nevertheless believe that they breed here more or less, as they are occasionally met with until late in July when they are moulting, and seek the most secluded and unapproachable places. Scarcely a season passes in which I do not meet a few solitary individuals in my own county, and wherever I go I get the same report. It is often well into October before the last of them are gone.

SPECIFIC CHARACTERS.

Rather smaller than the preceding; bill long, compressed, flattened, and expanded towards the end where it is punctulated and corrugated; wing rather long, shaft of first primary strong; tail short, legs rather long; upper parts variegated with dark ashy, pale reddish and black, the latter predominating on the back; rump and upper tail coverts white, the latter spotted and barred transversely with black; under parts pale ferruginous-red, with numerous points and circular spots of brownish-black on the neck before, and transverse bands of the same on the sides and under tail coverts; axillary feathers and under wing coverts white, spotted and transversely barred with black; quills brownish-black, shaft of first primary white; tail brownish-black, with numerous transverse bands of ashy white, frequently tinged with ferruginous, especially on the two middle feathers; bill greenish-black; legs dark greenish-brown.

Length, 10; wing, 5.75; tail, 2.25; bill, 2.25; tarsus, 1.25.

Habitat, Mississippi Valley and Western Province of North America.

NOTE. After Dr. Coues had spoken so emphatically in the rejection of the specific name of this species, in his *Birds of the Northwest*, p. 477, and upon what seemed to be the best of reasons, I am not a little surprised to find it adopted by the American Ornithological Union.

The extreme variations in the measurements of individuals of the same species amongst the Limicoline birds is too well known to be questioned, but fifty against one settles it till another forty-nine shall arise to help him fight his battle over. The tinkering with the nomenclature of the birds has been the terror of the tyros.

MICROPALAMA HIMANTOPUS (BONAPARTE). (233.)

STILT SANDPIPER.

This Sandpiper was one of the first of my trophies in my early collections in the then Territory of Minnesota. In years afterwards, I had made many a collecting tour before I had this bird in hand again. Since then for some twenty-five years, it has been my good fortune to meet them many times, but not every season of migration, nor even every year, and they are never common. Coming to us in the night, as do all of the scolopaceous birds, they are easily overlooked for some time after their arrival in most cases, but through the long series of observations I have recorded, I find that they have come under my notice on the average about the fifth of April.

They remain but a short time before the last have disappeared in a further northward movement. They come in small flocks, and keep mostly about shallow ponds, and along the smaller streams flowing through the marshes, but I have found them on the sandy beaches of some of the larger lakes on several occasions. Their food while here does not differ from that of most other species of the family. They are shy, and exceedingly vigilant, making it no easy matter to get them. By the last week in August they begin to return to us in appreciably larger numbers, and remain until about the first of November. I have no record later than October 27th.

SPECIFIC CHARACTERS.

Legs long, slender; toes slender, united at base with web, the outer of which is the larger; hind toe small; bill long, somewhat arched, slender, much compressed, expanded and flattened at the tip, which is minutely punctulated and *corrugated*, pointed; tail short, middle feathers longest, outer feathers frequently longer than the next, under coverts long; lower half of tibia naked; upper parts brownish-black, nearly all the feathers edged with ashy-white and yellowish-red; narrow band from above the eye to the occiput, bright brownish-red, inclosing the brownish-black of the top of the head; spot on the ears the same red; rump and upper tail coverts white, with transverse narrow stripes and pointed spots of brownish-black;

under parts ashy-white, tinged with pale reddish, with numerous longitudinal stripes of brownish-black on the neck, and transverse stripes of the same on the other under parts; axillary feathers white; under wing coverts ashy-white; bill and legs greenish-black.

Length, 9; wing, 5.25; tail, 2.25; bill, 1.75; tarsus, 1.75.

Habitat, Eastern Province of North America.

TRINGA CANUTUS L (234.)

KNOT.

There have been two or three years in succession when I failed to find this rather rare Sandpiper, followed by as many more when I would get one or two of them, but for the last ten years I find more of them in the market, brought "from beyond the Big Woods," than I find anywhere else.

They are found single in the spring migrations, or at most in pairs, but in the late summer and fall they are invariably mingled with other species. Their stay is very short in the spring, but in the fall they remain until November. There is little in their habits while with us to distinguish them from the other members of the family.

SPECIFIC CHARACTERS.

Bill straight, rather longer than the head, compressed and slightly enlarged at the tip; upper mandible with the nasal groove extending to near the tip; legs moderate; tibia with its lower third naked; neck, moderate; wing, long; tail, short; toes, free at base, flattened beneath, widely margined, hind toe small and slender; entire upper parts light gray, with lanceolate, linear and irregular spots of black, and others pale-reddish; rump and upper tail coverts white, with transverse narrow bands and crescent shaped spots of black; under parts light brownish-red, paler in the middle of the abdomen; under tail coverts, tibial feathers, flanks, axillary feathers, and under wing coverts white, generally with spots and transverse bars of brownish-black; quills brownish-black with their shafts white; tail, light brownish-cinereous without bars or spots, all the feathers edged with white, and frequently with a second sub edging of dark-brown; bill, brownish-black; legs, greenish black.

Length, 10; wing, 6.50; tail, 2.50, commissure, 1.50; tarsus 1.25.

Habitat, nearly cosmopolitan.

TRINGA MACULATA VIEILLOT. (239.)

PECTORAL SANDPIPER.

This familiar bird to the sportsmen is a common species during its migrations, arriving in spring about the 1st of April, or a trifle later, and remaining until about the first week in May. They appear in very small scattered parties, or singly. While with us they seem to become paired, as in shooting one, another one is almost sure to flush, and quite certain to be if hunted with a dog, when the two are found to represent opposite sexes. They are usually found on dry meadows near to that which is somewhat wet, and their food is principally crickets in spring, interlarded with various dry-land larvæ, small beetles and ground worms. In the fall the grasshoppers are first chosen, after which crickets and whatever other insects prevail at the season. They remain almost unobserved by any one except the sportsman until about the 20th of October before moving away southward, but are not all gone very quickly then.

Never really abundant, but uniformly fairly common in their migrations, and now well known to breed in nearly all portions of the State to some extent. It was not until I had been on a close lookout for their local habits in this respect for many years that I obtained a nest with three eggs, in the neighborhood of Herman. Having often seen some of these birds in the market in June, in the earlier years of my residence here, I could have no doubts of their breeding here, and I had read in the Pacific Railroad Reports that "This species has been ascertained to breed abundantly in Wisconsin by Professor T. Kumlein, an energetic cultivator of zoological science, now resident in that state," when I was directed to the locality where the birds had been observed by a hunting friend of mine. It was no small task to find the nest, but the reward was amply satisfactory. It was placed directly on the ground, which was hollowed out somewhat, and consisted of a small quantity of dried grass, loosely disposed, and containing three eggs, colored yellowish-gray with spots of amber thickly scattered around the larger end. Since then, I have received satisfactory assurances that they have been found by others in several sections of the State. Their habits, and their relative numbers, make observations of them during the incubating season extremely difficult.

SPECIFIC CHARACTERS.

Bill rather longer than head, compressed, slightly depressed, and expanded at the tip; nasal groove long; wings long; legs rather long; tibia with nearly its lower half naked; toes free at base, flattened underneath, and slightly margined; tail rather short; middle feathers pointed; entire upper part brownish-black, all the feathers edged and tipped with ashy and brownish red; rump and upper tail coverts black, some of the outer feathers of the latter edged with white; line from the bill over the eye ashy-white; throat, abdomen, under wing coverts, axillary feathers, and under tail coverts white; breast and neck before, ashy white, all the feathers darker at the base and with partially concealed lanceolate or pointed spots of brownish-black; quills brownish-black; shaft of first primary white, of the others brown; secondaries tipped and edged with white; tertiaries edged with dull reddish-yellow; bill and feet dark greenish-black.

Length, 9; wing, 5.25; tail, 2.50; bill to gape, 1.12; tarsus, 1. Habitat, North America.

TRINGA BAIRDII (COUES). (241.)

BAIRD'S SANDPIPER.

In the spring of 1875, Dr. T. S. Roberts stated that he had obtained several specimens of this species, since which time they have been collected by different parties on many occasions. Mr. J. Ransom of Pelican lake, has sent several in the flesh, all of which were spring birds, in good plumage.

There is no doubt of their habitual migrations through the State, and in considerable numbers in the fall, reaching the upper counties early in August, and passing on below, in the latter part of September.

They are said to breed in Alaska. The description of the species, of the habits of which I know nothing, I quote from "Birds of the Northwest" by Coues. Adult Male. "Bill wholly black, small and slender, slightly shorter than the head, just as long as the tarsus, or as the middle toe and claw, slightly expanded or lancet shaped at the end, the point acute; grooves long, narrow, deep; feathers on side of lower mandible evidently reaching further than those on upper. Upper parts brownish-black (deepest on the rump and middle upper tail coverts, and lightest on the neck behind), each feather bordered and tipped with pale brownish-yellow, the tipping of the scapulars broader and nearly white, their margining broad and brightest in tint, making several deep scollops towards the shafts of the feathers. Only the outer series of upper tail

coverts on each side varied with whitish. Middle tail-feathers brownish-black, the others plain gray with paler margins. Jugulum tinged with light, dull yellowish-brown, spotted and streaked with illly-defined blackish markings, as are also the sides under the wings. Throat and other under parts white, unmarked. Feet black like the bill.

"Length, $7\frac{1}{4}$; extent, $15\frac{1}{4}$; wing, 4.9; bill, 0.85; tarsus and middle toe and claw the same."

TRINGA MINUTILLA VIEILLOT. (242.)

LEAST SANDPIPER.

Abundant everywhere in Minnesota during the migrations. The numbers greatly reduced about the first week in May, but no time during the remainder of the season when there is not a fair representation until after the first sharp frosts. They reach the locality where I live, about the 20th of April, in backward seasons still later. Their first appearance here is in flocks of ten to fifteen, which after about ten days more, grow steadily less in numbers until the species entirely disappears as flocks.

There is no week in all the summer when at least one individual may not be seen in the course of a day's collecting in the marshes, amongst the muddy, or sandy shored ponds and sloughs, or along the pebbly beach of a clear pure lake. Never more than one at a time until in August, when the number increases from time to time, until by the 20th, they are seen in considerable flocks. Of course they are breeding, but just where, how, and when, are the unanswered questions still pending. Four eggs were brought to me in 1880, said by the kindly donor to be those of the Least Sandpiper, and I *guess* that they were, but how am I to *know*? The bird which covered them had not been secured. They answered the description, "Buffy-yellow, thickly spotted with brown and drab." But there are others that have all of these characteristics. I am not *certain* that I have ever seen the eggs of this species. But I do not hesitate to say that the Least Sandpiper breeds nearly everywhere in the State.

Dr. Hvoslef reports the species present at Lanesboro late in May, and on the 4th of August, 1879. Mr. Washburn, who visited the Red river valley on the 28th of July, 1885, and remained until the 12th of September, found them at Crookston "in muddy fields, and on plowed ground, over which water was standing; and again at Mud lake." He further remarks

"they were very tame and could be shot at again and again, returning to the same place, and walking unconcernedly about on the mud among their dead and dying comrades, perfectly oblivious in their search for food, of the author of so much destruction." And I could add similar reports from other localities if they were needed. The flocks increase in size until they are driven away by the cold, but they never assume the proportions which they do on the sea coast. The above was written in 1880, since which the bird, eggs and nest have been added to my personal collections, and obtained by several collectors. The nest is located on dry knolls, or sand dunes near the shore of a pond, and consists of a hollow in the friable soil, into which is placed a moderate quantity of dried grass. There are four pretty, creamy eggs, dotted and blotched with dark-brown more pronounced near the larger end.

SPECIFIC CHARACTERS.

The smallest of all known species of this group found in North America; bill about as long as the head, slightly curved towards the end, which is very slightly expanded; grooves in both mandibles to near the tip; wing long; tertiaries nearly as long as the primaries; tail short, middle feathers longest, outer feathers frequently longer than the intermediate; legs long; lower third of the tibia naked; toes long, slender, margined, and flattened beneath; hind toe small; upper parts with nearly every feather having a large central spot of brownish-black, and widely margined with ashy and bright brownish-red; rump and middle of the upper tail coverts, black; outer coverts white, spotted with black; stripe over the eye, throat, and breast, pale ashy-white, with numerous small longitudinal spots of ashy-brown; abdomen and under tail coverts, white; quills, dark brown, with the shafts of the primaries white; tertiaries edged with reddish; middle feathers of the tail, brownish-black; outer feathers light ashy-white; under surface of wing, light brownish-ashy, with a large spot of white near the shoulder; axillary feathers, white; bill and legs, greenish-brown, the latter frequently yellowish-green.

Length, 5.50 to 6; wing, 3.50 to 3.75; tail, 1.75; bill to gape, 0.75; tarsus, 0.75.

Habitat, North and South America.

EREUNETES PUSILLUS (L.). (246.)

SEMIPALMATED SANDPIPER.

A regular migrant, reaching the section where I reside about the 25th of April, intimately associated with the Least Sandpipers, they remain about the smaller lakes and ponds for a short time, and disappear so much like that species after three or

four weeks, that I strongly suspect that while they principally go farther north to breed, some remain to do so with us.

For evident reasons already mentioned, if such is the case, there is little occasion for surprise that the nests have not been discovered. Their constant note, repeated in a subdued tone, *tweet, tweet*, is similar to that of the other species. Indeed, all their habits are indistinguishable, and I am compelled to have the bird in my hands to identify it with any feeling of certainty

SPECIFIC CHARACTERS.

Bill about the length of the head, rather thicker than usual in this group; both mandibles somewhat expanded and flattened at the tip, and minutely punctulated as in the genera *Scolopax* and *Gallinago*; wings, long; legs, moderate, rather slender; toes united at the base by a membrane which is large, between the outer and middle toes, extending to the first joint; hind toe small; tail, short, with the middle feathers longest; outer feathers frequently longer than the third, presenting a doubly emarginate character to the tail; under coverts nearly as long as the tail; upper parts, light brownish-ashy, with lanceolate or ovate spots of brownish-black in the middle of the feathers; rump and upper tail coverts, black; front, band of the eye, and entire under parts, ashy-white, with small spots on the breast of ashy-brown; quills, brownish-black, lighter on their inner webs, and with their shafts white; middle feathers of the tail, brownish-black; outer feathers, pale brownish-ashy; under wing coverts and axillaries, white; bill, greenish-black; feet dark, the lower parts of the tarsus and toes, frequently tinged with yellow; upper part in summer, mixed with light reddish; iris, brown.

Length, 6.50; wing, 3.75; tail, 1.75; bill from gape, 0.75; tarsus, 0.75 to 1.

Habitat, Eastern Province of North America.

CALIDRIS ARENARIA (L.). (248.)

SANDERLING.

The Sanderling has long been a common bird on the sea coasts, and I had not expected to be permitted to list it in Minnesota, when Mr. W. L. Tiffany (then a resident of this city and enthusiastically interested in birds) brought me an adult male in the spring of 1875. Since then I have found it a rather regular visitor in both migrations, but some years I am confident that they fail to appear, or in one of the migrations at least.

They are never numerous, but come to us about the middle of April in company with the Sandpipers and Snipes. It is usual to find them mating to some extent while here, but they

are soon gone afterwards. An individual I obtained in July suggests the possibility of a few breeding here. All prejudged conclusions as to the breeding limits of species are valueless.

And when emanating from persons assuming to be authorities in the matter they are often unjust to earnest, ambitious young naturalists by reflecting shadows of doubt upon their best work.

SPECIFIC CHARACTERS.

No hind toe; front toes moderate or rather long, flattened underneath; distinctly margined with a membrane; bill rather longer than the head, straight, rather thick; ridge of upper mandible flattened; nasal groove deep and nearly as long as the upper mandible, not so distinct in the lower; both mandibles widened and flattened at the tip; aperture of the nostril large and covered with a membrane; wing long; tail short, with the middle feathers longest; under coverts as long as the tail; legs moderate; lower third of the tibia naked; upper parts light ashy with lanceolate, hastate and ovate spots of brownish-black on top of the head, on the back, scapulars and shorter quills; rump and upper tail coverts with fine transverse lines of black; under parts pure white; shoulders brownish-black without spots; quills brownish black with their shafts white and much paler on the inner webs; greater wing coverts widely tipped with white; middle feathers of tail ashy-brown, edged with white; outer feathers paler; bill and legs greenish-black; sexes alike; iris brown.

Length, 8; wing, 5; tail, 2; bill, 1; tarsus, 1.

Habitat, nearly cosmopolitan.

LIMOSA FEDOA (L.). (249.)

MARbled GODWIT.

Fairly common for a few days in early May, these larger birds of the Scolopacidæ family are with us but a short time in their migrations, especially in the spring. They are already paired when they come in most cases, and are seldom found in anything like flocks at this time, but when they return about the 15th of August, or the 20th, as occurs more frequently perhaps, they are generally in parties of five or six, rarely more. They remain in autumn until the 20th of September if no severe frosts appear, in which case they are all gone the next morning early, taking to wing before the dawn. Specimens were not uncommon in the shops and private cabinets of St. Paul thirty years ago, and may still be found as common in the museums of the academies and educational institutions from the State University through. It is somewhat irregular in

respect to the lines of its passage through Minnesota, failing to put in an appearance on some for two or three seasons in succession, in one or the other migration, and appearing by a fair representation in others.

Mr. Holzinger does not give them in the list of the Normal School collection and Mr. Washburn makes no mention of them in the Red river valley. On the undulating prairie lying between the Minnesota and Mississippi rivers, near Fort Snelling, I formerly found the Marbled Godwit without much uncertainty in its autumnal migrations, rarely however in the vernal. In what is now the northwestern section of the city where I reside there are two or three shallow lakes, between and around which are some rather sterile knolls. On several collecting tramps I found a number of this species on them. At a little distance, those on the highest looked to be much larger than they really were, and were utterly unapproachable except by strategy, as one of the number invariably remained on guard. But when by any means one individual got within shot, and was either killed or crippled, the others would fly within range in their solicitude for the unfortunate one, when a second, usually no doubt the mate, was most likely to share its fate.

The first week in September is the golden time for finding them, and they are then much sought for by sportsmen familiar with them. The flesh is very delicious eating. Their stay is too brief for any but the initiated to secure them and when others obtain them it is by the accident of their association with flocks of more common species. From the uniform lateness of their arrival in spring, and the early date of their reappearance in fall, or rather late summer, I hoped to have found their nests long ago, but although I learned indirectly of others having done so in 1864, I had no personal knowledge of them until in the autumn of 1872, when I found three eggs, and what was said to be the male and female associated with them, in the St. Paul Academy's collection. Coues' "Birds of the Northwest" was published two years afterward, in which he mentions seeing the same, so that it is probable that he saw them before I had done so, and I quote briefly what he says. "The only perfect set of eggs of the Godwit I have seen were taken June 1, 1871, fifty miles northwest of Saint Paul, Minnesota; both parents were secured and deposited in the Saint Paul Academy, where I examined them; so that the identification is unquestionable. There are three eggs in this set, measuring 2.30 by 1.60, 2.28 by 1.56 and 2.25 by 1.62. The

color is a clear, light olivaceous-drab; the markings are small and numerous, but not very strongly pronounced—there is nothing (in this set) of the heavy blotching and marking usually seen in wader's eggs. The spots are pretty evenly distributed, though rather larger in two instances, and more numerous in the other instance, about the butt than elsewhere. These markings are of various umber-brown shades, with the usual stone-gray shell spots." Since those days it has been reported that several nests have been obtained which I have not seen, and I have had only one brought to me. The nest was described as constructed exclusively of grass, in a superficial excavation in the ground, on a dry prairie about 12 miles southwest of this city, and was found on the 5th of June, 1879. The eggs were three in number and essentially as described above, except that the largest was not quite as long as the longest given, and the shortest was a trifle shorter than the shortest, while of the same width.

SPECIFIC CHARACTERS.

Bill long, curved upwards, both mandibles grooved; wings long; tail short; legs long; tibia with its lower half naked; toes rather short, margined and flattened underneath; the outer and middle toes united by a rather large membrane; entire upper parts variegated with brownish-black and pale-reddish, the former disposed in irregular and confluent bands, and the latter in spots and imperfect bands; in many specimens the black color predominating on the back, and the pale-red on the rump and upper tail coverts; under parts pale rufous, with transverse lines of brownish-black on the breast and sides; under wing coverts and axillaries rufous; outer webs of primaries dark brown, inner webs light rufous; secondaries light rufous; tail light rufous with transverse bars of brownish-black; bill pale yellowish-red at base, brownish-black at the end; legs ashy-black; iris brown.

Length, 18; wing, 9; tail, 3.50; bill, 4 to 5; tarsus, 3.

Habitat, North America.

LIMOSA HEMASTICA (L.). (251).

HUDSONIAN GODWIT.

I have never met with this bird in the flesh, but have found it in several collections, leaving no question of its presence in migration.

The first instance of its coming under my observation was in the collection of Mr. Schroeder, of St. Paul, and subsequently in Mr. Howling's, of this city. It is found only as

associated with other flocks of its family, and so far as I have been able to learn, has only been obtained in fall migrations. I know nothing of its habits to distinguish it from the other species of its genus. The description of the species is as follows:

SPECIFIC CHARACTERS.

Smaller than the preceding; bill longer than the head; both mandibles grooved, slightly recurved; wings long; legs moderate; membranes uniting the outer and middle toe large. Upper parts brownish-black, with dots and transverse bars of pale reddish on the back; rump brownish-black; upper tail coverts white; wing coverts and shorter quills dark cinereous; primaries brownish black; under parts yellowish-red, with transverse bars of brownish-black on the breast and sides, and under tail coverts, and frequently with the feathers on the abdomen widely tipped with white; tail black with the base white and narrowly tipped with white; under wing coverts and axillary feathers black; shafts of primaries white; bill pale yellowish at base, tip brownish-black; legs bluish-brown; iris brown

Length, 15; wing, 8; tail 3; bill, 2.75 to 3.50; tarsus, 2.50.

Habitat, eastern, northern and middle America.

TOTANUS MELANOLEUCUS (GMELIN). (254.)

GREATER YELLOW-LEGS.

This bird is a typical wader, being almost constantly in the puddles, pools and ditches in spring, in quest of its food, found mostly in those places.

They rarely resort to strands and sandy beaches except in passing from one of the former localities to another. It is generally about the 10th of April, when they appear about our ponds and muddy lakes in considerable numbers, for a time, and then disappear until the latter part of August when they come back in force. In their fall migration, they not only remain longer but resort in large flocks to the fields, where wheat and corn have been grown, in which they find an abundance of larvæ, worms, and various species of insects in large numbers. They are the terror of the sportsman, for as soon as they discover anything suggestive of a man or a gun, they set up a loud, shrill noise that awakens every game bird in the region for a quarter of a mile around in all directions. The "quack" by the ducks as they take to wing before having seen any danger themselves, is the unwelcome farewell to the next hour's sport. It takes no ordinary measure of strategy to bag them after they have once been flushed.

They remain often into November before taking final leave for the milder latitudes. The Red river country is their abounding region in their migrations, yet there is no section which they do not visit in greater or lesser numbers. I have them abundantly reported from Big Stone lake (Cutter), Herman, Grant county (Clague), Red River (Washburn), Lanesboro (Dr. Hvoslef), Lake Shetak (Herrick), Waseca (Everett), Elbow Lake (Sanford), and many other localities indicating their distribution. Mr. Washburn states that when he visited the Red river region late in July and early in August, he found both the Telltales (the sportsman's name for the Yellow-legs), still non-gregarious, only one or two individuals being seen in one place, which hints strongly at their being in proximity to their breeding places, for in a very short time afterwards they were seen in considerable flocks on the plowed fields. On August 6th he says "many single birds observed along the Thief river." On the 20th, I found them in large flocks along the Minnesota river, ten to fifteen miles above St Paul.

SPECIFIC CHARACTERS.

Bill longer than the head, rather slender, curved towards the tip; wings rather long, first quill longest; tail short; neck and legs long; toes moderate, margined and flattened underneath, connected at base by membranes, the larger of which unites the outer and middle toe; hind toe small, claws short, blunt; grooves in both mandibles extending about half their length; entire upper parts cinereous of various shades, dark in many specimens in full plumage, generally light with white lines on the head and neck, and with spots and edgings of dull white on the other upper parts; lower back brownish-black; rump and upper tail coverts white, generally with more or less imperfect transverse narrow bands of brownish-black; under parts white, with longitudinal narrow stripes on the neck, and transverse crescent, lanceolate and sagittate spots and stripes on the breast and sides; abdomen pure white: quills brownish-black with a purplish lustre, shaft of first primary white; secondaries and tertiaries tipped, and marked with transverse bars and spots of ashy-white; tail white, with transverse narrow bands of brownish-black, wider and darker on the two middle feathers; bill brownish-black, lighter at the base; legs yellow; iris dark brown.

Length, 14; wing, 7.50 to 8; tail, 3.25 to 3.50; bill, 2.25; tarsus, 2.50.

Habitat, America generally.

TOTANUS FLAVIPES (GMELIN). (255.)

YELLOW-LEGS.

From the first to the tenth of April the Yellow-legs appear about the shallow pools and muddy ponds in small parties. In these they wade about constantly for hours at a time when unmolested, and when driven to wing, fly very swiftly away in an irregular, Snipe-like manner, making a loud, whistling note, illy adapted to concert melody. Their flight is wonderfully compact, the flock moving as if by one impulse through all the gyrations incident to indecision where next to go, which however often results in their return to the same pool when the gunner has concealed himself effectually. From the repeated observation of this phenomenon in many species of bird life, I am convinced that in such cases only the individual leading the flock takes the least cognizance of their surroundings, all others maintaining an instinctive attention to the motions of the leader alone. If by an exceptionally sudden surprise the flock is momentarily deranged, in an instant the former compactness is resumed as if nothing had occurred, which would be impossible upon any other conceivable hypothesis. The noisy, whistling notes of the species soon becomes familiar to the gunner, which some of them learn to imitate so well, that the deluded flock easily falls into the range of his deadly missile. Their meat is scarcely less palatable than the best of the Snipe kind. By the first of May most of them have gone, probably much further north, to multiply by reproduction and return here again about the first week in September. I know nothing of their nidification habits, and have never seen their eggs under circumstances to describe them.

Mr. Washburn, (as have nearly all my correspondents) met with some flocks late in October. He says:—"At Dead lake, October 23d, I saw a few flocks of these birds flying south. They were very tame, and exceedingly fat. Although repeatedly shot at, they would return again to me on my imitating their call." Great numbers of them are usually found in the markets and restaurants, at this season, as well as earlier. Most of them have gone southward by the first of November, but I have some records of their remaining until the middle of that month.

SPECIFIC CHARACTERS.

Bill rather longer than the head, straight, slender, compressed; wing long, pointed; tail short; legs, lower half of the tibia naked; toes moderate, slender, margined, the outer and middle united at the base; rump and upper tail coverts white, the latter transversely barred with ashy-brown; the other upper parts ashy, many feathers having large arrowheads and irregular spots of brownish-black, and edged with ashy-white; under parts white, with numerous longitudinal lines on the neck before, and arrowheads on the sides of dark ashy-brown; axillaries and under wing coverts white, with bands of ashy-brown, very indistinct in many specimens, but generally well defined; quills brownish-black; tail ashy white with transverse bands of dark-brown, middle feathers darker; bill greenish-black; legs yellow; iris dark brown.

Length, 10 to 11; wing, 6 to 6.50; tail, 2.50; bill, 1.50; tarsus, 2. Habitat, America in general.

TOTANUS SOLITARIUS (WILSON). (256.)

SOLITARY SANDPIPER.

This little shorebird reaches us as late as the 10th of May; rarely earlier, and always in pairs. They are at once found running along the shores of ponds, lakes and streams, with very little regard to *solitude*, as the din of all the vast flouring and saw mills, with trains of cars passing on an average of every ten minutes, to which vastly more confusion should be added, does not in the least disturb them. Their food consists of aquatic insects and their larvæ, with minute mollusca entering in to vary the variety. In a short time, or about the 25th of May, they principally disappear, evidently to nest and rear their young, for only a few are seen, and then in unmistakable solitude. This continues until early in August, when they begin to seek the former localities in family parties of from six to eight. As the summer passes into autumn, these families become winged communities of thirty, forty, or more, which increase in size to some extent until they leave, about the first of October. They are universally distributed over the entire State.

I have several times had the eggs of this species brought to me, with all but positive assurance that the identification was correct, and I hear of others in the possession of amateur oölogists, reputedly collected locally, but in the case of the former, the eggs have either been those of the Spotted Sandpipers, of which I have a full supply of my own collection, or

there is no possible distinction between the eggs of the two species. Nothing less than the simultaneous obtaining of the bird with the eggs will satisfy me now.

As in my first remarks respecting the species, I was at a loss to see why it was named *Solitary* until I learned for myself the difficulty of finding the birds at all during their breeding. By going to those sections where they are most commonly found at other times, very early in the morning, as I have done many times to observe other birds, I have occasionally seen a single Sandpiper of this species at the season of nesting. Finally I discovered them between sunset and twilight, silently running about as if not far from the rest of the family. Then I resorted to the locality in the middle of the day, and "prospected" every square yard of considerable territory, but never yet have been rewarded by the discovery of the nest, or indeed the birds either at such a time. In the early days of August they begin to come out of their hiding places, and are more and more frequently seen as the season advances, until in September they are often on the wing in small flocks which again increase in size until they leave for the winter. I must conclude that the setting bird possesses the same instinct for secreting the nest and eggs which is well known to be shown in other orders of birds. On the approach of an intruder, the bird slips silently off the nest and at once covers it with such debris as surrounds it, and wends a dubious way rapidly to a place of unquestioned safety.

I cannot resist the impulse of quoting from Coues' "Birds of the Northwest," page 500, where is to be found an example of his almost peerless genius in the description of the minuter traits of those humbler forms of bird life overlooked by less observing ornithologists, in which this species has his attention until immortalized. He says: "I generally found two or three to half a dozen together; frequently one at a time; occasionally, but not often, upwards of a score, that seemed, however, to be drawn together by their common tastes in the matter of feeding grounds rather than by any gregarious instinct. They are moreover pretty exclusive in their own set; rather declining, than encouraging, familiarity on the part of other waders; though the Peetweets and others sometimes intrude their hoydenish society upon the more sedate and aristocratic members of the long-legged circle. They should rightly, however, rather embrace than merely endure such company, for they are easy going, contemplative natures, and their sharp-eyed associates

often do them good service in sounding alarms. These Tattlers indulge on all occasions, a propensity for nodding like Lord Burleigh, or the Chinese Mandarins in front of a tea shop, and when they see something they cannot quite make out, seem to reason with themselves, and finally come to a conclusion in this way; impressing themselves heavily with a sense of their own logic. They go through the bowing exercise with a gravity that may upset that of a disinterested spectator, and yet all through the performance so ludicrous in itself, contrive to preserve something of the passive sedateness that marks all their movements. This bobbing of the head and foreparts is the correspondent and counterpart of the still more curious actions of the Spotted Tattlers, or Tip-ups, as they are aptly called from this circumstance; a queer balancing of the body upon the legs, constituting an amusement of which these last named birds are extremely fond. As often as the Tip-up, or Teter-tail, as it is also called, stops in its pursuit of insects, the forepart of the body is lowered a little, the head drawn in, the legs slightly bent, while the hinder parts and tail are alternately hoisted with a peculiar jerk, and drawn down again with the regularity of clock-work.

“The movement is more conspicuous in the upward than in the downward part of the performance; as if the tail were spring-hinged and in constant danger of flying up, needing constant presence of mind to keep it down. It is amusing to see an old male in the breeding season busy with this operation. Upon some rock jutting out of the water he stands, swelling with amorous pride and self-complacency, puffing out his plumage till he looks twice as big as natural, facing about on his narrow pedestal, and bowing with his hindparts to all points of the compass. A sensitive and fastidious person might see something derisive, if not actually insulting in this, and feel as one may be presumed to have felt when the savages who attacked his ship in canoes showed the signs of contumacious scorn that De Foe records. But it would not be worth while to feel offended, since this is only the entirely original and peculiar way the Tip-up has of conducting his courtships.”

Much has been said of these peculiarities of the Tip-ups, and with much plausibility, but sad to relate, the ornithological verdict is still unproclaimed as to what all the wonderful bowings, and waggings, and puffings really are designed to express.

Dr. Coues further says: “The solitary Tattlers, that we have lost sight of for the moment, are fond of standing motionless

in the water when they have satisfied their hunger, or of wading about, up to their bellies, with slow measured steps. If startled at such times, they rise easily and lightly on wing, fly rather slowly a little distance with dangling legs and out-stretched neck, to soon re-align and look about with a dazed expression. Just as their feet touch the ground, the long, pointed wings are lifted till their tips nearly meet above, and are then deliberately folded. The Esquimaux Curlews and some other birds have the same habit. The Tattlers are usually silent birds, but when suddenly alarmed, they utter a low and rather pleasing whistle as they fly off, or even without moving."

SPECIFIC CHARACTERS.

Bill rather longer than the head, straight, slender, compressed, both mandibles with narrow grooves; wing long, pointed; tail medium or rather short, rounded; legs rather long, slender; lower half of the tibia naked; toes long, the outer united to the middle by a small membrane, flattened underneath, margined; upper parts greenish-brown with numerous small circular and irregular spots of ashy-white; upper tail coverts darker; under parts white; breast and neck before with numerous longitudinal lines of greenish-brown; sides, axillaries and under wing coverts white with numerous transverse narrow bands of dark greenish-brown; under tail coverts white with a few transverse bands of dark brown; quills brownish-black with a slight bronzed or reddish lustre on the primaries; two middle feathers of the tail greenish-brown; other feathers of the tail pure white with about five transverse bands of brownish-black; bill and legs dark greenish-brown; iris hazel.

Length, 8 to 8.50; wing, 5; tail, 2.25; bill, 1.25; tarsus, 1.25.

Habitat, North America.

SYMPHEMIA SEMIPALMATA (GMELIN). (258.)

WILLET.

The Willet is a summer resident of Minnesota, reaching this latitude about the 20th of April in sparing numbers; never even commonly represented, yet quite uniformly so. They manifestly prefer sandy localities during their entire stay, in which places they are more ordinarily found by collectors, yet they are not confined to such by any means, for I have often discovered them in extensive marshes, partly overflowed with water, feeding after the manner of the Yellow-legs and other waders. They are paired by the first week in May, and build their nests about the 25th; occasionally a little earlier, but oftener a little later, according to the season. I have seen the

nest *in situ* but once, but have reports from several others, with the eggs. I am satisfied if careful search could be made in grant or Otter Tail county in June more could be found than further south, yet, the Willet must breed in occasional instances in the most southern counties, for individuals are seen there during the summer months when they should be breeding, as they reappear in August with their progeny in the northern sections, followed by their increasing presence below, approaching the 1st of September. They remain about in families until the latter part of October, when, after uniting the families into small flocks, they move off to some lower latitude (Brazil?) to escape our inclement winters.

The nests have been found quite remote from water of any kind on the dry prairie south of the Minnesota river, and in the bottom of that river.

It is constituted of grass and weeds, in a tussock of weeds, or grass in some cases, and in others in a hollow in the ground into which they have gathered and arranged very little material of any kind. They have four pear-shaped, pale-olive eggs marked with blotches of various shades of brown, more confluent about the larger end. They are very noisy birds when disturbed during the breeding season, uttering vehemently, as near as has yet been expressed, the syllables *pil-wilet*, *it-pil-wilet*, in shrill cries which arouse all the water fowls in the section instantly.

Dr. Hvoslef met with these birds on the 26th of April in his section, Mr. Lewis at Big Stone at the same date, and in June in Douglas county, while I myself found them relatively common in Becker and Crow Wing counties in the last week in May (1887).

SPECIFIC CHARACTERS.

The largest American species of its genus; bill longer than the head, straight, rather thick and strong; groove in the upper mandible extending about half its length, in the lower mandible nearly obsolete; wings long; legs long, strong; toes moderate, united at base by membrane, the largest of which unites the outer and middle toe; hind toe small; tail short; entire upper parts dark ash color without spots; the shafts of the feathers brownish black; rump and upper tail coverts white; under parts white, tinged with ashy on the neck and sides; axillaries and under wing coverts brownish-black; primary quills white at base, tipped with brownish-black; secondaries white, spotted with brownish-black; tail ashy white, the two middle

feathers strongly tinged with ashy; others spotted with dark ashy-brown; bill dark bluish-brown, lighter at the base; legs light blue; iris brown.

Length, 15; wing, 8.25; tail, 3.25; bill, 2.50; tarsus, 2.50.

Habitat, Temperate North America.

BARTRAMIA LONGICAUDA (BECHSTEIN). (261.)

BARTRAMIAN SANDPIPER.

Sub-common and resident. Arrives the first week in April in small parties when they are found on the open pastures on dry knolls, after the manner of the plovers. Its habits in these respects confound it with the other species mentioned, hence the popular name of Upland Plover. Sometimes for a short time following their arrival they seem quite common, but by the 10th of May they are manifestly diminishing in numbers, and by the 25th only those which are to breed here are left, the others having mostly passed on further north, and those remaining having paired, enter upon the structure of their nests and depositing their eggs, which are three to four in number, and vary exceedingly in the shades of color from creamy drab to pure buff, between which are all gradations of those two colors. They are spotted with different degrees of brown and almost obsolete lilac. Few of the Wading Birds have so wide a range of choice of location for their nest. One many years since was in a closely grazed pasture near a rice marsh in the northwestern part of the city in which I am writing, and was a mere excuse for a structure of the kind, consisting of a pinch of grass blades loosely strung around a slight depression in the ground and partially under a tuft of rank grass where the offal of the preceding year had made the cattle refuse to crop it. Another discovered a few years later, with an incomplete complement of eggs, was on the sandy, high plains west of Fort Snelling, and had no covert, and still less grass distributed around the depression in the ground.

Competent observers assure me that they more commonly build close to the hills of corn in the cornfields, where the incidental protection leaves them less apparent motive to seek concealment, yet the nest is much more bulky with grass and weeds. Their food, as indicated by the contents of their crops at this time in the year, consists chiefly of crickets, grasshoppers, small beetles and seeds of different kinds. These kinds of food are abundant at that time of the year.

In August the families begin to unite in flocks, and some small ones are seen as late as the 1st of November, but as a rule they have all disappeared by the 15th to the 20th of October.

Wherever in the State that I have made collections, or only observations, I have almost uniformly obtained facts enough to satisfy me of their presence at least in one migration. Mr. Washburn notes them as common in August in Otter Tail county, as had Mr. Lewis still later in previous years.

SPECIFIC CHARACTERS.

Bill about as long as head, rather wide and flattened at the base, curved at the tip; nostrils with a large membrane, nasal groove long; wing long; tail long for this group; legs moderate, or rather long; lower half of the tibia naked; toes moderate, the outer and middle united by a membrane, inner and middle free to the base, hind toe small; general color of the upper parts brownish-black with a greenish lustre, and with the feathers edged with ashy-white and yellowish, the latter especially on the wing coverts; lower part of back, rump and upper tail coverts brownish-black; lateral coverts of the tail yellowish-white with arrow-heads and irregular spots of black; wide stripe over the eye, and entire under parts very pale yellowish-white, nearly pure white on the abdomen; neck before with numerous longitudinal lines of brownish-black; breast and sides with waved and pointed transverse narrow bands of same; axillary feathers and under wing coverts pure white with numerous nearly regular transverse narrow bands of black; quills brownish-black with numerous transverse bands of white on their inner webs very conspicuous on the under surface of the wing; shaft of first primary white; middle feathers of tail same greenish-brown as the back with irregular and imperfect transverse bands of black; outer feathers pale reddish yellow, edged and tipped with white, and with several irregular transverse bands and a large subterminal arrowhead of black; bill greenish yellow, with the under mandible clearer yellow towards its base, tip brownish-black; legs light yellow; toes darker; iris hazel.

Length, 12; wing, 6.50; tail, 3.50.

Habitat, eastern North America.

TRYNGITES SUBRUFICOLLIS (VIEILLOT). (262.)

BUFF-BREASTED SANDPIPER.

Many times in my prolonged observations of the Sandpipers had I thought that I had secured this species only to find myself disappointed, when some of them were brought in for

me, which had been secured by a trio of young naturalists* residing in my city. This was in August, 1877, since which time I have secured them in June, July and August, in several years, settling the question of their local nidification. They come to us early in April, in numbers enough to show that many must go further north to breed. I have not been able to obtain any information as to their distribution within our limits which extend further north than Grant county, however I think they probably breed in the northern counties to some extent. They are an extremely active species when on the wing, and essentially ploverine in all respects, seeking sandy barren prairies, where they live upon grasshoppers, crickets and insects generally, and ants and their eggs specially. I have found them repasting upon minute molluscs on the sandy shores of small and shallow ponds, in the warmest part of the day, when they were apparently little more suspicious than the Solitary Sandpipers are notably. The flight is in a rather compact form, dipping and rising alternately, and with a disposition to return again to the neighborhood of their former feeding places.

The latest record of their presence here in the autumn which I find in my notes is October 23d. I have not seen their nest or eggs yet.

SPECIFIC CHARACTERS.

Bill about the length of the head, straight, compressed, narrow at the point; nasal groove long, wings very long; first quill longest; tertiaries rather shorter; tail moderate, or longer than usual in this group; legs rather long; lower third of tibia bare; toes free at base, flattened underneath and slightly margined; hind toe small; upper parts pale and dull ashy-brown, with a yellowish tinge; every feather with a large central lanceolate, crescent shaped, or oblong spot of black, frequently with a glossy-green tinge, especially on the back and shorter tertiaries; under parts light yellowish red, or pale-fawn color; many feathers tipped with white, and paler on the flanks and abdomen, on the breast with partially concealed small spots of black; axillary feathers white; quills with their outer webs light-brown, inner webs ashy-white, marbled with black, and narrowly tipped with white; middle tail feathers brownish-black; outer feathers lighter, with transverse waved lines of black, tipped with white; bill black; legs greenish-yellow; iris hazel.

Length, 7.50 to 8; wing, 5.50; tail, 3; bill, from gape 1; tarsus, 1.25.

Habitat, North America.

*T. S. Roberts, C. L. Herrick, R. S. Williams.

ACTITIS MACULARIA (L.). (263.)**SPOTTED SANDPIPER.**

Kennicott found these birds at the Lake of the Woods on the 31st of May, but says nothing of their breeding there, nevertheless, from an acquaintance with their habits over the rest of the State generally, I have no doubt that they were. They reach the southern parts about the second week in April, and in exceptionally early springs, in the last days of March, (1864,) in large numbers, and after distributing themselves universally over the country, so that scarcely a stream of water of any magnitude from the outlet of a perennial spring in the wilderness, to the Mississippi river, or lake of any size down to a pond or a pool, can be found which has not its representation of the species. About the 25th of April they begin nesting in all sorts of places, from the margins of the water to the depth of the brushlands and forests, wherever they can scratch a hollow in the ground, not already provided, and when they have sparingly lined the depression with grass, moss, or straws of almost any available, flexible material, they deposit in them four yellowish-buff colored eggs, blotched and spotted with "umber and sienna" which often becomes confluent on the larger end.

Their nests are frequently found in May and June. Several have been discovered in the wheat-fields, and corn-fields near the small lakes south of Minneapolis, and a ramble of a couple of hours in Grant county is rewarded with securing more or less almost uniformly.

Dr. Hvoslef obtained them at Lanesboro on the 30th of May, and I have private records as late as July 3d, so there can be little doubt that they bring out two broods, or vary the time of incubation almost unprecedentedly.

Early in August the families begin to be seen occasionally, and later flocks, which gradually increase in size till about their time for the fall migration, when they become larger, and are almost constantly on the wing until they are all gone, which is sometimes from October 25th to November 10th.

SPECIFIC CHARACTERS.

Small; bill rather longer than head; straight, slender; long grooves in both mandibles; wing pointed, rather long; tail medium, rounded; legs rather long; lower third of tibia naked; toes long, margined, flattened underneath; outer connected to the middle toe by a large membrane; inner very slightly connected to the middle toe; upper parts brownish olive-green,

with a somewhat metallic or bronzed lustre, and with numerous longitudinal lines, and sagittate, lanceolate, and irregular spots of brownish-black, having the same lustre; line over the eye and entire under parts, white, with numerous circular and oval spots of brownish black, smaller on the throat, largest on the abdomen; quills brown, with a green lustre; primaries slightly tipped with white and having a white spot on their inner edges; secondaries white at the base and tipped with white; middle feathers of the tail same green as the other upper parts; outer tipped with white, and with irregular bars of brownish-black; bill yellowish-green, tipped with brown; feet reddish-yellow; iris hazel.

Length, 7.50 to 8; wing, 4.50; tail, 2; bill, 1; tarsus, 1.

Habitat, North and South America.

NUMENIUS LONGIROSTRIS (WILSON). (264.)

LONG-BILLED CURLEW.

This widely distributed species is nowhere better represented than in Minnesota,* or strictly speaking, in portions of it. They reach this latitude variously from the 20th of March to the first of May, usually about the 10th of April, and about the middle of May they mostly move beyond the Big Woods (referred to previously), whence to the British possessions they breed in different localities.

The nests, which I have not personally seen, are said to be in general scolopacine in character, never in communities, and located near, but not on wet lands or marshes as a rule. Not far from the 25th of May, they lay four eggs, "clay colored, with more or less olivaceous in some instances, and in others decidedly buffy shade. The spotting is generally pretty uniformly distributed and of small pattern, though in many cases there is larger blotching and even massing about the great end. The color of the markings is sepia or umber, of different shades in the buffy-tinged specimens, rather tending to chocolate. The shell markings are commonly numerous and evident." (Coues.) Early in August, the young have become strong enough for flight, and small flocks of them begin to be seen in the sections where the breeding has taken place. They gradually extend their range southward with the advance of the season, until by the first or second week in September, they have reached the whole southern portions of the states, while continued acces-

* The above was true when written, but the Curlews of this species, once so common, have become less so within the last decade, and now, having been driven back from both coasts by civilization, are found in great numbers far inland on the dry plains, where they are killed by scores and hundreds.

sions from more northern regions have more than filled their former places. By the middle of October, the northern, central portions, or perhaps I should say, the western central, longitudinal, have very large numbers of these birds, occupying the high or more sandy tracts. These afford them an abundance of their favorite food, the grasshoppers, to which may be added insects of several other species, like crickets and beetles, with land snails, and some species of berries.

When moving from one section to another, and when in their migrations they fly very high, and generally in a V-shaped flock, with the point of the angle foremost, after the manner of the geese, but not as persistently.

All leave the State by the 10th of October, a part of them a little earlier oftentimes. Accounted a marsh bird along the Atlantic coast, I find them quite as frequently on the dry prairies, far removed from any considerable marshes or ponds. They frequent plowed fields, and dry, extensive flats which have previously been overflowed, and have become dry again. This suggests earth worms, and certain forms of terrestrial mollusca, as preferred food. Their nests have been found in many sections, but uniformly on dry prairies so far as I have known. Like most others of the family, the structure is very primitive, consisting of a small quantity of grass, circularly disposed in a hollow made by the bird in the ground, under the leaf of a few rank weeds, or a bunch of coarse grass. The eggs are four in number, rather of a drab, or clay color. I think they might sometimes be called buff-colored, when having a shade of olivaceous. They are uniformly spotted with umber of several shades, more pronounced about the larger end.

In form they are decidedly gallinaceous, differing in this markedly from most Scolopacine species. They rear but a single brood, the nest for which is built from the 20th to the 30th of May. In their fall migrations most of them depart before the 25th of October, yet I have met with a few as late as the 10th of November.

SPECIFIC CHARACTERS.

Bill very long, much curved; upper mandible longer, somewhat knobbed at the tip; wing rather long; legs moderate; toes united at the base; entire upper parts paler rufous tinged with ashy; each feather with transverse and confluent bands of brownish-black, most numerous and predominating on the back and scapulars; secondary quills, under wing coverts and axil-

laries bright rufous; primaries with their outer webs brownish-black; inner webs rufous with transverse bands of black; under parts pale rufous, with longitudinal lines on the neck and sides; tail rufous, tinged with ashy transversely barred with brownish-black; bill brownish-black; base of under mandible reddish-yellow; legs bluish-brown; specimens vary to some extent in the shade of the rufous color of the plumage, and very much in the length of the bill, the rufous probably being more distinct in the young; iris hazel.

Length, 25; wing, 10 to 11; tail, 4; bill, 5 to 8; tarsus, 2.25.

Habitat, Temperate North America.

Mr. Washburn in his report of the birds of the Red river valley, covering his observations made between July 28th and September 12th, 1885, says of this species: "I have been much disappointed in not finding more of these birds. Only a few individuals observed. Was informed by sportsmen in Ada that they were not present this season in regions where they were extremely abundant last year. They are found, too, farther east near 'The Ridge' in larger numbers than close to the Red river."

NUMENIUS HUDSONICUS LATHAM. (265.)

HUDSONIAN CURLEW.

I formerly met with this species more frequently than of late years, and why so I cannot explain to my own satisfaction. They were always associated with the Long-bills, except upon one occasion, when I found a flock of eight by themselves in spring migration, it being then early in April.

Only a single bird was obtained, but a number found their way into the taxidermist's collections. And from time to time I have found specimens of this species in those places. They are more frequently obtained in the autumnal than in the vernal migrations, and except as above, invariably mingle with the other species. I know nothing of their habits beyond the fact of their presence in migration in very limited numbers.

SPECIFIC CHARACTERS.

Bill about twice the length of the head; wings long; tail short; legs moderate; head above brownish-black, with a longitudinal band; other upper parts brownish-black, tinged with ashy, spotted with dull yellowish-white, and lighter on the rump; under parts dull yellowish-white, with longitudinal narrow stripes of blackish-brown on the neck and breast; under wing coverts and axillaries pale ashy-rufous, transversely barred with black; quills brownish-black, with transverse bars of pale rufous on the inner webs; tail brownish-black, with transverse bars of pale ashy-brown; bill brownish-black, base

of lower mandible reddish-yellow; legs greenish brown; specimens vary in the shade of the lighter colors of the plumage, and in the length of the bill; iris brown.

□ Length, 18; wing, 9; tail, 4; bill, 3 to 4; tarsus, 2.25.

Habitat, North and South America.

NUMENIUS BOREALIS (FORSTER). (266.)

ESKIMO CURLEW.

I find specimens of this species of Curlew occasionally in the hands of the taxidermists, and have had them sent to me from the Red river once, but have never seen them alive. I was ready to doubt their specific identity almost, until I read Coues' account of his observations of them in the Missouri region, in his *Birds of the Northwest*, pp. 510-512.

If they are so abundant along the Missouri, it seems most probable that flocks may not altogether infrequently find their way along the Mississippi, and up the St. Peters or Minnesota rivers, and be regarded as rather small representatives of the "Short Bills" by the hunters, who have more interest in them as game than specimens for the cabinets of birdologists.

SPECIFIC CHARACTERS.

Bill rather longer than the head, slender; wings long; tail short; legs moderate; entire upper parts brownish-black, spotted with dull yellowish rufous; quills brownish-black, uniform on both webs, without bars on either; under wing coverts and axillaries light-rufous, with transverse stripes of brownish-black; under parts dull-white; tinged with rufous, with longitudinal narrow stripes of brownish-black on the neck and breast, and transverse stripes of the same on the sides and under tail coverts; tail ash-brown, with transverse bands of brownish-black; bill brownish-black; base of under mandible yellow; legs greenish-brown; iris dark-brown.

Length, 13.50; wing, 8.25; tail, 3; bill, 2.25 to 2.50; tarsus, 1.75.

Habitat, eastern North America.

Family CHARADRIIDÆ.

CHARADRIUS SQUATAROLA (L.). (270).

BLACK-BELLIED PLOVER.

I know of no other species of Plover which is a more regular, and numerically uniform migrant in both spring and autumn in the locality from which I write. They are only moderately represented, arriving about the last of April in flocks of ten to twenty, but do not seem to remain but three or

four days before they disappear, and I supposed for many years that they all passed beyond the State line, but some time in the summer of 1875, a clutch of four eggs were sent me with the female, which proved to be a Black-bellied Plover. It was obtained in the vicinity of upper Lake Minnetonka, in my own county. Since then several nests have been reported by persons competent to determine them, and I accept the conclusion that this species breed to a limited extent in some portions of the State. The nest differs in no particular from those of the other species of the family.

A natural depression in the ground, of about the size desired, is selected, or else one is scratched out by the female, and lined with a few leaves, blades of grass, or moss, in which are deposited the orthodox four eggs. These are a creamy-buff color with spots and confluent blotches of umber and obscure touches of lilac, chiefly about the larger end. They reappear in moderate flocks about the middle of September and are frequently seen until the second week in October. They are offered in the market in autumn, and are regarded good eating.

SPECIFIC CHARACTERS.

Bill and legs strong; wings long; a very small rudimentary hind toe; around the base of the bill to the eyes, neck before and under parts of body, black; upper white, nearly pure and unspotted on the forehead, sides of the neck and rump tinged with ashy, and having irregular transverse bars of brownish-black on the back, scapulars and wing coverts; the brownish-black frequently predominating on those parts, and the rump also frequently with transverse bars of the same. Lower part of the abdomen, tibia, and under tail coverts white. Quills brownish-black, lighter on their inner webs, with a middle portion of their shafts white, and a narrow longitudinal stripe of white frequently on the shorter primaries and secondaries. Tail white, with transverse imperfect narrow bands of black. Bill and legs black, and black color of the under parts generally with a bronzed or coppery lustre, and presenting a scarelike appearance; the brownish-black of the upper parts with a greenish lustre.

Length, 11.50; wing, 7.50; tail, 3.

Habitat, nearly cosmopolitan.

CHARADRIUS DOMINICUS MÜLLER. (272.)

AMERICAN GOLDEN PLOVER.

A very abundant migrant, but a very uncertain one, sometimes reaching us in spring in considerable flocks, and at other seasons giving us the complete "go-by." They reach the State in the

last week of April, and are all gone beyond our borders by the 5th of May. Not later than the last week of August they return in force, as a general thing, when they remain till October 25th to November 1st, gradually diminishing in numbers, however, after about the 25th of September. Indeed, there is not more than ten days good shooting, before the diminution of their numbers is visible.

As in the spring migration, they often elude any given locality in the fall, evidently being capricious as to the special line taken. Dr. Hvoslef reports them abundant during October, 1884, in Fillmore county. And so from most sections of the entire field of my inquiries.

In their flights over the plowed fields, where they mostly feed in autumn, they are a beautiful composite on wings, constantly changing hues of colors as they alternately exhibit the upper and the under parts in the rays of an October sun. Grasshoppers are their ordinary diet, but when they resort to the plowed fields it must be for larvæ and other insects, as the former are chiefly obtained on the grass lands.

We seldom see them when they are not mixed with other species to some extent at least. I know very little of their habits.

SPECIFIC CHARACTERS.

Bill rather short; legs moderate; wings long; hind toe wanting; tarsus covered before and behind with small, circular or hexagonal scales, upper parts brownish-black, with numerous small, circular and irregular spots of golden yellow, most numerous on the back and rump, and on the upper tail coverts, assuming the form of transverse bands generally; also with some spots of ashy-white; entire under parts black, with a brownish or bronzed lustre; under tail coverts mixed or barred with white; forehead, border of the back of the neck, under tail coverts and tibia white; axillary feathers cinereous; quills dark brown; middle portion of the shafts white, frequently extending slightly to the webs, and forming longitudinal stripes on the shorter quills; tail dark brown with numerous irregular bands of ashy-white, and frequently tinged with golden yellow; bill black; legs dark bluish-brown.

Length, 9.50; wing, 7; tail, 2.50.

Habitat, Arctic America.

My correspondents all report it occurring in the different sections of the State much as above given.

EGIALITIS VOCIFERA (L.). (273.)**KILLDEER.**

A common summer resident, reaching the State generally amongst the earliest migrants of its family, if not the earliest itself. In 1869 they came on the 18th of March, and in 1884, on the 25th of that month, between which days in March are nine-tenths of their arrival records for two decades.

At these times they are in parties of 5 to 7 or 8 individuals, "roaming about high in air, tracing the shore of the river, or running amidst the watery flats and meadows. As spring advances, they resort to the newly plowed fields, or level plains bare of grass, interspersed with shallow pools; or dry sandy fields. In some such situation they generally choose to breed, about the beginning of May. The nest is usually slight, a mere hollow, with such materials drawn in around it as happen to be near; such as bits of sticks, straws, pebbles or earth. * * * In some cases there are no vestiges of a nest. The eggs are usually four, of a bright rich cream, or yellowish clay color, thickly marked with blotches of black.

* * * * Nothing can exceed the alarm and anxiety of these birds during the breeding season. Their cries of *kill-deer, kill-deer*, as they winnow the air over head, drive, and course around you, or run along the ground counterfeiting lameness, are shrill and incessant." (Wilson). No locality I have visited in the State, where the conditions favoring their habits exist, has failed to have a fair representation of these familiar birds from March till late in October, and sometimes, the tenth of November. In the early part of their residence, they are seen in the small flocks mentioned, but after a short time in pairs only until in July, when the brood full grown, with the parents, constitute small flocks again, in which they are mostly seen until their departure for the winter. Dr. Hvoslef reports them common for the species in the southern part of the State, and Mr. Washburn found them the same in the western, while it has been mine to find them fully up to their observations in the central and northern to Duluth. When thoroughly fattened they are fairly good eating in the autumn.

SPECIFIC CHARACTERS.

Wings long reaching to the end of the tail, which is also rather long; head above and upper parts of body light-brown with a greenish tinge; rump and upper tail coverts rufous.

lighter on the latter; front, and line over and under the eye white; another band of black in front above the white band; stripe from the base of the bill towards the occiput brownish-black; ring encircling the neck, and a wide band on the breast black; throat white, which color extends upwards around the neck; other under parts white; quills brownish-black with about half their inner webs white, shorter primaries with a large spot of white on their outer webs, secondaries widely tipped or edged with white; tail feather pale rufous at base; the four middle feathers light olive-brown tipped with white and with a subterminal band of black; lateral feathers widely tipped with white; entire upper plumage frequently edged and tipped with rufous.

Length, 9.50; wing, 6.50; tail, 3.50.

Habitat, temperate North America.

EGIALITIS SEMIPALMATA BONAPARTE. (274.)

SEMIPALMATED PLOVER.

The lateness of the season when this Plover enters Minnesota, early suggested that it must breed here, but no nests were found for many years. Flocks of a dozen or less are quite uniformly met with in the last week in April along the streams, and about the ponds and lakes, more after the manner of the Snipes than the Plovers, which affect the dry open plains. After remaining where they are frequently seen for about ten days, they disappear as abruptly as do the Swallows in autumn, and are seldom seen again till August 20th to the 25th after which they remain until the early part of October before taking final leave of us for the more genial climes, said to be Brazil and Peru and South America. At this season they gather into quite large flocks before retiring, which we are told become much larger as they gradually work their way southward. The nest is little more than a slight hollow, excavated in the sand by the bird, near the shores of ponds, and contains the stereotyped number, four eggs of a dull yellowish color, spotted and blotched all over with varying shades of darkish-brown. They are almost typically pyriform in shape. One nest was discovered near St. Paul in 1879, by Mr. Gober, who sent the eggs away to some eastern oölogist as a capital trophy, but not until I had an opportunity to examine them, and see the female, obtained at the same time. The other nest was obtained by a resident of Minneapolis, and not far from the city, and still more recently with which the bird was secured also. I hear of one, also found quite as near the city, by a young man who, for some reason best known to

himself, is disinclined to let his oölogical acquisition lend its rush light to the State Natural History Survey. Dr. Hvoslef writes me that he obtained the species in Lanesboro on the first and fourth of August, 1884. Mr. Lewis did not meet with the nests in Becker county, but found the birds occasionally in July and August. I have seen flocks still flying about in one year as late at the 20th of October, but this was exceptional.

SPECIFIC CHARACTERS.

Small, wings long; toes connected at base, especially the outer to the middle toe; front, throat, ring around the neck, and entire upper parts, white; a band of deep black across the breast, extending around the back of the neck below the white ring; band from the base of the bill, under the eye, and wide frontal band above the white band, black; upper parts light ashy-brown, with a tinge of olive; quills brownish-black, with their shafts white in the middle portion, and occasionally a lanceolate white spot along the shafts of the shorter primaries; shorter tertiaries edged with white; lesser coverts tipped with white; middle feathers of the tail ashy olive-brown, with a wide subterminal band of brownish-black, and narrowly tipped with white; the two outer tail feathers white, others intermediate like the middle, but widely tipped with white; bill orange-yellow, tipped with black; legs yellow. □

Length, 7; wing, 4.75; tail, 2.25.

Habitat, Arctic and Subarctic America.

Family APHRIZIDÆ.

ARENARIA INTERPRES (L.). (283.)

TURNSTONE.

I can only record this species as extremely rare, as I have but a few instances of its observation amongst my notes for almost thirty years.

The earliest was in the fall of 1867, when I found it in a collection of mounted birds, the individual having been obtained recently in a flock of Sandpipers, on the Mississippi river just below St. Paul.

I saw no more until 1874, which I obtained from another flock of Sandpipers near Minneapolis, since which one or two have come into our market in strings of scolopacine birds, and always in autumn.

It may be accounted rare, but not a straggler, for I am satisfied now that it remains within the vicinity of where I have met with it, as it was late in July in two instances. Their habit of prodding under the stones along the beach of the lake near which my summer cottage is located, interested me exceedingly. The crop was abundantly stored with larvae and insects that abound there. I think that they remain about as late in the autumn as do the average of the Sandpipers, before retiring for the winter.

SPECIFIC CHARACTERS.

Upper parts variegated with black, dark rufous, and white; head and neck above white, with numerous spots and stripes of brownish-black on the crown and occiput; space in front of eye white, surrounded with black; throat white on each side of which is a stripe of black running from the base of the bill downwards and joining a large space of black on the neck before the breast; abdomen, under wing coverts, under tail coverts, back and rump, white; quills brownish-black, with white shafts; tail white at base, with its terminal half brownish-black, tipped with white; greater wing coverts widely tipped with white, forming a conspicuous oblique bar across the wing; bill black; legs orange; in winter the black of the upper parts is more apparent; the rufous of less extent, and of lighter shade; iris hazel.

Length, 9; wing, 6; tail, 2.50.

Habitat, nearly cosmopolitan.

Order GALLINÆ.

Family TETRAONIDÆ.

COLINUS VIRGINIANUS (L.) (289.)

BOB-WHITE.

This species whose notes from the corn field or the fence down by the woods, are a part of the legacies of childhood memories, is following up the progress of agriculture steadily, but is nowhere yet abundant. After a series of mild winters it has several times become greatly increased in numbers, to be again decimated by an exceptionally vigorous one.

However, the extension of agriculture throughout the State generally, has increased the measure of their protection so much, by affording a more reliable supply of food, and comfortable covert, that they give promise of a permanent augmentation of their numbers.

For quite a number of years now, the notes of Bob-white have grown familiar in the region where I reside, and the sight of his form along the roadways through the less frequented brushlands, as well as the denser woodlands, is by no means an uncommon event during the summer and autumn. Their distribution is yet restricted to the more favorable localities, especially in the advanced sections of occupation. But each year is contributing to make the special distribution less defined in proportion to the increase of the agricultural appropriation of the lands, as well as the prohibition of brushland fires. The earliest record that I have of its nesting in the section where I reside, is May 5th, and I think that not exceptionally early. My correspondents in the lower counties give it a week earlier and the greater abundance of the species there gives them ample opportunities to know in this matter. Mr. J. C. Baillie who has given their whole breeding habits great attention for many years, has contributed more than any other to my own

observations of this species. The nest varies considerably in the amount, as well as the kind of material of which it is composed. In the vicinity of meadows where grass is abundant, it is constructed entirely of that material, necessitating considerable bulk, but is nevertheless very perfectly concealed in a thick tuft with the entrance at one side, somewhat after the manner of the Oven Bird. When in the forest, the preference is given to a little hollow under an old decayed log, where the nest is constructed of leaves principally, or entirely.

In these cases, it has no covering, but when the eggs are in process of being laid, the female covers them completely with leaves to conceal them in her absence. If those ingeniously distributed leaves are disturbed by man or animal before she returns, she will instantly discover the intrusion, and abandon her nest even though no eggs have been broken or removed. Whether from a perception of smell or the difference in the placing of the leaves by the intruder I was never able to tell until upon finding one a few years since, I removed each leaf carefully with a pocket forceps, and after making all desired observations of the eggs, I replaced the leaves one by one as nearly as I found them as possible, and repeated the process every day or two, until the clutch was completed, without arousing the maternal suspicions in the least. This result satisfied me that she could smell an intrusion made without the use of the forceps. Winds might disarrange the leaves during her absence as much as I would, but leave no scent upon them or upon the eggs. The usual number is from 14 to 16, or even 18, but upon removing the seventh each time after it was deposited, in one instance, a gentleman of extensive observation, who has contributed much valuable information upon the habits of different birds, succeeded in obtaining 32 successively before the little dispenser had suspected her mathematics. Their appearance is too familiar to require mention. Although with its order a seed eater, that is not all.

The quail is another of the many maligned species of birds that is entitled to the protection of the State as a friend to agriculture. Although they may appropriate occasionally some of the late planted berries of grain in spring they pay soundly for it in the destruction of insects that are injurious to grain, fruit and vegetables later. Nearly the entire food of the breeding birds consists of larva and insects, and that of the numerous brood exclusively so, for the other sources of sup-

ply are not yet developed. Of course during the late autumn, winter and early spring, they depend upon seeds, grain and buds, but only the unavoidable waste of the farm and garden. During these seasons, if possible, they should have the greatest measure of legal protection against hunters and trappers, for then must they become most available to them, being driven by the necessities of food to the vicinity of outhouses, barns, straw-stacks and dwellings. Their habits at the different seasons of the year afford one of the most interesting studies of birdlife. Protect them and they rapidly become tame and confiding.

In my early boyhood in western New York, I was led to habits of observation of birds in winter, by this species more than any other. Following the example of older observers, whose interest was not as disingenuous as mine, I often caught several of them at a time in a lath-trap of the figure four kind, and in a few hours had them sufficiently domesticated to eat freely of corn and wheat dropped down to them through the slats, and within a week, upon setting them free, instead of flying away never to return they were afterwards to be seen daily feeding amongst the hens and the cattle in the barnyard. I am happy to say that I never permitted my love for "quail on toast" to appropriate one these who had thus confided in me.

It seems to be superfluous to give any specific description of this bird, yet for those whose opportunities have been less favorable, from having long resided so far north where the circumstances have been unfortunate for their multiplication, I will say that the Quail measures about 10 inches in length; the wing, 4.70; and tail 2.85. Their color is a bright reddish-brown, streaked frequently with black, shading into gray. The under parts are white with zigzag lines of black crosswise. The throat of the male is much whiter than that of the female. It is found in the middle and western states, including Canada West and Minnesota to the Rocky Mountains.

I have learned from Rev. Mr. Gear, who was an army chaplain, stationed at several fortifications from time to time in the earliest history of Minnesota, that there were no Quails here until imported and set at liberty by the sportsmen amongst the army officials on different occasions, but the want of food and covert in severe winters prevented their material increase in numbers until the advent of general farming.

Only one or two flocks have yet been seen as far north as Red Lake Falls and at a few points in the latitude of Otter Tail.

DENDRAGAPUS CANADENSIS (L.). (298.)**CANADA GROUSE.**

The lumbermen of the forests east and north of Brainerd, for years before I ever obtained one, repeatedly told of a "partridge" in logging sections that was different from those we ordinarily see.

By a good fortune, two Canada Grouse were sent to my taxidermist, Mr. Wm. Howling, to be mounted many years ago, one of each sex, which I had ample opportunity to examine. Since then many more have reached me through the same channel, and I have myself procured several. They are permanent residents of the northern half of the State, scattering individuals reaching a south line of its habitat about sixty miles northeast of Minneapolis. It is said to be a very dull, stupid Grouse, easily obtained by almost any ignoble means which lumbermen and Indian boys may adopt, and consequently subject to exceptional destruction where desired for food. The flesh is not as desirable as the Ruffed or Pinnated Grouse, yet the Indians of the section where it has most abounded have made them relatively quite scarce of late years. But as a whole, it is a common species in the sections named, and not at all confined to the spruce swamps as we have been informed hitherto. Its nest, consisting of moss and leaves, is on the ground, with less effort at concealment than the other members of the family manifested in the evergreen swamps of the regions they inhabit, and are rather easily found. The eggs, said to be about the same in number as those of the Ruffed Grouse, are a dirty-cream color, blotched considerably with dark-brown. Their note is described as a suppressed cluck. Langille says of this species: "It is the aristocrat of the family, stepping daintily on its moss-covered and deeply-shaded apartments, feeding in the summer on such berries as may be found in the forest, and in winter being content with even the leaves of the evergreens."*

In his excellent report to me of the birds of Otter Tail, Aitkin and Mille Lacs counties, Mr. Washburn says of this grouse: "This bird was reported to me as common north of the centre of the State, and in the northeastern part. In Otter Tail county, there being no pine or spruce, I did not expect to find it, but was much disappointed in not meeting with it at

*Birds in their Haunts, p. 409.

Mille Lacs, where there is more or less spruce. In a conversation with Mr. E. O. Garrison, of this latter place, he said that from 1865 to 1868, the Spruce Partridge was quite common about the lake, frequenting the spruce groves. He often met with covies of six or more in his walks, and found them nesting on mossy hummocks among the spruce. Since then, however, they seem to have been exterminated in that locality. They are such a stupid bird, so very tame that they form an easy mark for the arrow of the young Indian boy. They are often captured alive by a noose fastened to a short pole."

It is represented to be common north of Mille Lacs, and generally throughout the evergreen sections of northern Minnesota. Its habits exempt it from all suspicions of enmity to agriculture in its widest sense. In confinement it fattens quickly upon food that makes its flesh acceptable even to the daintiest epicures

SPECIFIC CHARACTERS.

Tail sixteen feathers; feathers above banded distinctly with plumbeous; beneath uniform black, with a pectoral band of white and white on the belly; chin and throat above black; tail with a broad brownish-orange terminal band. Prevailing color in the male, black; each feather of the head, neck, and upper parts generally having its surface waved with plumbeous-gray in the form of two or three well defined concentric bars parallel to each other, one along the exterior edge of the feather, and the others behind it; sides of the body, scapulars, and outer surface of wings mottled like back, but more irregularly, and with a browner shade of gray, the feathers with a central white streak expanding towards the tip (on the wing these streaks are seen only on some of the greater coverts); no white above except as described; under parts mostly uniform black, feathers of sides of belly and breast broadly tipped with white, which sometimes forms a pectoral band; a white bar across the feathers at base of upper mandible, usually interrupted above; a white spot on the lower eyelid, and a white line beginning on the cheeks and running into a series of white spots in the feathers of the throat; lower feathers of this are banded terminally with whitish; feathers at base of bill, head, below the eyes and beneath, pure black; quills dark brown, without spots or bands, the outer edges only mottled with grayish; tail feathers similar but darker, and tipped with a band of orange-chestnut nearly an inch wide, obscured on the central feathers; under tail coverts black, broadly barred and tipped with white; the feathers of the legs mottled brown and whitish; dirty white behind the tarsi; bill black.

Length, 16.20; wing, 6.70; tail, 5.50.

BONASA UMBELLUS (L.). (300.)**RUFFED GROUSE.**

Nowhere was the Ruffed Grouse more abundant than in all the deciduous forests of this State, until mercilessly slaughtered by the pot-hunters. Almost any cluster of trees, particularly if well interspersed with brush, to say nothing of the extended forests of hardwoods stretching north and south and east and west over the middle and southern portions of Minnesota, formerly contained its covey of "pheasants," as these birds are popularly called. But their "glorious day is passing away" as fast as about 300 dogs and 700 double-barrelled breech-loading shotguns can accomplish their annihilation. Improved game laws, which restrict the limits of the time in which their destruction may be continued, may prolong their representation among the bird-fauna of the State somewhat, but how much, time alone can demonstrate.

Not long after the first of May, the female seeks a retired spot on slightly elevated ground or on a gentle declivity, and under a more or less weathered log or in a bunch of thick brush, she scrapes out a slight hollow in the ground, into which she gathers a plentiful supply of leaves, which by treading while turning round and round she shapes into a loose nest, in which she drops about fourteen eggs.

Whenever she leaves her nest she carefully brings a good supply of dry leaves and drops them over it in such perfect imitation of the work of the wind that there is not the slightest indication of a nest left. For many years these birds bred on the rear end of my "Cosy Nook Cottage" lot, on the east shore of Lake Minnetonka, where I had an exceptionally good opportunity to study their habits in the period of incubation. I am satisfied that the male has no part in domestic duties during this time but spends his time to a considerable extent in the society of the other coxcomb-shirks of his sex—for at those times I have never seen one of them in the same section. While yet laying, if the female hears footsteps approaching her, she steps off the nest and turns and places leaves over the whole, one at a time, so rapidly that before the spot has been reached all is perfectly concealed and she has a chance to get from ten to twenty yards away where she watches the intruder until he has clearly passed the nest, when

she will bound up with a whirl, and putting a tree between herself and the invader, flies half a mile away before alighting on the limb of a tree in safety.

Every chick will follow her the next day after the last one is out of the shell, and they have all become nearly full grown before the male resumes his place at the head of the family.

The covey remain together until pairing time in the next spring when all the members are supposed to pair and set up for themselves.

After the most careful observations I am entirely unable to decide how the sound of the drumming is produced. Like the question *how* a bird flies, the answer is yet in the shadowy distance if it has itself ever taken wing yet. I have heard all of the arguments pro and con, and know from personal observation that not one of them will "hold water." Yet it seems strange that phenomena so obvious to both the senses of hearing and seeing and under the observation of so many critical observers cannot be explained unanswerably.

It is a very universally distributed species, though less abundant in those portions of the State that are occupied by the Canada Grouse.* Everywhere else, as above intimated, where the hunters have not ruthlessly "cleaned it out," (to use their own expressive language,) the Ruffed Grouse is abundant in its characteristic haunts.

From the southern line of the state to the Lake of the Woods in the extreme north, I have the most reliable reports of the species.**

Its drumming has been heard in Fillmore county as early as the 28th of March, and in Hennepin county on the first of April, from which I infer that the nesting may in some cases be earlier than above given. Their patent diet of seeds, berries, grapes, and insects in summer, and "the leaves of evergreens" in winter needs no repetition, but I have nowhere seen any mention of the buds of the ironwood, (*Ostrya virginica*), which constitutes almost their exclusive food in winter here. Their general habits otherwise do not differ from those of the species in other sections of its distribution. Farmers would think better of them after examining the contents of the stomachs of as large a number as I have at various seasons of the year. They are as partial to most species of insects as are domestic fowls.

*F. L. Washburn's Red River Valley, Thief River, and Mille Lacs Rep.

**Dr. Hvoslef and Kennicott's Lake of the Woods Rep.

SPECIFIC CHARACTERS.

Tail of eighteen feathers; reddish-brown or gray above, the back with cordate spots of lighter; beneath whitish, transversely barred with dull-brown; tail tipped with gray, and with a subterminal bar of black; broad feathers of the ruff black.

Length, 18; wing, 7.20; tail, 7.

Habitat, Eastern United States.

LAGOPUS LAGOPUS (L.). (301.)

WILLOW PTARMIGAN.

Having listed this bird from time to time on the fact of finding it in several collections, and in the hands of the taxidermists, without having found it after many years of observation, I had about concluded to regard it as a straggler, when I was more fortunate and secured one at least 20 miles northeast of Anoka. Since then I have obtained several, and have in my possession as perfect a pair in winter plumage as I have ever seen, mounted and presented to me by the Messrs. Howling, on Christmas, 1890.

The entire plumage is white in winter except the tail which is black, narrowly tipped with white, and the shafts of the quills which are also black. The bill is very robust and arched, and black, while the nails of the toes are black at the base, and pale horn color at the tips. I have learned nothing of their habits from personal observation. They must be accounted rare in Minnesota. Their habitat as given by the A. O. U. is "Arctic regions; in America south to Sitka, British Provinces, and to Northern New York." To this we must add Minnesota.

TYMPANUCHUS AMERICANUS (REICHENBACH). (305.)

PRAIRIE HEN.

The local history of the Pinnated Grouse does not differ materially from that of any other prairie country recently brought under civilization and cultivation. From the most reliable sources within my reach, I learn that when the white man first came to Minnesota, these birds were by no means common. Rev. E. G. Gear, one of the earlier chaplains in the regular army, stationed first at Fort Snelling and afterwards at Fort Ripley, (or perhaps in the reverse order), was a very accurate observer of all natural history phenomena, and especially so in the department of birds.

Enjoying a prolonged acquaintance with him, I availed myself of his observations in those early times, to learn the habits of the more common species especially. He stated that the prairie hens were seldom seen at the first, but after the country began to become settled considerably, they increased in numbers perceptibly from year to year. The Blackfoot Grouse, (*Fediocætes phasianellus* (Linn.)), were the dominant grouse-kind of the territory, and very well represented in the openings, and wherever there was much brush-lands, but were never found on the open, uncultivated prairies. This corresponds with my own observations of the habits of the Pinnated Grouse in Illinois, as far back as in 1836, the first summer of my residence there.

I shall never forget the first boomings of the males at day-break. My duties called me out at that early hour, and far on to the prairies, six days every week, when I had ample opportunities to become familiar with the weird notes of the amorous males. At that time I never could make out more than three sources, rarely more than two, from which these boomings seemed to come, but from year to year the numbers increased until I am sure there were not less than as many dozens, and whereas at the first, a bag of ten or twelve birds was a good showing for an expert "on the wing," for one day, it was a common affair afterwards for "a common shot" to bring in 50 to 60 birds after a very short day, and experts many times boasted their one hundred.

The grain fields afforded both food and protection for them until the farmers complained of them bitterly, but not half so bitterly as they did afterwards of the bird-destroyers who ran over their broad acres of wheat, oats and corn in the order of their ripening. The farmers are proverbially hard—for sportsmen—to please. Just here I may best introduce some portion of Mr. Washburn's report of his experiences when in the Red river valley, and with special reference to this species. He says:

"Extremely common in the prairie lands throughout the valley, particularly near farming lands in the vicinity of wheat fields. Replaced in a great measure by the preceding species in the northern part of the State. Perhaps for the benefit of the uninitiated, it would not be out of place to here give an account of the *modus operandi* of hunting a bird which is an object of such universal pursuit among sportsmen, and has become an article of commercial importance; and this may pos-

sibly be best accomplished by recalling the pleasant experiences of a chicken hunt in the southwestern part of the State, participated in by the writer, at the invitation of three others, Mr. Rand, Mr. George Morrison, and Mr. Dolliver. It was my first experience in western shooting, and the memory of the hunt, and the thought of that pleasant company with which it had been my good fortune to be united for two days, will always be a source of pleasure. Two of that party we shall never see again here, but I am not the only one who has been made happy by their genial presence; there are many of us who will never forget them.

“As a rule business men can spare but a day or two from the city for a ‘chicken hunt,’ and these were no exception. A telegram August 13th to New Richland, advised a well-known and well-tried landlord there, that a party of four would be down on the evening of the 14th; ‘have good rooms ready; we want you, your team and dog on the 15th.’ Then, on the afternoon before the auspicious 15th, the jolly company, with perhaps three dogs tied in the baggage car, and a liberal supply of ammunition in their carpet-bags, are transported, after two hours’ ride, to the little prairie town with its one street, a few grocery stores, saloons, elevator, and one ‘best’ hotel. Here they find everything in readiness, and after passing criticism on the dogs of various other hunting parties, and a whispered, mysterious conference with the landlord as to the location of the ‘best ground,’ the party retire to beds whose hardness is rendered endurable only by anticipation of the morning pleasure. Then, what seemed to be an hour’s rest, rudely broken by the landlord who knocks at the door, with the announcement that ‘it is three o’clock,’

“A hasty donning of shooting jackets, filling of cartridges bags or belts, a still more hasty breakfast, prepared by the much enduring, patient wife of the landlord, a selecting of the right dogs from the crowd of creatures, old and young, good and bad, that are kenneled in and about the house, a packing of lunch into the wagon, not omitting a good supply of water for man and dogs, and we are off at a brisk pace, while the dawn is first lighting up the east. The uncomfortable feeling caused by being awakened so early from a sound sleep, and being obliged to leave a comfortable (?) bed is soon forgotten in the novelty of our situation. As the light grows brighter objects which looked indistinct and shadowy in the darkness, are seen with more clearness and prove to be wheat stacks, or

clumps of trees, or log shanties, from which the sleepy farmers are just emerging to milk the cows standing in the neighboring barnyard. As it grows lighter, occasional Teal are flushed from little pools beside the road, and flocks of Mallards are observed flying over the tall grass of prairie sloughs. Then comes the sun gradually dispelling the mist which hangs low in early morning, and warming the rather chilly air. Before us stretch the hunting grounds, large wheat fields, from which the grain has been removed, interspersed with meadows of tall grass, numerous "sloughs," and farm houses where locations are marked by rows of cottonwood trees. The driver turns into the stable, there is a loading of guns, and the dogs are let out of the wagon, two at a time in order that they may not all tire before the day's sport is ended.

"These creatures, at whom the day before, we grumbled for being under foot and who stalked gloomily about with drooping tails and ears, today are transformed into different beings, and have our pleasure in their own noses. Away they go, coursing the stubble from right to left and vice versa, at a motion of the master's hand. Mark! One has stopped. He is eagerly sniffing the ground, picking his way carefully along, while his tail in rapid motion shows his excitement. The other dog soon sees his companion's agitation and hastening to him, catches the scent of the covey. Then both their tails going round and round they push slowly on, step by step until suddenly the foremost dog stops, his head turned a little to one side and his nose pointing downward. His tail has suddenly become rigid. The other, the younger of the two, being somewhat of a tyro, and this being the first of the season, has in his eagerness run too close to a chicken and when the bird flies up from under his nose, the startled dog gazes after him and then turns his head toward the wagon to see what action his master will take. If he could hear his master's remarks at that moment he certainly would blush, if a dog could blush, with shame. But he has found another and both dogs now stand like marble statues, while we, all four, jump from the wagon and with ready guns advance toward them amid cries of "steady Don, steady there? Hold him Grouse, steady sir!" Two are to shoot the birds on the right as they rise, two will take the birds on the left. Suddenly one of the covey, an old cock gets up—a report—a few feathers floating on the morning air, and the bird falls to the ground, where it soon flutters out its life. This generally startles the rest of the birds and they rise in a

body, six, ten, fifteen or even twenty. Eight fall, the rest fly half a mile or more, and are marked down by the driver. If a few stragglers remain behind, they meet their death a few minutes later when they rise. With the aid of the dogs the dead and wounded birds are found, thrown into the wagon and we drive on in the direction taken by the remainder of the flock. In this way several covies are found during the morning. Oftentimes the birds will not wait when in the stubble for the hunters to approach, but when disturbed by the dogs rise in a body and perhaps settle down again in tall meadow grass a quarter of a mile off.

“This is an unlucky move for the birds, since when in the tall grass they lie close, and can be flushed one at a time. I shall never forget our experience with a large covey of twenty birds that were flushed by the dogs, and marked down by the driver in a grassy slough half a mile away. On driving over there the dogs easily found the birds, and the four of us, standing in tall grass, kept up a furious fusilade for a few minutes. The birds rose one or two at a time from under our feet. A rustle in the grass beside or behind one, was followed by the sight of a Chicken that flew but a few rods, only to fall dead, and by its fall perhaps to startle another one from the covert to share the same fate. This particular morning was damp and so much smoke was hanging low over the grass that it enveloped us in a dense cloud and rendered firing a risky thing, for one could not tell just where the others stood. At eleven the heat of the sun obliges the sportsman to desist, and the team is driven to some farmhouse where the horses are fed, and the whole party reclining in the shade of the cottonwoods, discuss the morning's experiences and plans for the afternoon, and enjoy a comfortable *siesta*.

“During the middle of the day the Pinnated Grouse leaves the short stubble and seeks cool, damp resorts in the hollows of the prairie, where it is not so easily hunted, not coming to the wheat fields again until four or after.

“At that hour, the gunners start again, and from four till seven, repeat with varied luck, the morning's performance. At dusk putting on overcoats to keep off the chilly night air, and counting the birds, which during noontime they had drawn and stuffed with cool grass, they ride merrily back over the now dark prairie to the hotel, where a bountiful supper awaits them, and they compare notes with parties who went out in other directions. The second day is a repetition of the first,

perhaps in another direction, and on the third the hunters return home with their spoils, to distribute them among friends not so fortunate as to own a gun and a dog, when the double barrel is cleaned and put away, and business resumed."

I have introduced this detailed and circumstantial extract from Mr. Washburn's communication as one of the most faithful descriptions of a Prairie Chicken hunt that I have ever read, and as representing in all probability not less than two or three hundred other similar and simultaneous parties of hen-killers, conveniently entitled "sportsmen," found for several weeks within the dominion of our young State. No member of the bird family has ever received more universal recognition than this denizen of the broad prairies. From royalty to rags all classes have honored it with a place in the memory if not in the "bag," or the stomach, as proof of which we have only to point silently to the motley array of the wondrously improved double-barrelled shot-guns, ammunition, pointers, setters, elegant trains of sportsmen's railroad coaches side-tracked for days at a time in the vicinity of the bird's well known haunts far within our borders. Nothing short of a national jubilee and half-fares, so moves the masses and the classes as the dawning of the morn of the "open season" for shooting Prairie Chickens. Within the period of its history, the species has borne many "common" names, among which Heath Hen, Prairie Grouse, Prairie Chicken, Boomers, Pinnated Grouse, etc., and it is now refreshing and restful to learn that the decrees of exact science have finally settled upon "Hen."

SPECIFIC CHARACTERS.

Tail of eighteen feathers; general color varied, but dominantly whitish-brown and brownish yellow, almost everywhere with well defined transverse bars of brown on the feathers. Body stout, compact; a tuft of long, pointed feathers on each side of the neck, covering a bare space capable of inflation; tail short, truncated, much graduated; lateral feathers about two-thirds the middle; the feathers stiffened, nearly linear and truncate, scarcely longer than the coverts, and about half the length of the wing. Tarsi covered with feathers anteriorly and laterally to the toes, but bare with hexagonal scutellæ behind; middle toe and claw longer than tarsus; toes margined by pectinated processes. A space above the eye provided with a dense, pectinated process in the breeding season, some times separated from the eye by a superciliary space covered with feathers. Bands on body transverse throughout; lanceolate feathers of the throat black; upper ones with a central yellowish stripe; eyelids, and a stripe from the nostril along

side the head (interrupted above the eye), brownish yellow; sides of head below, a dusky infraocular stripe, with the chin and throat above, similar; feathers of the body above and below brown, with a terminal and two transverse bands of well defined white; the brown almost black and the white tinged with rufous above; scapular feathers sometimes showing more black; wings banded like the back; primaries grayish-brown, marked only on the outer webs with light spots, shafts black; tail feathers sometimes uniform brown, sometimes with rufous transverse bars; under coverts marked like the back, with more white sometimes; membrane above the eye and of the sounding bladder, orange.

Length, 16.50; wing, 8.80; tail, 4.70.

Habitat, prairies of the Mississippi valley.

PEDIOCÆTES PHASIANELLUS CAMPESTRIS

RIDGWAY. (308b.)

PRAIRIE SHARP-TAILED GROUSE.

Thirty years ago the Sharp-tailed Grouse were distributed over nearly the entire State, but were not popularly distinguished from the Pinnated Grouse. In common with the latter, they were all called "chickens," and if an occasional sportsman called attention to differences, the reply was "they are *blackfoots*."

It seems difficult to satisfactorily account for the fact, yet it nevertheless is such, that this species withdraws before the advance of civilization and agriculture, as the other moves along with it up to the occupation of a considerable proportion of its agricultural area. Amongst the sportsmen of later years have been some very observing amateur naturalists who have noted this unmistakable retrocession of the species. With characteristic pains, Dr. Coues approximatey traced the southern lines of distribution of this species across Minnesota in 1873, along the course of which an occasional "blackfoot" may still be found, but the representative numbers have deflected the aggregate line far to the north of west since that time. In other words, the other species has overflowed and buried it measurably out of sight for a considerable distance north and east. This leaves the area over which both species are in mutual possession much broader than formerly.

About the first of April, the booming of the males is heard. Coues says in *Birds of the N. W.*, "at the rallying cry the birds assemble in numbers of both sexes, at some favorable spot, and a singular scene ensues as the courtship progresses.

There is a regular "walk-around" as ludicrous to the disinterested observer, as some of the performances on the comic stage. The birds run about in a circle, some to the right, others to the left, crossing each other's path, passing and re-passing in stilted attitudes, stopping to bow, and squat, in extravagant postures, and resuming their course, till one would think their heads as well as their hearts were lost. But this is simply their way." This is the inauguration of the season, and very soon the nests are located in places almost, but of course not quite, as various as the domestic hen, for the latter does not always place it on the ground, while the former always does. A moderate hollow is selected or made, and a little grass is arranged in it after which a dozen or more rather slimmer, and longer eggs than those of the Pinnated Grouse but differing very little from them in color, are layed in it. The young of this species have been seen just out of the nest as early as the 5th of May, and as late as the 20th of June.

In sections of the northwestern and western portions of the State they are still abundant, but I have neither seen nor heard of any of them for several years in the southwest. Dr. Coues has a lengthy and exceedingly interesting description of this Grouse and its habits in his *Birds of the Northwest*, pp 407-419, which may be consulted for further information by those interested to learn.

SPECIFIC CHARACTERS.

Tail of eighteen feathers; colors white, black and brownish-yellow; above with transverse bars; the wings with round, white spots; beneath, pure white, with V-shaped blotches on the breast and sides.

Length, 18; wing, 8.50; tail, 5.25.

Habitat, more northerly than the last species.

Family PHASIANIDÆ.

MELEAGRIS GALLOPAVO L. (310.)

WILD TURKEY.

Thirty-three years ago the Wild Turkey was not a rare bird in northwestern Iowa and southwestern Minnesota, and it has been seen as late as 1871, in Minnesota, since which I have received no report from it, and I am of the opinion that it has now (1891) totally disappeared from our State. Possibly a straggler may yet be recognized in the southwest extreme of

the timber land of that section, and if so I trust that the fact may find publicity through some channel. Grand and inspiring as is the sublime march of civilization, we cannot look upon its tracks but with a degree of sadness and regret, strown as it is with the annihilated forms of so many species of birds, mammals and beautiful varieties of flowers.

The rear guard of that all-conquering force is pressed upon by a herd of vandals speaking the dialect of gentlemen, but wearing the habiliments of warfare on beings that can neither employ diplomacy nor shoot back at their foes. Brave men they are! It may be they have slain a majestic buffalo during the course of a ripe old youth and manhood. Perhaps they can claim to have "cleaned out the last chicken" or grouse in an entire county, *last Sunday*.

Order COLUMBÆ.

Family COLUMBIDÆ.

ECTOPISTES MIGRATORIUS (L.). (315.).

PASSENGER PIGEON.

Wild pigeons have been seen in the vicinity of Lanesboro, Fillmore county, and Spirit lake, Jackson county, the southern line of the State, as early as the 27th of March, but this is earlier than the average arrival in even those lower counties. A review of 20 years gives about the 5th of April, as nearer that time. And their first appearance has never been in such vast flocks as have characterized their spring migrations in Illinois and Indiana in the first years of their settlement by the whites. Still there have been occasional years when considerable flocks have located and nested in somewhat restricted localities throughout the state. I well remember one when a large flock roosted for some time in an extensive poplar grove but a few miles out of the city of St. Paul. It subsequently became distributed over a very wide extent of eastern Minnesota, and the western part of Wisconsin adjacent. The country generally throughout this district is to a great extent characterized by such groves of poplar, red and black oak brushlands. In these, on limbs generally not more than seven feet from the ground, they constructed their nests about the first of May.

These were very frail structures and placed on a limb where there was a horizontal branch. They consisted of a few long sticks scarcely as large as a clay-pipe stem, on which were distributed a scanty supply of twigs, or still smaller sticks, with a few leaves overlaying the whole. Some nests had no leaves at all, when the egg could be easily seen from underneath it. In all of my examinations of them I seldom found more than one egg in a nest. It was pure white, nearly oval.

Their food consisted essentially of acorns in the spring, but a heavy tax was levied on the wheat and oats in late summer and fall. Of late years but few are seen in any of the dis-

tricts which I have heard from. They have principally left the country by the first of November, although straggling individuals remain as long as the abundance of mast is uncovered by snow.

Wilson's estimate of the quantity of food they consume, is one of the most wonderful revelations in the literature of ornithology. I think it highly improbable that large numbers will ever give material cause for anxiety to the agricultural interests of Minnesota, yet I cannot be assured, for the migrations of the species are exceedingly capricious.

SPECIFIC CHARACTERS.

Tail of twelve feathers; upper parts generally, including sides of body, head, neck and chin blue; beneath purple brownish red, fading behind with a violet tint; anal region and under tail coverts bluish white; scapulars, inner tertials and middle of back, with an olive-brown tinge; wing coverts, scapulars and inner tertials, with large oval spots of blue-black on the outer webs, mostly concealed except on the latter; primaries blackish, with a border of pale-bluish, tinged internally with red; middle tail feathers brown; the rest pale-blue on the outer web, white internally, each with a patch of reddish-brown at the base of the inner web, followed by another of black, sides and back of neck, richly glossed with metallic golden-violet; tibia bluish-violet; bill black; feet yellow.

Length, 17; wing, 8.50; tail, 8.40.

Habitat, Eastern North America.

NOTE—The above was written many years ago since which it has been further verified as correct in the older sections of agricultural improvements, but restricted portions of several northern countries have been somewhat annoyed by considerable flocks both in spring and autumn in occasional years. I have neither seen nor learned of any characteristic roosts.

ZENAIDURA MACROURA (L.). (316.)

MOURNING DOVE.

For its species, the Mourning Dove may be said to be fairly comon throughout the brush-lands, and subcommon over the dry prairies.

Its presence here from the 15th to the 20 of April, is soon recognized by its sad cooing notes, heard from the back pasture, or along the wayside, through brushy sections in which are small patches of grass. They do not usually arrive here in large parties, but often much as they remain through the summer, in pairs.

Oak acorns, berries of nearly all kinds, seeds and grains constitute their food, of which they find an abundance, and in the enjoyment of which they are essentially undisturbed by the gunners.

Once here, if not mated when they come, they are so soon seen in pairs that it would be difficult to say they were not so when they came. A little after the first of May, perhaps not far from the 10th, they devote themselves to nest-building. Generally on a high bush, or low tree, sometimes on a stump, a log, or even directly on the ground, they construct a platform of small sticks or twigs, on which they place some rootlets, or stems of hay, on which may occasionally be found a few lichens, or leaves.

Like the nest of the other, or Wild Pigeon, it is a rather frail affair, and only hollowed enough to barely retain the two beautiful white eggs which are to be entrusted to it. The general habits of the species are so well known that it would be a work of supererogation to attempt a detailed description of them.

They linger as long in the autumn as they can obtain their food, which in some years is into November, but as a rule they are mostly gone by the 25th of October.

I have neither visited any parts of the state, nor corresponded with persons residing in different sections, where this species has not been found fairly common.

SPECIFIC CHARACTERS.

Tail feathers fourteen; above, bluish, overlaid with light brownish-olive, leaving the pure blue only on the top of the head, the exterior of the wings, and the upper surface of the tail, which is even slightly tinged with this color; entire head except the vertex, sides of neck, and the underparts generally, light brownish-red, strongly tinged with purple on the breast, becoming lighter behind, and passing into brownish-yellow on the anal region, tibia, and under tail coverts; sides of the neck with a patch of metallic purplish-red; sides of body and inside of wings, clear light blue; wing coverts and scapulars spotted with black, mostly concealed, and an oblong patch of the same below the ear; tail feathers seen from below, blackish, the outer web of the outermost white; the others tipped with the same, the color becoming more and more bluish to the innermost, which is brown; seen from above, there is the same gradation from white to light blue in the tips; the rest of the feather, however, is blue, with a bar of black anterior to the light tip which runs a little forward along the margin and shaft of the feather; bill black; feet yellow.

Length, 13; wing, 5.75; tail, 6.70.

Habitat, North America.

Order RAPTORES.

Family CATHARTIDÆ.

CATHARTES AURA (L.). (325.)

TURKEY VULTURE.

Amongst our earliest migrants, reaching the lower sections of the State immediately after the lifting of the ice-embargo, the Vultures are never seen in sufficient numbers to record them more than fairly common in some partially restricted portions of the country. After a few years of observation, I learned to look for their appearance about the 25th of March, but have frequently been compelled to wait until the first day of April. The first seen are more commonly a single pair, attention having been drawn to them by their flying in large circles while gradually making progress northwardly along the general course of some considerable stream. A few days later, a larger number is occasionally noticed, perhaps a flock of half a dozen; rarely more, working their way to higher latitudes. Formerly an average share of them remained along the St. Croix, St. Peter, and Mississippi rivers to breed, but with the general progress of improvements, and the employment of steam whistles on the steam boats and the mills, and on the railways, they have, in common with many other formerly rather common species of the larger birds, become locally much rarer. The earlier nests are built, if so meagre an attempt may be called building, about the middle of April, (in 1864, April 10th), but later ones are occasionally found. Mr. Lewis reports them as late as the 5th of May on Lake Traverse, and the 15th of the last month in Becker county, which is considerably further north. As intimated, the nests are the merest apologies when attempted at all, but in the few instances of my own observation, they were only the naked ledge overhanging the water, on which were a few

sticks, and some coarse stalks of weeds, or reeds. In each instance seen or yet heard from, only two eggs were found. Their color was in general a dirty, yellowish white, with different shades of brown spattered, or splotched somewhat, nearly all over, but more so about the larger end. Their food does not differ locally from that reported of them everywhere. Mr. Washburn "found it very common for the species, throughout the Red river valley." He made some consecutive observations of their habits at Ada. Dr. Hvoslef thinks that they come over our southern boundaries sometimes as early as Feb. 1st. but if they do, I presume they go back again promptly as a general thing. Next to this date he notes them in this journal on Feb. 23d, and 28th, each, 1888, but not again until March 27th of that year. No one familiar with their form in flight need be mistaken in their identity. In dignity of motion on the wing, they have few peers and no superiors. And the sustained ease of their prolonged flight is equally wonderful. Weariness is never once suggested. The separation and upward inflection of the extremities of the primaries when floating around their wide circles on the wing, carries an idea of tension which soon dissipates upon prolonged observation. They remain in their favorite districts until driven away by the frost which cuts off their supply of food.

SPECIFIC CHARACTERS.

Entire plumage brownish-black, darkest on the back and tail above with a purplish lustre, many feathers having a pale border; bill yellowish; head and neck bright red; plumage commencing on the neck with a circular ruff of projecting feathers; head and upper part of neck naked, or with a few scattering hair-like feathers, and with the skin wrinkled; nostrils large, oval, communicating with each other; tail rather long and rounded.

Length, 30; wing, 23; tail, 12.

Habitat, temperate North America.

Family FALCONIDÆ.

ELANOIDES FORFICATUS (L.). (327.)

SWALLOW-TAILED KITE.

For some time after I began to notice the birds here I regarded the Swallow-tailed Kite as a veritable *rari avis*, and finding where one pair built their nest on the west side of Lake Minnetonka, I made a careful note of everything pertaining to their habits. Subsequently I found that the species was far from being rare, indeed was comparatively common. My mistake had been in looking for them on the prairies instead of in the dense forests. Not one of all the species had been found on any considerable prairie. In looking for the nest, authorities directed me to the immediate vicinity of water. Margins of lakes and running streams in or bordering large bodies of tall timber were searched to the distance of a hundred and fifty yards back from the water, but no nests were to be found. In my extreme desire to gather knowledge of the local habits of birds and having an opportunity to secure a professional oölogist, I employed him and sent him to the eastern side of the lake mentioned, where, amongst a large number of species I wished to learn more about, I was confident this one nested, for during the last days of May and in early June I had year after year seen the male. He spent some ten days there and brought me many items of deep interest, but of my Swallow-tailed Kite, nothing. It so happened that he had fallen in with a friend of mine who was as profoundly interested in birds as any of us, to whom he showed a clutch of six eggs just obtained from a nest of these birds far back in the dense forest of maple, oak, elm and basswood, on a tree at an elevation of about sixty feet, all of which my friend very innocently rehearsed to me a few days later. I had never seen the egg at that time and regretted above words that I could not have "received that which was my own", but determined to find the nest if possible, and did so. Everything about its location seemed to preclude the presumption that they would select the immediate vicinity of water. With the key to the situation now in my hands, I never have since thrown away precious time looking for their nests anywhere but in the deep forests away from all running water. They

reach the State in pairs, often in the last days of March but not usually later than the fifth of April, but do not build until about the fifth or the tenth of May.

The nest is like most hawks' nests, rather bulky and consists of sticks, twigs, grass and a few leaves, and is placed in a fork of the tree about fifty to sixty feet from the ground. The full complement is six cream-white eggs, considerably spotted with iron-rust and speckled with dark brown.

After the young are grown they are met with in families in their hunting excursion, when they extend them into small prairies, openings in immediate proximity to forests, being their natural territory, into which they glide instantly in the presence of supposed danger. Openings in the timber afford them their chosen food, insects of the larger varieties and reptiles of the smaller species, from which they affect those so large as to be called small prairies, that are however more or less embraced by bodies of timber. Late in summer they almost subsist upon grasshoppers alone, so abundant are they habitually at that season almost everywhere in the State. About the first of September they leave us for warmer latitudes. Rarely some remain a little later, if severe frosts are delayed.

Their flight is simply a marvel of grace, ease and velocity that must be seen to be fully appreciated. When a "hopper," lizzard, or a diminutive snake is discovered by one of them, it drops upon it more like a snowflake than a raptorial bird. Feet and bill seem to seize the victim simultaneously, but it is instantly relinquished by the foot, if an insect, and by the bill if a reptile. Mr. Washburn, who found the species common at Mille Lacs and otherwheres that he went, gives an account of one of these birds, after being annoyed by a blackbird (possibly by a purple martin), quick as a flash turning upon its back, seizing its pestiferous assailant and bearing him remorselessly away for an unexpected luncheon. It is not accounted a very brave hawk, but it is a mistake that they will not fight if at bay with a broken wing. The extremely pointed talons, although not as powerful as are those of many others of the hawks, are capable of inflicting severe wounds, when sustained by a very cruel beak. They are not inclined to fight unless driven to it, but their discretion is seldom wanting when danger comes, out of which those long, pointed wings bear them with the speed of an arrow.

SPECIFIC CHARACTERS.

Wings and tail long, the latter deeply forked. Head and neck, under wing coverts, secondary quills at their bases, and entire under parts white; back, wings and tail black, with a metallic lustre; purple on the wing coverts and back; green and blue on the other parts; tarsi and toes greenish-blue; bill horn color. As with most hawks, the male is the smaller.

Length, (of female), 23 to 25; wing, 16 to 17.50; tail, 14.

Habitat, Southern United States and north to Minnesota.

CIRCUS HUDSONIUS (L.). (331).

MARSH HAWK.

This is undeniably the most abundant of the hawks which visit the State, arriving often before the ice has entirely disappeared from the lakes. About the 20th of March the avant couriers of the species may be seen solitarily reconnoitering the marshes, but an unfavorable change in the meteorological conditions may send them away for a few days, to return next time in greater numbers. Late in April incubation is entered upon. Their favorite nesting places are in sedgy, marshy meadows, that have bunches, or tussocks of shrub-willows, in the center of which they build a somewhat bulky nest of grass, in which they lay four to five dingy bluish-white eggs. When the young are sufficiently advanced, they make short pedestrian excursions in the immediate vicinity of the nest, before the wings are sufficiently developed for them to take to flight, under which circumstances the solicitude of the parents is manifestly very great. To one acquainted with the habits of the species it is not ordinarily difficult to find the nest after the young are partially grown. Their principal food consists of frogs, and snakes are equally acceptable under all circumstances. They catch occasionally, a field mouse, moles and ground squirrels.

Their distribution is universal over the portions of the State where the conditions are favorable to supply them with food. Such a region is characteristically a country of lakes, a considerable number of which have subsided, leaving both extensive and frequently limited areas in the most favorable condition to make it the Marsh Hawk's paradise in the breeding season.

And they yield their summer home only when the approach of relentless winter compels them to do so, which, with the hardier birds is not till in the ides of November. Occasionally

an individual refuses to leave the southern borders of the State, and remains all winter, incredible as it may seem. I have records of its presence there during each month of the winter.

Noticing frequent reports of the Marsh Hawk's seizing small birds, I have taken pains to ascertain their local habit in this respect, but I have yet to record the first instance. I have met with individuals in November, long after every trace of either insect or reptilian life had disappeared, when presumptively, if ever, the urgencies of hunger should have revealed this reserved proclivity, in the presence of several species of sparrows, without preceiving the slightest disposition to interfere with them.

Dr. Hvoslef records the presence of the Marsh Hawk near Lanesboro on the 13th of January, 1886.

Mr. Lewis found them everywhere from Bigstone to the northern boundaries of the State, and Mr Washburn says in his Red river valley notes, "Extremely common. Found everywhere in the vicinity of open country. The most abundant representative of the family, pairs or single birds being constantly seen hovering over the prairie and over the fields of grain. The immense numbers of frogs which throng the meadows and fields this season must afford them bountiful nourishment."

SPECIFIC CHARACTERS.

Form long and slender; tarsi long; ruff quite distinct on neck in front; entire upper parts, head and breast pale-bluish cinereous; back of head mixed with dark fulvous; upper tail coverts white; under parts white, with small cordate, or has-tate spots of light ferruginous; quills brownish-black, with their outer edges tinged with ashy, and a large portion of the inner webs white; tail light cinereous, nearly white on inner webs of feathers, and with obscure transverse bands of brown; under surface silky-white; under wing coverts-white. *Young*—Entire upper parts dark umber-brown; upper tail coverts white; under parts rufous, with longitudinal stripes of brown on breast and sides; tail reddish-brown, with about three wide bands of dark fulvous, paler on the inner webs; tarsi and toes yellow.

Length (of female), 19 to 21; wing, 15.50; tail, 10.

Habitat, North America.

NOTE—At certain times of the day, notably mid-forenoon and towards evening, I have repeatedly seen the young hawks while yet unable to fly, scattered in different directions from one to three yards from the nest searching for bits of food either

scattered accidentally by the parent in tearing it for them from large snakes and frogs, or consisting of insects discovered by the young birds themselves. The observation has proved a valuable aid in searching for late nests.

ACCIPITER VELOX (WILSON). (332.)

SHARP-SHINNED HAWK.

This hawk is a familiar one in its migrations, being quite common, and some of them remain during the winter. As soon as the season for nidification arrives, to the casual observer they seem to have left the country, but they retire to the unfrequented sections, notably the borders of forests and thickets, which no one less a "crank" than an industrious ornithologist, would think of penetrating. I have secured a few nests, that were all built in trees about fifteen to twenty feet from the ground, and consisting of sticks and grass, lined with moss and a few feathers. Some of them contained but two eggs, but as one had five, I may reasonably suppose the former clutch was incomplete. They build about the last week in April, having arrived in the country about the first. The eggs are dingy-whitish, irregularly splashed with different degrees of brown. They begin to diminish in numbers about the middle of September, but, strange as the assertion may seem, it has been impossible to say when they have all gone, for not a month of the severest winters ever known in this high latitude has failed to record its presence. For many years during my earlier residence here, the practice of my profession took me across the bleak prairies very frequently in winter, on which occasions I constantly saw flocks of Snow Buntings. At different times their actions indicated the presence of a hawk, but the idea of the possibility was not entertained until on one occasion, when I was returning from one of those trips, with the mercury at 43 below, as I afterwards learned, and with a wind blowing furiously from but a few degrees west of north, I saw one of this species coming before it with inconceivable velocity, and oblivious of my presence, as I was in a sleigh, it swept close to the ground over the brow of a knoll close to me, and seized a bunting out of a flock sitting so close that I had not seen it, though directly in front of me. My astonishment was boundless, but I had now the key to the actions of those flocks I had so long observed. I was thoroughly familiar with the Sharp shinned Hawk, having many times watched his peerless accomplishments in hunting and seizing his prey, oftentimes

considerably heavier than himself, and the tragedy transpired too near me to leave a doubt as to the identity of the assassin. His prowess has no equal amongst Raptorial birds, attacking without an instant's hesitation, birds and animals far exceeding its own weight.* I have seen them do the things whereof I make these statements. Wilson's account of its encounter with a squirrel, and the outcome, was by no means a solitary instance, for it has been witnessed on occasions since he described it. I shot one within half a mile of the beautiful Falls of Minnehaha on the 14th of September, 1869, that had the denuded head of a large squirrel hanging firmly to one side of its neck by the incisors, one eye destroyed, and a large hole torn out of the hawk's maw, of sufficient size to reveal its contents of small birds partially digested, protruding. It must have been an encounter of some weeks, or months, previous, for the squirrel's skull had become perfectly bleached and polished, while the opening into the maw bore no signs of recent inflammation. Mr. Washburn found it common in the Red River valley, and along Thief river in August, while others report it everywhere in migration.

SPECIFIC CHARACTERS.

Small tail rather long; legs and toes slender; entire upper parts brownish-black, tinged with ashy; occiput mixed with white; throat and under tail coverts white, the former with lines of black on the shafts of the feathers; other under parts fine light rufous, deepest on the tibia, with transverse bands of white; shafts of feathers with lines of dark brown; tail ashy-brown tipped with white, and with about four bands of brownish-black; quills brownish-black, with bands of a darker shade, and of white on their inner webs; secondaries and tertiaries with large, partially concealed spots of white.

Length (of female), 12 to 14; wing, 7.50 to 8; tail, 6.50 to 7.

Habitat, North America.

ACCIPITER COOPERI (BONAPARTE.) (333.)

COOPER'S HAWK.

This is a very common species here, and is fairly distributed over the openly timbered sections of the State. I have uniformly observed them early in April, and if any instance has occurred of an arrival in March I have not been apprised of it.

* I once saw one of these hawks dash into a flock of wild pigeons, and strike a very large, old bird, fifty per cent heavier than itself. It was done when the assailant was moving with its highest velocity, and with such deadly certainty that the stroke instantly killed the pigeon, for the head and wings all dropped, and I as speedily dropped the hawk, pigeon and all, by a well-directed shot. Incredible though it seems to me now, the keen, long, curved talons had pierced to its vitals.

Others claim to have seen several of them associated upon their first reaching us, but I have never seen more than a pair together, and in no half-day devoted to collections have I ever met with more than two pairs. They preferably frequent districts where there is considerable open, scattering timber, containing brush and thickets. These afford it Ruffed Grouse, quails, squirrels and rabbits, of each and all of which they are exceptionally fond. Although reputedly a terror to domestic fowls in other sections of the country, I have never known them to disturb them here. We undoubtedly have the best of domestic cocks, and Minnesota enjoys a first-class reputation for "crowing" (Crow Wing?) which may, or may not account for the local exemption of the barnyards. Not far from the 25th of April, they begin to build their nests in the forks of large trees, elevated as much as the firmness of the branching limbs will permit.* The nest consists of sticks outwardly, lined variously with strips of bark, leaves, moss, twigs and hay, and is quite bulky horizontally, with slight depressions for the four dull white eggs. It has long since been said that this species does not quit the nest after the first egg has been deposited, and I am now satisfied that this is true frequently enough to constitute a rule. It becomes possible from the fact that both sexes equally share the incubatory duties more faithfully than any other known species of the hawks. A young bird is occasionally found in the nest ten days before the last egg is hatched. Along the principal carriage way between Minneapolis and St. Paul, and not very far from it, a pair of these hawks have built since 1874. It is not a little remarkable that they should have escaped the shotguns of the numerous boy-hunters of the two cities so long, to say nothing of the hazards of hunting their quarry after the whole family have taken the field. I have never seen them moving in circles after the manner of many others of the larger species, but directly forward, skimming close to the tops of the taller trees until diverted by the discovery of prey, when it dashes downward with tremendous velocity. Should it prove to be a rabbit, and once under way for its hole, the chase becomes amusing to see how the bird will strike when the rabbit passes an opening, which indeed must be a narrow one if it escapes, as they not infrequently do. If the game is a Ruffed Grouse,

*While characteristic, this position of the nest is not without frequent exceptions, as I have known them to occupy the forks of a large horizontal limb fifteen or more feet from the trunk, and underneath the larger portions of the top.

its life or death depends upon the distances between the trees through which it is escaping, for while the Hawk may fly the swifter, the Grouse employs the trees for coverts successively most ingeniously, until in a moment of seclusion it will drop into the brush and dry leaves so suddenly, and remain so motionless as to elude the eye of its adversary completely.

Many of my correspondents in various sections of the State have reported the presence of this species.

SPECIFIC CHARACTERS.

Head above a brownish-black, mixed with white on the occiput, other parts dark ashy-brown, with the shafts of the feathers brownish-black; an obscure rufous collar on the neck behind; throat and under tail coverts white, the former with lines of dark brown, other under parts transversely barred with light rufous and white; quills ashy-brown, with darker bands and white irregular markings on their inner webs; tail dark cinereous, tipped with white, and with four wide bands of brownish-black.

Length (female), 18 to 20; wing, 10 to 11; tail, 8.50.

Habitat, North America.

ACCIPITER ATRICAPILLUS (WILSON). (334.)

AMERICAN GOSHAWK.

I have no positive evidence that this hawk breeds in Minnesota, yet I believe it does to some extent. It is a winter visitant in all the middle and southern counties, that arrives here about the first of January. In the milder winters it often fails to come at all, and it returns northward very early in the spring. The first individual that came into my hands here, was a mature male that was taken by a farmer in his barn in February in the act of capturing a hen which it had followed in. The hawk was alive, uninjured and in good winter plumage, but he would not eat in captivity, and Tannerized himself into a martyr to science.

In all, I have obtained half a dozen in various plumages, mostly that of the young of the previous year. They leave our latitude mostly in March. It is a beautiful species, not easily forgotten after having been in the hands once, on account of the delicacy of the markings of the feathers. The flight, once observed, is so characteristic that the bird may be quite reliably identified by it alone. I have never seen them moving in circles, but in very direct lines; often high in the air on cold days, but when hunting for Ruffed Grouse, Prairie Chickens, and rabbits, all of which it will seize with the bearing of a monarch of the wing, it flies comparatively low, but none the

less direct until right upon its victim. If it misses the first dash, the chase is by no means relinquished, but will be continued anywhere the pursued goes. I have known an instance in which it followed a domestic fowl through an open window of a farmhouse and under a bed. The severity of our winters keeps the poultry housed too closely for them to do much damage until the very last part of their stay in March.

Mr. Lewis observed them in the pineries so late in May as to make it almost certain that they breed in the vicinity of Mille Laes, and further north in the State. Dr. Hvoslef reported one in Fillmore county on the 19th of March, which had doubtless begun its migration.

Of late years I rarely meet this hawk among the collections of the taxidermists, or fresh specimens on the shelves of the societies; a fact of common note with bird collectors. The species evidently retires northward very early in the spring, and before the temperature of the weather has allowed the enthusiastic observer to reach fever point in his ambitions. When I have found my way into the timbered sections early after the winter has broken, I have found them sailing swiftly along the brushy edges of the woods, or the borders of the woodland streams, scarcely swerving in their course to seize their prey, which was speedily borne into the trackless forest to be consumed in undisturbed repose. They are a terror to the early flocks of Wild Pigeons when they come, making sure supplies of them under any circumstances conceivable.

SPECIFIC CHARACTERS.

Head above, neck behind and stripe from behind the eye black, generally more or less tinged with ashy; other under parts dark ashy-bluish, or slate color, with the shafts of the feathers black and frequently with the feathers narrowly edged with black, presenting a squamate or scale-like appearance; a conspicuous stripe over the eye and an obscure and partially concealed occipital and nuchal band, white; entire under parts mottled with white and light ashy-brown, every feather with a longitudinal line of dark brown on the shaft, and with numerous irregular and imperfect transverse lines or narrow stripes of light ashy-brown, more distinct and regular on the abdomen and tibiae; quills brown with bands of a deeper shade of the same color and of ashy-white on their inner webs; tail same color as other under parts; under surface very pale, nearly white, having about four obscure bands of a deeper shade of ashy-brown, narrowly tipped with white; under tail coverts white.

Length (of female), 22 to 24; wing, 14; tail 10.50 to 11.

Habitat, North America.

BUTEO BOREALIS (GMELIN). (337.)**RED-TAILED HAWK.**

This is a fairly common species that comes the nearest to being permanent of any of the commoner kinds of Hawks. Winter has only commenced to relax its frigid grasp upon the land when, flying at its highest altitudes, there may occasionally be seen one of these bold birds going still further north. When the drifts are all there is left of the snow and hope of returning spring begins to prune her wings, the number of returning Red-tails multiply, and anon, instead of all of them passing over and onward, they pause in the forests and occasionally within easy access of the farmer's barnyard. The last days of February some years and not unfrequently the first of March, have revealed instances of their return, but before the twentieth I have seen considerable numbers of them. I am satisfied that many individuals of them do not get far south of the lower limits of the State to spend the rigorous portion of the winter, for they are almost annually observed in the border counties during each winter month and an exceptionally early opening never fails to find them here promptly.

The nests are built early in April and along through the entire spring—sometimes in March—in the forks of large trees in the forests and are imposing masses of coarse sticks overlaid with smaller ones and twigs, over which again are spread leaves and mosses to considerable depth. It is so massive and shows so little attempt at concealment, that having been discovered, we see that nothing but its elevation has kept us from seeing it at once when in the neighborhood of it. They lay from three to four eggs of a dirty, yellowish-white, with splotches of two shades of brown.

From 1867 until about 1876 I met with seven nests in the big woods within two miles of the westerly shore of Lake Minnetonka. Their elevation was so great that but for some daring lads living in the section, who climbed some of the trees containing them, for me, I might have been less confident of the identity of some of them in the absence of the nest builders. However, in several instances the male was seen frequently. One clutch of the eggs was all that I had the heart to let the plucky little climbers attempt to obtain, besides their woodsman fathers knew some of the objections to invading those nests after the young birds were out of their shells. While an occasional nest may be found in that section still they are becoming less common.

The flight of the Red-tailed Hawk is truly a marvel of dignity and grace equalled by few and excelled by no other species of bird. Who would have every sentiment of poetry in his nature awakened and "see God in his works," let him watch its flight lovingly and reverently one hour.

SPECIFIC CHARACTERS.

Tail bright rufous, narrowly tipped with white, and having a subterminal band of black; entire upper parts a dark amber brown, lighter and with fulvous edgings on the head and neck; upper tail coverts yellowish-white, with rufous and brown spots and bands; throat white, with narrow longitudinal stripes of brown; other under parts pale yellowish-white, with longitudinal lines and spots of reddish-brown, tinged with rufous most numerous on the breast, and forming an irregular band across the abdomen; under tail coverts and tibiae generally clear yellowish-white, unspotted, but the latter frequently spotted and transversely barred with rufous; under surface of tail silvery-white.

Length (of female), 28; wing, 15 to 16; tail, 8.50.

Habitat, eastern North America.

BUTEO BOREALIS KRIDERII HOOPES. (337a.)

KRIDER'S HAWK.

My attention had for some time been called to a white hawk by observing sportsmen, when one day Mr. G. W. Tinsley, a leading one of them of Minneapolis, brought me one that he had taken. Shortly another one was brought to me, which, after careful examination I decided was something new. About the same time I learned that Mr. Krider, of Philadelphia, while spending the summer in this section, had obtained several of these Hawks, and submitted them to Mr. Hoopes, of that city. Hoopes named the variety as above. During some years they are met with quite frequently, while in others I hear of none. The plumage varies exceedingly in the individuals that I have seen, but the presence of more or less white is its distinguishing characteristic for varietal recognition.

Having seen no nests, or seen no one who has, I can add no further facts in the history of this variety of the Red-tailed Hawk, except that they are less a prairie species than has been represented by some writers. On the contrary, I find them predisposed to neither prairies nor dense forests, but sparsely timbered openings.

Note. Since writing the above, I have ascertained that this variety of the Red-tails has been observed in the vicinity of Lake Superior, at Red lake, Mille Lacs and Lake Traverse.

It is undeniably difficult for me to regard Krider's Hawk as a variety of the common Red-tailed Hawk.

I was much disappointed that Mr. Washburn did not meet with it either in Crow Wing or Otter Tail counties, as his two explorations extended over sufficient time for a careful observation of its habits had he found them in sufficient numbers.

All the specimens that I have had in my hands up to the present time, have been males, where I have had an opportunity to be certain as to the sex, and have averaged less in their measure than *B. borealis*.

The difference in the measure of white in the colors constitutes the recognized distinguishing character of this variety of the Red-tailed Hawks.

BUTEO BOREALIS CALURUS (CASSIN). (337b.)

WESTERN RED-TAIL.

A single specimen of this variety of the Red-tail is all I have to justify its record within the boundaries of my investigations. That it has been killed repeatedly along the Red river by sportsmen I have no doubt from descriptions from them, but while engaged in the exciting events of "good wing shooting" amongst the ducks, all thoughts of the solicitations of importunate science are forgotten, to be only recalled by meeting some one of her humble servants.

Between the facts and the fancies of the narrator, one of the former here and another there, will build up considerable circumstantial proof in such a matter. While "one swallow doesn't make it summer," it makes one think about it. The records of the presence of the Western Red-tail in Illinois are fully accepted.

The single specimen I refer to above was in unmistakable plumage and from the vicinity of the Red river.

I am familiar with the species in its recognized habits where its habits do not differ from the Red-tails of the eastern states. My experience with one of them that I had winged in Santa Clara county, California, in the spring of 1872, gave me a lasting respect for his indomitable courage which has been freshly recalled by reading the Rev. J. H. Langille's account of carrying one of the Eastern Red-tails home on the muzzle of his gun which it had seized after being disabled for flight by winging. I can conceive of nothing but the bird's recognition of his profession that spared him from a like proof of his valor.

My bird as readily accepted the proffered muzzle of the gun, but in less time than it takes to wink he had ascended, "hand over hand" and dealt nothing less than a baker's dozen of blows

from the talons of his spare foot squarely on the first hand he reached, every time piercing the flesh to the bone. Indeed one barb of his cruel talons had reached through the tendons of the hand and the skin of its palmer surface. It has required several similar experiences to enable me to learn the value of securing a specimen of a "living hawk." (A hint to the wise).

SPECIFIC CHARACTERS.

Only distinguishable from *B. borealis* by its larger size, greater extent of the dark color of the throat, and the prevalence of the rufous on the abdomen and tibiæ.

Length (female), 23 to 25; wing, 16.50 to 17; tail, 9 to 10.
Habitat, western North America.

BUTEO LINEATUS (GMELIN). (339.)

RED-SHOULDERED HAWK.

While always met with in migration, its local habits confine it much more exclusively to the timber, and the unfrequented forests especially, which leads superficial observers to believe it a more northern species than the Red-tail. This is a mistake for they are nearly as numerous as that species, and almost indistinguishable except by the last circumstance, if not in hand, or very well under observation. I have had but one collector to assist me whose observations of the nest were of sufficient value to be quoted, but his have corroborated my previous impressions that this species builds a little more artistic and notably a deeper nest. This hawk has now been seen as frequently as the Red-tail during every winter month. They arrive in their migratory movements about as early as the others in spring, and remain as late in autumn. As already intimated, their habits associate them with the forest mostly, where they destroy Ruffed-grouse, rabbits and squirrels for their food, only very rarely disturbing domestic poultry.

Whole sections of the State where prairies, or only quite small, scattering trees and brushlands predominate, are almost unvisited by this hawk. A trait of the species which has been noticed before, has attracted my attention in two instances of my own opportunities for observation, namely; the equal share borne by the male in all the duties of incubation, and rearing the young. He shares the collecting, and arranging of all materials in the structure of the nest, and instantly occupies it in the absence of the female. A succession of observations have gone far towards establishing the conclusion

that the same bird occupies the nest continuously for twenty-four hours, and after the young are developed enough to make short flights, one parent at a time takes the special care of the brood while the other pursues its chase.

At these times the smaller birds contribute no little to the daily supply. Snipe, sandpipers, plover, blackbirds, larks, sandwiched with frogs, snakes, etc., to crayfish and beetles. They must be driven by extreme hunger if ever they attack domestic fowls. The observing farmers soon learn to distinguish them from the Red-tails by their consideration for their poultry, as well as their stronger predilection for the woods.

SPECIFIC CHARACTERS.

Wing coverts from the flexure to the body fine bright rufous; breast and other lower parts of body paler orange-rufous, many feathers with transverse bars and spots of white which predominate on the abdomen and under tail coverts; entire upper parts brown, on the head mixed with rufous, and with white spots on the wing coverts, shorter quills and rump; quills brownish-black with white spots on the outer webs, with bars of a lighter shade of brown, and white on their inner webs; tail brownish-black with about five transverse bands of white, and tipped with white.

Length (female), 21 to 23; wing, 14; tail, 8.

Habitat, eastern North America.

BUTEO SWAINSONI BONAPARTE. (342.)

SWAINSON'S HAWK.

Unlike either the Red-tailed or the Red-shouldered, this hawk is essentially a prairie bird. It is never met with in either of its migrations; or if so too infrequently to have attracted the attention of reliable observers who have noted it in the southern counties of the States, notwithstanding they extend their excursions occasionally into almost every open district I have visited.

I have never obtained it earlier than the first of May, but I have not visited the sections where it is ordinarily easiest found, so early as that, which leads me to suppose that it may arrive some earlier than that date. I confess that it is at best but a conjecture, but I am strongly inclined to believe that the larger portion of Swainson's Hawks come in from the west or southwest, as they are invariably found in the northwestern parts of the State before an occasional individual is seen in the latitude of Minneapolis and St. Paul. They choose trees in

the borders of the forest for constructing their nests in, if contiguous to open, dry prairie, but will employ scattering ones, or the ground along the course of streams running through sections favoring the supply of their food, which consists chiefly of small quadrupeds and grasshoppers.

The nest, like those of most of its genus, is constructed of coarse sticks, on which rather smaller ones are placed, mixed with twigs, over which are laid grass and some leaves. The eggs bear similar colors to those of the Red-tails.

They are the most abundant Hawk in northern Dakota, and scarcely less so in the sections of Minnesota immediately contiguous. They retire somewhat earlier than do the Red-shouldered and Red-tailed in autumn, the latest record I have being October 17th.

SPECIFIC CHARACTERS.

Bill wide at base, compressed towards the tip, lobed, cere large; wing long, third quill longest; tail moderate, rather wide, even at the tip; tarsus feathered in front nearly half its length, naked behind, the bare portion in front having about twelve transverse scales; toes rather short, the claws strong; entire upper parts dark brown, nearly black in the middle of many feathers, paler on the edges; quills brownish black, with wide transverse bands of cinereous on their inner webs, becoming paler and nearly pure white towards the base of the quill; tail brown tinged with ashy, and having about ten to twelve transverse bands of a darker shade of brown, the subterminal of which is widest; tip edged with white; throat white, with longitudinal lines of dark brown; *neck before and breast ashy-brown*, nearly the same color as the tail, some of the feathers edged with reddish; other under parts white, nearly pure on the under tail coverts, and with transverse irregular bars of rufous on the tibiæ and the flanks, and darker brownish-rufous on the abdomen; under wing coverts white, with a few spots of transverse stripes of brown; bill dark slate; tarsi, toes, and cere yellow.

Length (of female). 21.50; wing, 16; tail, 8.50.

Habitat, western North America.

BUTEO LATISSIMUS (WILSON). (343.)

BROAD-WINGED HAWK.

A little above the Falls of Minnehaha there is a limited forest of dense timber, consisting of nearly all of the ordinary varieties of deciduous trees. Through it run in several directions, obsolete wagon ways over which thrifty undergrowths of different kinds have formed arches high enough for a horse and carriage to pass under. Along side of one of these through

which I was solitarily driving, I discovered a hawk sitting on a limb of a sapling, about eight feet from the ground, and not more than thirty feet distant from me. With a charge of No. 12 shot, I secured him instantly without having drawn blood through the feathers. Dropping my bird into a large, stiff paper cornucopia with which I always provide myself, I was in the act of laying my capture into my basket, when I descried an immense Fish-hawk threading its devious way through the tops of the lofty trees of the forest, with a living pickerel trailing and writhing from one extended foot. Remaining motionless, and the hawk not seeing either me or my horse and carriage, it spread its immense wings upwards in the act of lighting on a large limb, sixty feet perpendicularly over me, when I pulled trigger on a No. 8 charge and brought directly to my feet both hawk and fish, the former of which was entirely lifeless, but the fish was as lively as if just brought in with a hook. I have mentioned these circumstances before in connection with the Fish Hawk, and now again because the first hawk was a Broad-wing, and the first I had ever had in my hands. Both birds were duly and truly mounted, and are in the museum of the Minnesota Academy of Natural Sciences, after the lapse of twenty years, in good order, to the credit of that faithful taxidermist, Mr. Wm. Howling of this city, (Minneapolis). The event and the whole beautiful scene in the solitude of that charming forest, on a bright May day of 1867, constitute the pinnacle of my delightful experiences in the field of ornithology.

The Broad-wing Hawks arrive about the first of April, and about the 20th begin to build their nests, some of which, however, are not occupied before the tenth of June. No other species manifest less uniformity in time of commencement. The average time is not far from the 5th of May I find.

The structure consists of medium-sized sticks externally, over which are imposed finer ones, grass, leaves and feathers, until it becomes as bulky as a Crow's nest, and is placed in the main forks of a tree in the borders of the forest, about thirty feet from the ground. They lay from two to five dirty white eggs, over which are scattered blotches of reddish-brown.

It is not an aggressive species ordinarily, but if wounded and at bay, or in the defence of its young, it has no superior, and few peers for courage and persistence. It is fairly common from the borders of Iowa to Lake Superior. Rare in the northwestern sections of the State.

I should have said that I find it breeding frequently near the city and about Lake Minnetonka and otherwheres in the Big Woods.

Nests and eggs are not infrequently brought to me which have been obtained but a short distance from the city. Mr. Washburn found the species rather common in Otter Tail county. That is a fairly representative county of a large section in which I have had but little opportunity for personal observation. The Broad-wing Hawk leaves us about the 20th of October.

SPECIFIC CHARACTERS.

Entire upper parts umber-brown, feathers on the occiput and back of the neck white at their bases; throat white with longitudinal lines of brown and with a patch of brown on each side running from the base of the lower mandible; breast with a wide band composed of large cordate and sagittate spots and transverse bands of reddish ferruginous tinged with ashy; other under parts white with numerous sagittate spots of reddish on the flanks, abdomen and tibiæ; quills brownish-black, widely bordered with white on their inner webs; tail dark brown, narrowly tipped with white and with one wide band of white and several narrower bands near the base.

Length (female), 17 to 18; wing, 11; tail, 6.50 to 7.

Habitat, eastern North America.

ARCHIBUTEO LAGOPUS SANCTI-JOHANNIS (GMELIN).

(347a.)

AMERICAN ROUGH-LEGGED HAWK.

This is not a very common hawk but is at the same time not extremely rare. In its northern migration particularly, it is occasionally seen about the edges of marshes and ditches where it seizes frogs, snakes and wounded ducks. The first one I ever saw was drawn into visible proximity to where I was skulking for a shot at ducks on the wing. It must have discovered one that had been previously wounded but which I did not see until afterwards. They are in migration during the last days of March and the first of April, none to my knowledge having been seen later than the first of May. They evidently go further to breed. An occasional individual has been shot late in the autumn or early winter and been mounted by the taxidermist. Mr. William Howling, of Minneapolis, has had several in his collection at different times, but generally in immature plumage. My knowledge of this species is mostly confined to my personal observations in the vicinity of where I reside. None of my assistants have reported more than a single identification.

The dark, cloudy days of early spring and late autumn are those in which to keep a good lookout for the Rough-legged Hawk. He then flies low and always slowly, especially during the day, and more commonly over swampy meadows in search of his inglorious prey of frogs, mice, lizzards, snakes and large insects, with an eye out for some unfortunate bird but half killed by the hunter. They frequently extend their search for food late into the twilight, which in our high latitude is late indeed, manifesting an owl-like nature which is further intimated by the full, soft plumage embracing the legs, feathered to the toes in front. A favorite place for them is located half a mile from my summer cottage at Lake Minnetonka, a spot I have habitually visited at both the seasons when this species is still here and which consists of a morass that was at no ancient period an arm or bay of the lake, when it sustained a somewhat higher surface than now and in which are denizened representatives of nearly all kinds of supplies for them. They come to the marsh so quietly that except the eye is kept on the field, they may have drifted slowly its whole length and be vanishing through an opening in the woods which leads to another swale or slough, when first discovered, but if a little patience is exercised, they will return to traverse the marsh again, when possibly a better opportunity is enjoyed for observing them. Perchance, indeed probably, he will alight on a muskrat house in the middle or on a dry limb overhanging the water, where he will remain almost motionless for an hour at a time if unmolested. When surprised suddenly they have a habit of screaming in a most unmusical fashion as they sail heavily away into the forest for safety. I hear from an amateur ornithologist residing at a little distance from Red Lake Falls, Mr. L. Bothman, that a nest of this species had been found near there, but with neither bird nor eggs to settle the identification. I do not feel justified in fully accepting the statement.

SPECIFIC CHARACTERS.

Head above yellowish-white, with longitudinal stripes of brown tinged with reddish, especially on the occiput; back, scapulars and shorter quills pale-cinereous, with partially concealed transverse bands of white and dark-brown, the latter frequently predominating and giving the color on the back; rump dark umber-brown; longer quills and wing coverts dark umber-brown; primaries edged externally with ashy, and with a large space on their inner webs at the base, white with a silky lustre; under parts white; throat with longitudinal

stripes of dark-brown; breast with large spots and concealed stripes of reddish-brown; abdomen with numerous transverse narrow bands of brownish-black, most conspicuous on the flanks, and tinged with ashy; tibiae and tarsi barred transversely with white and dark-brown, and tinged with reddish; under tail coverts white; upper tail coverts white at base and tipped with brownish black; tail white at base with a wide sub-terminal band of black, and about two other bands of black alternating with others of light cinereous; cere and toes yellow; iris hazel; under wing coverts white with spots of brownish-black, and on the longer coverts with a large space of ashy-brown.

Length (female), 21 to 23; wing, 16 to 17; tail, 9.

Habitat, North America.

ARCHIBUTEO FERRUGINEUS (LICHTENSTEIN). (348.)

FERRUGINOUS ROUGH-LEG.

I am very familiar with this hawk in his characteristic home, California, and was the more surprised to find that individuals of the species have several times straggled into Minnesota.

It is thoroughly a dry-prairie raptor, and lives upon small rodents, reptiles and insects. It is rather a common hawk in Dakota, especially in the western part where I found it perched on prairie-dog's hills, or skimming leisurely along the ground during the month of May of the present year (1887), but I had no opportunity to look into their nests. On the other coast they were very abundant, and voracious eaters, living upon ground squirrels chiefly.

SPECIFIC CHARACTERS.

Largest of the genus, with the bill wide at base; wings long; tarsi feathered in front to the toes; naked and scaled behind; tibiae and tarsi bright ferruginous, with transverse narrow stripes of black; entire upper parts dark-brown and light-rufous, the latter predominating on the rump and wing coverts; quills ashy-brown, with the greater part of their inner webs white; tail above reddish-white, mottled with ashy-brown; beneath pale yellowish-white; under parts white, with narrow longitudinal lines and lanceolate spots on the breast reddish-brown, and narrow irregular transverse lines of the same color, and of black on the abdomen; flanks and axillary feathers fine bright ferruginous.

Length (female), 23 to 25; wing, 17 to 17.50; tail, 9.

Habitat, western North America.

AQUILA CHRYSÆTOS (L.). (349.)**GOLDEN EAGLE.**

That this Eagle has ever reared its brood within our borders I cannot say, but it is a well known fact that it visits different parts of the State at intervals. The young of both sexes have been obtained from time to time, and mounted for parties here, and others to carry to the East.

I have seen no mature specimens amongst those which have come under my observation, yet from the descriptions of specific characters which I have consulted, I am compelled to think that some have been more advanced than the young of the year. It has been repeatedly affirmed by some of the older fur traders who were here before the Indians left, that instances of their breeding on high cliffs of rocks on the north shore of Lake Superior, were known, at the least, forty years ago. If this is true, there are no conceivable reasons why they should not do so still, for on the sea coast they have done so ever since the original settlement of the country. The general inaccessibility of their nesting places renders any special encroachment upon them impracticable. When speaking of this bird in his delightful work, Rev. J. Hibbert Langille says:

“Grand as our common or White-headed Eagle is conceded to be, he is but a commonplace and vulgar bird compared with the present species. Indeed, the Golden Eagle is the noblest bird of our continent. Disdaining carrion, except in extreme hunger, and all ordinary pilfering and predatory habits, he subsists, it would seem, on the noblest game, such as hares, grouse, young fawns, and wild turkeys. Nor does he condescend to chase his prey and capture it only after a hot pursuit, after the manner of hawks and falcons, but detecting it afar with his keen eye, swoops down upon it from some obscure height, and takes it by surprise. Then, bearing it away to an elevated point in a tree, or on a high rock, he plucks it clean, and eats at his leisure. The loftiest mountains are his home, and on the shelvings of their most rugged precipices he locates his eyrie.

“Occasionally he may make a detour into the settled parts of the country, soaring high, and in slow, wide and most majestic circles; or if he pass from one mountain height to some other in the distance, it is by the highest possible pathway in the sky. If he be in certain stages of plumage, with good eyes, and the light favorable, one may distinguish him as a great

rarity, by the dark band on his white tail. But generally if one would study him, he must go to the uninhabited and almost uninhabitable parts of the earth, far above the ordinary planes of animated nature, and there contemplate him in the sublimest solitude. As he climbs to the very clouds, and penetrates behind the veil of the storm, even the mountains are low down in respect to him, and he seems to know and care but little about the world."

SPECIFIC CHARACTERS.

Large; tarsi densely feathered to toes; head and neck behind, light brownish-fulvous, varying in shade in different specimens, frequently light orange-fulvous, generally darker; tail at base white, which color frequently occupies the greater part of the tail; other terminal portion glossy black; all other parts rich purplish-brown, frequently very dark, and nearly clear black on the under parts of the body; primaries shining black; secondaries purplish-brown; tibiæ and tarsi brownish-fulvous, generally mixed with dark-ashy; cere and toes yellow.

Length (female), 33 to 40; wing, 25; tail, 15.

Habitat, North America.

HALIÆTUS LEUCOCEPHALUS (L.). (352.)

BALD EAGLE.

This least understood, most honored, and most abused of the entire class to which it belongs, has honored or dishonored the North Star State, by making it emphatically the place of his abode. No forest with a right to the name, but claims the enviable or unenviable distinction of harboring the whole family of this species. Its harsh screams are familiar to the woodman during the nidifying season, and many a cabin in the solitudes of the deep, dark forests, has its young eagle chained to its gable, or the convenient out-house. Its habit of breeding year after year on the same filthy old nest, even after having been repeatedly robbed of its eggs or young, gives unusual opportunities for noting its habits.

Some of these birds seem to go a little further south, as is indicated by their return in spring, but not all for they are often observed through the entire winter. About the last week in Feb. some of them commence preparations for nesting by repairing the old structure, or building another entirely new. Fragments of dry limbs a yard in length, and from one to two inches in thickness are laid into the forks of a large tree, at least forty feet from the ground, and more frequently sixty feet. These are criss-crossed in a rude, but really very ingenious manner, and secured in their position by

the abundant use of smaller ones interlocked, and further secured by coarse fresh twigs, over which almost any available material like hay, moss, leaves, and what-not, are deposited, and more and more from year to year as its reoccupation is continued. They lay two dirty yellowish-white eggs, and when the young are hatched, no sprigs in the bird kingdom are more royally cared for until fairly able to take care of themselves. In selecting their location for their nests in the ordinary forest they almost uniformly choose a tree on a kind of obsolete island, so surrounded with morass that approach to it on the ground is difficult or impossible, but where large islands covered with large trees are found in considerable lakes, they will prefer these. I have never found more than one brood raised in one nest in a season. Their feeding habits are too well known to call for any special mention.

Almost from the earliest observations of white men, and from long before according to Indian tradition, they have reared their young on the islands in Lake Minnetonka until very recently. Fifteen years of personal observation in the forest west of that lake have afforded me opportunity to locate several nests, from which I have had the young eaglets brought to me to "raise for pets" again and again. A well earned and enduring respect for raptorial birds in general has enabled me to decline all such proffers, but others have accepted them, so that for many years after I became a citizen of Minneapolis it was no unusual thing to see individuals of the species chained, like a monkey, to a box or outhouse in different places in the city.

Mille Lacs, Otter Tail, Big lake, and many others, have had the credit of being alike favorite breeding places of the Bald-headed Eagle.

SPECIFIC CHARACTERS.

Large; bill large, strong, straight at base, rather abruptly hooked; wings long; tarsi short; head, tail and upper coverts white; entire other plumage brownish-black, generally with the edges of the feathers paler; bill, feet and iris yellow.

Length (female), 35 to 40; wing, 23 to 25; tail 14 to 15.

Habitat, temperate North America.

FALCO RUSTICOLUS GYRFALCO (L.). (354a.)

GYRFALCON.

In the winter of 1874, I secured a straggler from its habitat in its best winter plumage, and after satisfying myself of its identity, notified the ornithologist of the Smithsonian of my find, and at his request loaned him my specimen, which however, I had had mounted for the museum of the Minnesota Accademy of Natural Sciences, of which I had the honor to be president at the time. My diagnosis was endorsed, and its variety given as *Labralora*, with the promise of having the proof-sheet sent me of its notice in the large work on the birds of North America, then nearly ready to publish. I received the proof in due time, giving it as above, with the additional statement that it was the first instance of its collection within the United States, but I was not a little surprised on reading the work afterwards, to find the proof-sheet wanting in the text, and the species referred to as occasionally being found within the United States. A notice of the reasons for the change in the advanced sheets would have been the least that the common amenities of life would have called for. I mention the circumstance that others may not be foolish enough to allow their beautifully mounted birds to be dismantled, gutted, and have their plumage clawed over for several months, after which re-stuffed, and sent back looking as if it was the remains of an individual that had been through a picking-machine and left in a dirty garret for preservation. If the pinch lay in not having the first and only specimen of "Falco Gyrfalco, variety Labradora," as given in the advanced sheet, presented to the Institution, I can only say that having been given to the Academy, I no longer had the right to so dispose of it.

The winter of 1874 will be remembered as one of the severest in the history of the great Northwest, and the specimen was doubtless driven south for food. During the same winter the Goshawks in mature plumage were often met with in the pine forests of northeast Minnesota. One of the finest specimens of the mature male of this fine hawk was found starved and frozen in a woodpile, and another was brought to me alive that had followed a hen into a farmer's kitchen in the timberland, where it was captured in magnificent plumage, and many more of the young of the year were obtained by grouse hunters in the deciduous forests.

SPECIFIC CHARACTERS.

Entirely white; upper parts with regular transverse, and very distinct bands of brown, becoming somewhat crescent shaped on the scapulars and rump, and slightly acuminate on the shafts of the feathers; quills white and brownish black at their tips; tail white, with about twelve transverse narrow bands of brown; under parts with a few longitudinal lines of dark brown.

Length, 24; wing, 16.50; tail, 10.

Habitat, northern North America.

FALCO PEREGRINUS ANATUM (BONAPARTE). (356.)

DUCK HAWK.

The typical species of all the true falcons, the Duck Hawk is the last of its family to escape the recognition of the genuine sportsman. Minnesota being the El Dorado of this species, dotted all over with its innumerable lakes, ponds and streams, whither the duck kingdom repairs in the seasons of migration, and to breed in many cases extensively, it may be asked why should this hawk go further. He reaches us simultaneously with the arrival of the ducks and geese, which varies somewhat with the different seasons. It is more frequently in the last days of March, or first in April, but I have known them to be here in force by the 17th of the former month. The Duck Hawk never goes long hungry, for while the birds of the water are in migration, his larder is at hand. Like others of its family which build on inaccessible cliffs on the seashore, it takes to the trees here, and constructs its nest of sticks, twigs, grass and leaves, in which are dropped four reddish-brown eggs, which are minutely spotted and blotched with a darker shade of the same. The young of this species have been found on the wing by the 25th of May, although some pairs are only building or incubating at that date. As compared with some others the Duck Hawks are not a numerous species, but are fairly so for their own. Their chief breeding section seems to be in the great forest and lake region in the northern counties of the State.* Their agility on the wing is simply marvelous, and their darting not a whit less so. When in proximity to their prey, they seem almost insensible to danger, but when once they have secured it, their discretion returns to dominate all their movements, and they seek places of entire safety in which to devour

*Mr. Lewis found them breeding on the shores of several lakes in Becker and Cass counties. At Leech Lake were two nests. In every instance they were constructed on trees at considerable elevation, but no more difficult to reach than those of the other species of large hawks.

it. I was for several years a member of a gun club in the city where I reside, and I well remember an incident in illustration of the characteristics of this hawk which took place while we were shooting at pigeons thrown from a trap. The firing was rapid at the time, when a pigeon got away and circled around over a cornfield directly behind the shooting stand. A little out of good range, it nevertheless received the attention of a dozen guns, during which time a Duck Hawk appeared in pursuit of the escaping pigeon, and undismayed by the roar of the guns, drove the bird directly over our heads, where of course both birds were sacrificed. It proved to be a female in full plumage. The event occurred on the 13th of August, 1875.

Sportsmen early learn that this hawk is exceptionally obnoxious to their amusement, be the game whatever it may, provided it is not larger than the bird in question. It is a remorseless marauder and murderer, killing for amusement after satisfying its hunger completely. It will attack small birds, and as fast as it crushes the life of one out with its talons will drop it and attack another. No man should be accounted a genuine sportsman with the gun who does not instantly slaughter the Duck Hawk at sight. These brigands of the wing understand what their own standing is with this class of the genus homo, and will give him a wide berth except when running down their victims, when they are oblivious to all else.

They have usually left the State by the 25th of October, except an occasional individual found in the southern counties, where they remain far into November.

FALCO COLUMBARIUS L. (357.)

PIGEON HAWK.

Being exceptionally familiar with this hawk in other sections, I am not a little disappointed to find them so extremely rare here, although I have long known them to be accounted only subcommon in the Mississippi valley. In 1862 I found a specimen of this species in the mounted collection of a gentleman who was an expert in the identification of *game* birds, and was making a study of their predatory enemies on wings. He obtained it in the fall of the previous year while it was in the act of seizing another bird, and was impressed with its unfamiliar appearance enough to have it mounted without having known its specific identity until I named it for him. In 1867 I found a representative of each sex in Mr. Howling's collection, since

which I have seen but two individuals of the species, and those had been already mounted. I pronounce it a rare species in Minnesota. I have never yet seen a specimen of them alive, much as I have been on the alert for them. Of course occasional individuals pass through the country in migration or those mentioned could not have been obtained, for they were all killed within our borders. And all the conditions requisite for their food are here, so that for aught apparent they might breed here as highly favored as anywhere else, yet for some reason they do not to any great extent at least so far as is yet known. Their food is mostly comprised of small birds.

They reach this latitude early in April, sometimes not until the middle, when they remain but a very short time. From the statement of persons familiar with birds in general, one individual has been met with in November, but the next latest date that I have learned of was the twenty-fifth of October.

SPECIFIC CHARACTERS.

Entire upper parts bluish-slate color, each feather with a black longitudinal line; forehead and throat white, other under parts pale-yellowish, or reddish-white, every feather with a longitudinal line of brownish-black; tibiæ light ferruginous with lines of black; quills black tipped with ashy-white; tail light bluish-ashy, tipped with white and with a wide subterminal band of black, and with several other transverse narrow bands of black; inner webs nearly white; cere and legs yellow; bill blue.

Length (of female), 12 to 14; wing, 8 to 9; tail, 5 to 5.50.

Habitat, North America.

NOTE.—The Sharp-shinned Hawk (*Accipiter velox*) has been confounded with this species, on account of its having also been popularly called the Pigeon Hawk, but it is very unlike it in nearly all respects, and finds its systematic place in another genus.

FALCO RICHARDSONII RIDGWAY. (358.)

RICHARDSON'S MERLIN.

This species so long regarded a variety of *Columbarius*, has only, like the other, come under my notice in two skins obtained in a collecting exploration near the head of Lake Superior in 1875. They were listed as belonging to the other species, but afterwards came under my examination when I decided they were Richardson's Hawk. I am not at all certain that one or two of those given under *Columbarius* were not of this species, but not all. I subjoin Mr. Ridgway's description of his newly named species.

SPECIFIC CHARACTERS.

Upper plumage, dull earth-brown, each feather grayish-umber centrally, and with a conspicuous black shaft-line. Head above, approaching ashy-white anteriorly, the black shaft-streaks being very conspicuous. Secondaries, primary coverts, and primaries margined terminally with dull white; the primary coverts with two transverse series of pale-ochrous spots; primaries with spots of the same, corresponding with those of the inner webs. Upper tail coverts tipped and spotted beneath the surface with white. Tail clear drab, much lighter than the primaries, but growing darker terminally, having basally a slightly ashy-cast, crossed with *six* sharply defined, perfectly continuous bands (the last terminal) of ashy-white. Head frontally, laterally and beneath—a collar round the nape (interrupting the brown above)—and entire lower parts, white, somewhat ochraceous, this most perceptible on the tibiæ; cheeks and ear coverts with sparse, fine, hair-like streaks of black; nuchal collar, jugulum, breast, abdomen, sides, and flanks, with a median linear stripe of clear ochre-brown on each feather; these stripes broadest on the flanks; each stripe with a conspicuous black shaft-streak; tibiæ and lower tail-coverts with fine shaft-streaks of brown, like the broader stripes of the other portions. Chin and throat only, immaculate. Lining of the wings spotted with ochraceous-white and brown in about equal amounts, the former in spots approaching the shaft. Inner webs of the primaries with transverse broad bars of pale-ochraceous—eight on the longest.

Wing, 7.70; tail, 5; culmen, 0.50; tarsus, 1.30; middle toe, 1.25; outer, 0.85; inner, 0.70; posterior, 0.50.

Habitat, interior and western plains of North America.

FALCO SPARVERIUS L. (360.)**AMERICAN SPARROW HAWK.**

Arriving not far from the first day of April the Sparrow Hawk is seen for a short time very frequently.

They feed much on mice, grasshoppers and crickets, but relish a sparrow when secured. No intelligent farmer wants these hawks destroyed, so valuable are their habits in the destruction of field mice especially. The pairing season is usually about the middle of May. For the construction of their nests holes of all sorts are employed, but more frequently that of a woodpecker, notably the Golden-winged, but hollow trees with a large knot hole for entrance are the first choice. Here there is a call for some substructure of sticks and twigs, on which are imposed the grass, leaves, moss or feathers, as the surroundings best afforded. As a rule they

seek locations considerably removed from dwellings, but do not reject the outhouses when they are considerably separated from the others. Indeed, one pair occupied a box used for a dove roost. But who would find them in their most frequented localities during the breeding season must go to groves of timber bordering extensive meadows. They lay about four or five eggs that are brownish-white, speckled all over with reddish-brown and frequently considerably blotched with a light reddish.

As an indication of their value to the agriculturist, I will introduce an excerpt from the pen of M. de Lautrie, who says: "In 1863 I took five little Sparrow Hawks and put them in a cage. The parent birds immediately brought them food, and I was not surprised to see that it consisted of twelve mice, four large lizards and six mole crickets. A meal of like size was brought every day for a month. At one time there were fifteen field mice, two little birds and a young rabbit. Last year I made the same experiment with the same result, one meal consisting of twelve small birds, one lark, three moles, and one hedgehog. In one month the five baby hawks rid the world, by actual count, of 420 rats and mice, 200 mole-crickets, and 158 lizards."

Need a word be added to satisfy the most incredulous that the Sparrow-Hawk is a friend of man, and should be protected by law?

Late in July and August, the young being grown, they become widely distributed and remain exceedingly common till about the first to the tenth of October.

SPECIFIC CHARACTERS.

Frontal band and space including the eyes and throat, white; spot on the neck behind, two others on each side of the neck, and a line running downwards from before the eye, black. Spot on the top of the head, neck behind, back, rump and tail, light rufous or cinnamon color. Under parts, generally, a paler shade of the same rufous as the back, frequently nearly white, but sometimes dark as the upper parts, and always with more or less numerous circular or oblong spots of black. Quills brownish-black with white bars on their inner webs. Tail tipped with white, frequently tinged with rufous, and with a broad subterminal band of black, outer feathers frequently white, tinged with ashy and barred with black. Bill light blue; legs yellow. Back generally with transverse stripes of black, but frequently with very few, or entirely without; rufous spot on the head, variable in size, and sometimes wanting.

Length, 11. to 12.; wing, 7. to 7.50; tail, 5. to 5.50.

Habitat, whole of North America.

PANDION HALIAËTUS CAROLINENSIS (GMELIN). (364.)
AMERICAN OSPREY.

About the middle of April this remarkable hawk-eagle is seen perching on the projecting limb of a dry tree on the shore of some lake or creek, and more frequently the latter, as the fish are making their way to the marshes to spawn. Perhaps his doubtful distinguishment from the eagle has scarcely been settled, when down he drops, splash, into the water, out of which he instantly rises with a large fish hanging by its head from his talons, as he sails away to the forest at hand. He never stays near the place where he gets his prey, but from a long cherished memory of the persecutions of the bald eagle, at once buries himself in the coverts of the thick, dark woods while devouring it. I was once in such a forest in search of some small birds, when my attention was arrested by what I supposed to be an eagle with a large snake dangling by its head from the talons of one foot. I instantly exchanged a shell loaded with No. 12 shot for one charged with No. 8, and awaited his approach.

As I stood in a little open space, I expected nothing else than that he would see me and turn his course, but remaining perfectly still, he continued to come directly towards me, and assayed to light on the lower limb of a lofty tree directly over my head, about sixty feet above me, when, just as his unengaged foot grasped the limb, with both wings extended, I pulled trigger, and speedily got myself out of the line of his gravitation, when a monstrous Fish Hawk and a bouncing pickerel simultaneously struck the ground at my feet. The hawk was too dead to wag a toe or shrug a wing, but the fish flopped and bounded like any other fish just out of water. One, I helped my friends eat for dinner, and the other was a few days after on the shelves of my private collection of birds, since presented to the Minnesota Academy of Natural Sciences.

About the first of May they begin to build their nests, which are placed more commonly in a large tree on the bank of either a large stream or a lake of considerable size. Occasionally they go quite a little distance into the forest, where the trees are very numerous and tall. Except in the hugeness of its proportions the nest does not differ materially from the other large hawks or from the eagles except in being a little less bulky. It consists of large sticks, smaller sticks, grass with bits of turf clinging to it, coarse weeds and fine weeds mixed with somewhat finer grass.

They usually have three eggs. Their color is exceedingly variable, part of those I have in my possession being much darker and more extensively blotched than others. But I should call the average reddish-brown with a creamy shade.

Almost universally distributed throughout the State this hawk is nowhere abundant, Mr. Washburn found them only "sub-common" at Mille Lacs, although I am inclined to think he would have found more of them a little later in the season, as the young would then have been full grown, and on the wing or "fishing" along the shores of the lake.

They linger in autumn as late as the fishing remains good which is nearly November, but as the waters in the streams and lakes become colder, the fish seek the deeper places, and thus are out of the way of this their great enemy.

SPECIFIC CHARACTERS.

Wings long; legs, toes and claws very robust and strong. Head, and entire under parts white; stripe through the eye, top of head and upper parts of body, wings and tail, deep umber brown, the tail having about eight bands of blackish-brown; breast with numerous cordate, and circular spots of pale yellowish-brown; bill and claws bluish-black; tarsi and toes greenish yellow.

Length (female), 25; wing, 21; tail, 10.50.

Habitat, North America.

Family STRIGIDÆ.

STRIX PRATINCOLA BONAPARTE. (365.)

AMERICAN BARN OWL.

In 1858 I was informed that the Barn Owls were never seen in Minnesota, and after many years observation of the birds I came to the conclusion that those who had been here before me were right, when I obtained one specimen of the female, and then another long period passed before I saw another that had been shot by a man in the maple woods in the vicinity of Parker's Lake. Again several years passed, and I heard of some having been obtained, but had some doubts as to the identity, not having seen the birds; but before very long I began to get one sent me occasionally, and I had the pleasure of obtaining some myself, and getting statements from one or two persons who were competent and reliable, who described them correctly, when I received a carefully detailed description of the young which I

followed up to the birds themselves, which had been obtained from the nest in the Big Woods. They were able to fly a little only, and were therefore easily caught, and soon became tame.

I have had no late additions to my specimens secured, but I have settled it that although not largely represented, they are a regular summer resident, lingering until quite late in November in some sections heavily timbered, but I cannot find that any remain through the winters. Their plumage is not of sufficient density to protect them in high latitudes. The breeding places here are, as far as I have been able to ascertain, more frequently in the coarse reeds of dry marshes where the muskrats have formerly built their houses, on the remains of which the eggs are dropped with little if any attempt at building a nest. But in one case the brooding place was in a rather superficial hole in the side of a bank of earth a few feet in height. The eggs are four in number, purely white and nearly of the same measurements in either direction. Incubation begins variously from April 20 to May 10, according to the locality and the season.

In September, 1891, through the kindness of Mr. J. Fletcher Williams, of St. Paul, I received a letter from Dr. Chas. A. Gray, of Waterville, describing three birds of some new species that had been found in a hollow tree in the vicinity, which from a photograph accompanying proved them to be the Barn Owl, but so strikingly like the European that I asked for further descriptions in the way of measurements, &c., which settled it specifically as the American Barn Owl. A more comical group of birds I never saw, and I am under much obligation to Dr. Gray for it.

My observations of this species in California for 17 years, have confirmed me in the conviction that it is not particular where it has its nest; for they occupy the holes of the ground squirrels, a hole in the rocks, where such are easily found, but preferably a hollow tree, no matter how deep the cavity, if of sufficient diameter to readily turn about in. That it is a much more common bird in Minnesota than I have felt at liberty to record it I strongly suspect, but its nocturnal habits must leave a doubt about that till more extensive observations have been made.

SPECIFIC CHARACTERS.

Entire upper parts pale fawn color or tawny brownish-yellow, frequently very pale, nearly every feather with a small subterminal black spot, succeeded by another of white; under parts generally pale fawn color, but frequently a pure white

with small lanceolate and circular spots of brownish-black; under coverts of wings and tail white; quills fawn color; primaries with about five irregular transverse bars of brownish-black; tail with about four or five bands of dark brown; face white; spots of dark chestnut brown around the eyes; irides brownish-black; bill, toes and claws, light yellowish.

Length (of female), 16; wing, 13; tail 5.50.

Habitat, North America, from New York and Minnesota, southward through Mexico.

Family BUBONIDÆ

ASIO WILSONIANUS (LESSON). (366.)

AMERICAN LONG-EARED OWL.

Although falling far short of being as common a species in this State as the Great Horned Owl, (*Bubo virginianus*), it is by no means rare. Its extremely reticent, and entirely nocturnal habits, have led many, conversant with the general habits of the birds to suppose it to be a very unusual migrant here, instead of a permanent resident. For the reasons already suggested, little is yet known of its breeding habits. A few nests have come within my observation, some of which were found within what has since become a portion of our city limits. Between Lakes Calhoun and Harriet, there is a Tamarack swamp, very densely wooded, or was until thinned out by the Lakewood Cemetery Company. In the forks of some of the tallest members of the group, were some nests of the Long eared Owl. The nests consist of green larch twigs, leaves and grass. In the heart of the Big Woods are many small dried swamps untouched by the woodman's axe. Not many of these will need to be searched by one practiced in hunting birds' nests in their season, before the labor will be rewarded by the discovery of not only the nest of this species, but that also of the Saw-whet Owl. But of that, more in its own place. The eggs are four in number, and pure white.

The first brood is on the wing before April is gone, and the last, by the first of August. Their food consists of mice, and small birds. No other species of owl is so exclusively nocturnal in all of its habits. They are quite generally distributed where there is heavy timber.

Mr. Washburn found them common at Thief River in Otter Tail county, from which circumstance we may with abundant reason, suppose them equally so in the northern sections of the State generally.

Very many of this species find their way into the hands of the taxidermists for mounting. Mr. Howling who has done nearly all of the mounting of birds for me which I have had done, has many times called my attention to the variations of plumage of the Long-eared Owls, in connection with sex and degrees of maturity. He has always preserved notes of the different birds sent to him as far as possible, that I might have the benefit of them.

In this way I have secured many invaluable opportunities for information.

SPECIFIC CHARACTERS.

Ear tufts long and conspicuous; eyes rather small; wings long; tarsi and toes densely feathered. Upper parts mottled with brownish-black fulvous, and ashy-white, the former predominating. Breast pale fulvous with longitudinal stripes of brownish-black; abdomen white; every feather with a wide longitudinal stripe, and with transverse stripes of brownish-black; legs and toes pale fulvous, usually unspotted, but frequently with irregular, narrow, transverse stripes of dark brown; eye nearly encircled with black; other feathers of the face ashy-white, with minute lines of black; ear tufts brownish-black, edged with fulvous and ashy-white; quills pale fulvous at their bases, with irregular transverse bands of brown; interior coverts of the wing pale fulvous, frequently nearly white, the larger widely tipped with black; tail brown, with several irregular transverse bands of ashy-fulvous, which are mottled as on the quills; bill and claws dark horn color; irides yellow.

Length (female), 15; wing, 11 to 11.50; tail, 6.

Habitat, temperate North America.

ASIO ACCIPITRINUS (PALLAS). (367.)

SHORT-EARED OWL.

In my earlier observations of the birds of Minnesota, I accepted the conclusion that the Short-eared Owl was decidedly a rare species. Further observations have changed that conclusion. Their proclivity to marshy districts and building their nests on and in the ground, misled me somewhat, but since I have become more familiar with their feeding and breeding habits, I believe them to be, at least, fairly common. It has been truly said that what the Marsh Hawk is to the marsh by day, this owl is by night. Essentially nocturnal in its feeding, it is not absolutely blind in the daytime, but if flushed from the ground where its colors largely conceal it, it flies away in a confused manner, and then sails along quite near to the ground till at a safe distance, and then drops sud-

denly down into its grassy covert again. Occasionally a favored locality will harbor several of them in the tangled grass during the day, to gather a harvest of small water-birds during the night, as indicated by the feathers in the morning. They tear open the breast and eat only that portion, leaving the remainder to tell the tale of their distinctive habits. They commence flying soon after sunset, and put in their best work in hunting before the twilight has disappeared, but if not eminently successful during that time, will work still far into the night, as is shown by the shallaboo amongst the terns and snipe.

Sticks, reeds, grass and feathers comprise the materials of their nests, which are placed on the ground generally, but are sometimes found in forsaken burroughs. Four white eggs are laid in May. Whether they rear more than a single brood I cannot tell, but the young are seen occasionally late enough to make it highly probable that they do.

It is only occasionally taken, and then usually by hunters who have little interest in ornithology. However it gets into the hands of the taxidermist often enough to prove it fairly common in most parts of the State. Mr. Laurie found it at Duluth and Mr. Lewis at Red lake. Mr. Washburn does not mention this species in either of his reports from Mille Lacs and the Red river valley.

SPECIFIC CHARACTERS.

Ear tufts very short; entire plumage buff or pale fulvous; every feather on the upper parts with a wide longitudinal stripe of dark brown, which color predominates on the back; under parts paler, frequently nearly white on the abdomen, with longitudinal stripes of brownish-black most numerous on the breast, very narrow and less numerous on the abdomen and flanks; legs and toes usually of a deeper shade of the same color as the abdomen; quills pale reddish fulvous, at their bases, brown at their ends with wide, irregular bands and large spots of reddish fulvous; tail pale reddish fulvous, with about five irregular transverse bands of dark-brown, which color predominates on the two central feathers; under tail coverts usually nearly white; throat white; eyes enclosed by large spots of brownish-black; eartufts brown, edged with fulvous; bill and claws dark; irides yellow.

Length (female), 15; wing, 12; tail, 6.

Habitat, North America.

SYRNIUM NEBULOSUM (FORSTER.) (368.)**BARRED OWL.**

Next to the Great Horned Owl, the Barred Owl is the most numerous of any species of its family in Minnesota. Yet they are less so here than in Illinois, or than formerly so there. They are slightly (I think considerably) migratory in the southern portions of the State, moving southward somewhat in severe winters, but in the pine regions they are not so, for I have obtained specimens from time to time from lumber camps during the hardest winters we have ever experienced. During the summer season many of them get distributed over the entire prairie regions, when they are even more easily obtained there than in the densest timber regions. I have found them in the vicinity of Duluth with little difficulty and hunters report them frequently met with in duck hunting, particularly in spring shooting. Several nests have been discovered within the vicinity of Princeton and two or three near the north arm of Lake Minnetonka. They breed as early as any other species, if *Bubo virginianus* is excepted, the eggs having been once brought to me fresh on March tenth. They are pure white, subspherical in form and from four to five in number. The structure of the nest is quite bulky and is generally located in a fork of a tree fifty or sixty feet from the ground. It consists of sticks and leaves principally.

The food of the Barred Owls consists chiefly of field mice, reptiles and small birds. At the dawn of morning and again at evening, "twilights mystic hour," it may often be seen floating silently along the border of the woods or over the meadows in quest of its humble game, so near the grass or grain that the wings seem to rest upon it. It cannot be regarded as especially a woodland bird, for they are quite as frequently met with far out on the prairies where not even a bush can be seen for many weary miles.

SPECIFIC CHARACTERS.

Head large, without ear tufts; tail rather long; upper parts light ashy-brown, frequently tinged with dull yellow with transverse narrow bands of white most numerous on the head and neck behind, broader on the back; breast with transverse bands of brown and white; abdomen ashy-white, with longitudinal stripes of brown; tarsi and toes ashy-white, tinged with fulvous, generally without spots but frequently mottled with dark brown; quills brown with six or seven transverse

bars nearly pure white, on the outer webs and ashy fulvous on the inner webs; tail light brown with about five bands of white generally tinged with reddish-yellow; discal feathers tipped with white; face ashy-white, with lines of brown and a spot of black in front of the eye; throat dark brown; claws horn color; bill pale yellow; irides bluish-black. Sexes alike.

Length, 18 to 20; wing, 13 to 14; tail, 9.

Habitat, eastern United States to Minnesota and Texas.

SCOTIAPTEX CINEREA (GMELIN). (370.)

GREAT GRAY OWL.

All statements to the contrary, and by whomsoever made, this species is not so "far from common" in Minnesota as it might be. A slip of the pen in the hastily prepared list of birds, published by the Minnesota Academy of Natural Sciences in 1874 made me say *very common* when speaking of this species, and in my absence some one else read and corrected the proof, who of course did not know that the word *not* had been accidentally omitted, which was the case.

The Great Gray Owl is justly called an Arctic species, and is really a more northern bird than the Snowy Owl (*Nyctea nyctea*), yet it has a recognized record as a winter migrant in Ohio, Michigan, Illinois, Massachusetts and New Jersey. When I first visited Minnesota Territory between thirty and forty years ago, I found several specimens of this huge owl in a collection belonging to a gunsmith whose name I have lost, which I was informed had been obtained in the immediate vicinity. When in 1858 I removed to Minneapolis, I remembered this amongst the earlier species of birds in which I conceived a special interest. Before the close of the winter of 1859, I had seen five, of which I obtained one myself, Mr. House two and Mr. Henry two.

In 1874, when the Bulletin of the Academy of Natural Sciences was published, Mr. Shroeder of St. Paul had two, Mr. Howling of this city three and I had seen three in private collections. Since the date of that publication, I have only seen a few specimens in the hands of sportsmen and the taxidermist for mounting.

All observers admit that they are not seen as often of late as formerly, in the lower portions of the State at least. Their food is principally the same as that of the other owls so far as I have been able to ascertain, and they retire northward in the latter part of April. I have but one record so late as that date.

SPECIFIC CHARACTERS.

The largest owl of North America. Head very large, eyes small, tail rather long; upper parts smoky or ashy brown, mottled and transversely barred with ashy-white; under parts ashy-white, with numerous longitudinal stripes of dark ashy-brown predominating on the breast and with transverse stripes of the same on the abdomen, legs and under tail coverts; quills brown with about five wide, irregular bands of ashy-white; tail brown with five or six wide, irregular bands of ashy white, mottled with dark brown; feathers of the disc on the neck tipped with white; eye nearly encircled by a black spot; radiating feathers around the eye, with regular transverse narrow bands of dark brown and ashy white; bill pale yellow; claws pale yellowish-white, darker at their tips; iris bright yellow.

Length, 25 to 30; wing, 18; tail, 12 to 15.

Habitat, Arctic America.

NYCTALA TENGMALMI RICHARDSONI (BONAP.). (371.)

RICHARDSON'S OWL.

I believe this owl to be a more northern species, which visits the State considerably in winter. I find it is more common about the head of Lake Superior than in the middle and southern counties. I have an individual sent me, sometimes several, from different sections of my field every winter and I have seen a number in Mr. Howlings' collection at different times, but by far the larger portion have been from Duluth and vicinity. It was taken in the dense woods west of Lake Minnetonka as early as 1869, and persons residing in that region who claim to be perfectly familiar with the Saw-whet or Acadian Owl, (*N. Acadica*) assure me that this form is not unfrequently seen in the colder weather of winter.

Its food principally is small birds, mice and insects. It is enough larger than the Saw-whet to make its popular observation presumably correct.

I shall not be greatly surprised if the nest is found here ultimately, notwithstanding it has been considered so exclusively arctic. It is strictly nocturnal in its habits, living upon small birds, insects and mice.

SPECIFIC CHARACTERS.

(From Stearns.)

••Above olivaceous chocolate brown, spotted with white; beneath, white, spotted and streaked with a brown similar to the back, but a little darker; disk white; a white spot between the

bill and the eye; wings and tail with white spots on both webs, the latter with from eight to ten pairs; bill light yellow; iris yellow; tarsus feathered.

Length, 10; wing, 7.25; tail, 4.50.

Habitat, Arctic America.

NYCTALA ACADICA (GMELIN). (372.)

SAW-WHET OWL.

This species is quite common in restricted sections, and just how restricted it is quite impossible to say until its distribution can be further investigated. As far back as 1868, I frequently visited a family residing 24 miles from the city and in the heart of the Big Woods, who were familiar with this species under its popular name. They assured me that it was a permanent resident, breeding in woodpeckers' holes sometime in April. Succeeding opportunities enabled me to confirm their statements, and I found the bird quite common during that portion of the autumn when ruffed grouse shooting was the order of the day. The nest is furnished with some grass, and feathers occasionally. The eggs are very clear, almost translucent white, and four to five in number. It is emphatically a nocturnal species, living upon small quadrupeds, birds and insects. It has been reported to me by the lumbermen at several of the logging camps in winter.

The larger portion of the earlier choppers were former residents of Maine, where they said that the Saw-whet was a common species, and that they knew that this was the same, not only by its general appearance but by the saw-filing note it kept up in March specially. This last is a striking characteristic of the species, and very familiar to observing residents of the sections where they breed. They are extremely cautious and sly about their breeding, but at other times they seem quite confiding. The nests are more commonly placed in the forks of a sapling, but occasionally in the nest of another bird or in a knot-hole in a larger tree, and consists of sticks, dry leaves and feathers. The eggs are laid in early April, and are three in number, nearly round in outline, and pure white. The food of the Saw-whets is principally insects in summer, but they eat almost anything when driven to it by hunger.

SPECIFIC CHARACTERS.

Small; wings long; tail short; upper parts reddish-brown, tinged with olive; head in front with fine lines of white, and on the neck behind, rump and scapulars with large, partially

concealed spots of white; face ashy-white; throat white; under parts ashy-white, with longitudinal stripes of pale reddish-brown; under coverts of wings and tail white; quills brown with small spots of white on their outer edges, and large spots of the same on their inner webs; tail brown; every feather with about three pairs of spots of white; bill and claws dark; irides yellow.

Length, 7.50 to 8; wing, 5.50.

Habitat, North America.

MEGASCOPS ASIO (L.). (373.)

SCREECH OWL.

This owl's presence in different portions of the timbered sections has been verified beyond a question, by its distinctive notes for a great many years, yet it has only occasionally been seen. When riding through the dark primeval forest which formerly encompassed Lake Minnetonka, it was no unusual experience in early spring, to hear one or more of these birds *screech* in the distance, particularly if a few rays of a pretty full moon found their way through the leafless branches. That they breed here there can be no doubt, for they are here in summer. But one nest has been found that I have had the privilege of examining. It was in a hollow stump and consisted of grass, leaves, plenty of moss, and some feathers.

It contained four, nearly round, polished, white eggs, having been discovered about the 10th of May, but was not invaded till the 16th.

The lumbermen claim that they hear their screechings at times all winter in the pine forests about Mille Lacs, and other logging sections.

Dr. Hvoslef reports them "occasional" at Lanesboro, but does not state at what season of the year.

Mr. Washburn makes the same report from Devil's Lake in August.

The nest is generally in a hole in a tree at varying elevations from the ground, but has occasionally been found in other situations, notably about isolated old outhouses and barns. They build about the first week in May.

SPECIFIC CHARACTERS.

Upper parts pale ashy-brown, with longitudinal lines of brownish-black, mottled irregularly with the same and with cinereous; under parts ashy-white, with longitudinal stripes of brownish-black, and with transverse lines of the same color; face, throat and tarsi ashy-white, irregularly lined and mottled

with pale brownish; quills brown with transverse bands, nearly white on the outer webs; tail, pale ashy-brown, with about ten transverse narrow bands of pale cinereous; under wing coverts white, the larger tipped with black; bill and claws light horn color; irides yellow.

Length, 9.50 to 10; wing, 7; tail, 8.50.

Habitat, eastern North America.

BUBO VIRGINIANUS (GEMELIN). (375.)

GREAT HORNED OWL.

A lad about ten years of age recently visited the Twin Cities, who had never seen a good many things, among which this famous Night King of the forest. He had read of the species, but having never seen a forest, or even a forest tree in his life, until on his way here it was not strange that he had never looked upon, or heard the notes of this wonderful bird. Let us imagine his surprise when he was halfway across a narrow arm of a larch swamp spanned by turnpike, walking deliberately beside a friend, and heard in the darkness the dismal, weird, *hoo-o, hoo-o, hoo, hoo, hoo, hoo*, of the Great Horned Owl. The half-breathed half-uttered, "Gosh!" becomes eloquent in our imaginations, without the touch of anything bordering on the profane. When I was a lad of the same age, and accustomed to hearing those notes, I was spending the night with a family of friends, in a densely wooded portion of the country, at a time when the moon was 'full.' Stepping out of the door into the flood of the moonlight just before retiring, I heard a characteristic hoot, a long distance away, and boylike, hooted back to it. In an instant a response to me came from a much nearer point, but in another direction, to which I replied as promptly, and again received an answer; and this reciprocal hooting for less than a quarter of an hour, brought seven different owls of the kind simultaneously within visible distance of where I stood, in the shadow of a projecting limb of a lofty elm. While quietly contemplating my success in deceiving and alluring such an unprecedented number of owls, a boom from one of them that had, unheard, perched immediately over my head, burst upon me so suddenly that my courage forsook me, and I sprang incontinently from my hiding place into the clear moonlight, where a glance upward embraced the monstrous bird with every feather erect, and eyes expanded, glaring down upon me, instantly following which he spread his broad wings and sailed away into depths

of the dark forest out of my sight. He looked to me vaster in all his proportions than all of my conceptions of Milton's winged Apollyon, as he floated silently into the shadows of the night.

These are the most numerous of the eleven or twelve species met with within our borders, and the largest of the assured permanent residents. They more commonly build their nests in the forks of the loftiest trees of the woodlands, far from habitations. It is constructed of sticks first, over which are laid twigs. These are sometimes massed in considerable quantities, and give the general dishing form to the structure. Whithin it is lined with leaves, moss, and grasses, with occasionally a few feathers from the owl's own body; but these may be the mere accidental sheddings which have occurred while occupying the nest. The eggs are white with a tinge of yellow, nearly spherical in form, and from three to four in number.

The period in which they enter upon their nesting varies greatly with different pairs. I do not find much difference from one year to another so far as the average time in which they build is concerned, as they take no consideration of cold; but I find the first nests begun earlier than in any other locality in which I have ever observed them. My earliest personal record is February 7th, and the latest April 7th, which I do not think is as late as they sometimes build, judging from the young owls occasionally offered by country boys in the market for pets. Their value to the farmer is slowly gaining acknowledgment amongst farmers in all sections of our wheat growing commonwealth from their great destruction of field mice especially.

The habits of the Great Horned Owls of working dire destruction amongst the domestic fowls that perch in exposed places, has produced a most unreasonable prejudice against the species by farmers, and hence he finds no mercy amongst them, but it exposes a very reprehensible practice of leaving their poultry to shift for themselves instead of providing secure quarters for them in a house devoted to their welfare. Even featherless bipeds have found that hens and chickens are good eating, and it is not strange if the facilities of this species for seizing and bearing them away so safely and securely should have suggested the trial for themselves, and succeeding so admirably, had perpetuated the practice. But the debit column against this bird should not stand alone, for there is another of credit, embracing rabbits, so destructive to young

fruit trees, skunks, more destructive to the poultry than the owls are, mink, weasels, etc., which will more than balance the account. Let the owls *all live*, and securely protect the poultry from not only the owls, but the animals, too. The habits of the species are too familiar to repeat them here, as the young have been so frequently captured for pets and reared in captivity that little of interest can be readily added. But woe to the unprotected poultry when one of these civilized marauders assumes his liberty in a favorable hour. Neither Mr. Washburn, nor any other observers have added anything to the local history of this species.

SPECIFIC CHARACTERS.

Large and strongly organized; ear tufts large, erectile; bill strong, fully curved; wing rather long, third quill usually longest; tail short; legs and toes robust and densely covered with short downy feathers; claws very strong, sharp, curved; variable in plumage from nearly white to dark brown, usually with the upper parts dark brown, every feather mottled, and with regular transverse lines of pale ashy and reddish-fulvous, the latter being the color of all the plumage at the base of the feathers; ear tufts dark brown, nearly black, edged on their inner webs with dark fulvous; a black spot above the eye; radiating feathers behind the eye varying in color from nearly white to dark reddish-fulvous, usually the latter; feathers of the facial disc tipped with black; throat and neck before, white; breast with wide longitudinal stripes of black; other under parts variegated with white and fulvous, and every feather having transverse narrow lines of dark brown; middle of the abdomen frequently, but not always, white; legs and toes varying from white to dark fulvous, usually pale fulvous, in most specimens unspotted, but frequently and probably always in mature specimens, with transverse narrow bars of dark brown; quills brown, with wide transverse bands of cinereous, and usually tinged on the inner webs with pale fulvous; tail the same, with the fulvous predominating on the outer feathers; iris yellow; bill and claws bluish-black.

Length (female), 21 to 25; wing, 14.50 to 16; tail, 10.

Habitat, eastern North America.

NYCTEA NYCTEA (L.). (376.)

SNOWY OWL.

Although never an abundant, or even a common species, the Snowy Owl was formally seen in the middle and southern sections of the State much more frequently than in late years. Two different causes have doubtless contributed to this decrease. In the early settlement of the country they were left

quite undisturbed, but with the distribution of subsequent settlements, an occasional bird fell before the farmer's gun. The old, mature bird, always wary, grew cautious, and gave the vicinity of dwellings a wide berth. After a time Minnesota became a famous resort for deer and Ruffed Grouse shooting, late enough for sportsmen to catch a shot at a Snowy Owl. Taxidermists all over the land offered high prices for them to mount, which brought every boy with a shotgun in his possession into the field for them in particular. The consequence has been to send the wary old, mature individuals of the species around some other way, or make them exceedingly arboreal in their habits in winter. For many years now, not less than nine in every ten of them seen or collected, have been the young of the year. Indeed, it is only occasionally met with in the sections alluded to, even in the first plumage now, but in the northern, swamplier, and more heavily timbered sections, it is as well represented as ever, so far as I can learn from others and from personal observation.

Sometimes earlier, but generally the first of these birds arrive from the north about the 15th of November. They remain until about the first of May, after which they are seldom seen.

It is emphatically a Grouse Owl, as any one who examines the ingesta will readily see. It hunts its prey mostly in the twilight of evening and morning, but has equally good day vision, though manifestly preferring cloudy days when much exposed. The nearly complete white plumage is only attained in the third or fourth year.

Mr. Lewis found them "rather common for the species" in Becker county, and at Leech lake the 19th to 23d of October. Mr. Washburn met them "occasionally" in Otter Tail between October ninth and November tenth. Specimens of the young were obtained during March and April, and in November of the present year (1887), within a few miles of Minneapolis and St. Paul.

SPECIFIC CHARACTERS.

Bill nearly concealed by projecting plumes; eyes large; entire plumage white, frequently with a few spots or imperfect bands, only on the upper parts dark brown, and on the under parts with a few irregular and imperfect bars of the same; quills and tail with a few spots, or traces of bands of the same dark brown; the prevalence of the dark brown color varies much in different specimens; frequently both upper and under

parts are very distinctly banded transversely, and sometimes this color predominates on the back; plumage of the legs and toes pure snowy white; bill and claws horn color; irides yellow.

Length (female), 26; wing, 17 to 19; tail, 10.

Habitat, Northern portions of Northern Hemisphere.

SURNIA ULULA CAPAROC (MÜLLER). (377a.)

AMERICAN HAWK OWL.

I have never seen the Hawk Owl in the flesh more than once, but I have found it mounted in the collections of local taxidermists many times since my residence in the State. It really looks "more a hawk than an owl," but its habits of hunting in the day-time—notably cloudy, gloomy days—makes it seem so more than do its looks. Its southern migration from its reputed arctic home must be considerably into the winter, for all the specimens I have known of having been taken have been well on towards spring, and in March I believe,—possibly one in early April, which is occasionally as much winter as is March.

As it breeds in New England, it may do so here. Its food is birds and mice principally. None have been reported to me as having been seen later than early April, as already intimated.

SPECIFIC CHARACTERS.

Wings rather long; first three quills incised on their inner webs; tail long, with its central feathers about two inches longer than the outer tarsi, and toes densely feathered; upper parts fuliginous-brown, with numerous partially concealed circular spots of white on the neck behind, scapulars and wing coverts; face grayish white; throat white with longitudinal stripes of dark brown; a large brown spot on each side of the breast; other under parts with transverse lines or stripes of pale ashy-brown; quills and tail brown, with transverse bands of white; bill pale-yellowish; irides yellow; color of upper parts darker on the head, and the white markings more or less numerous in different specimens.

Length (female), 16 to 17; wing, 9; tail, 7.

Habitat, Arctic America.

NOTE.—The Hawk Owl has come under my eye so often since writing the foregoing, that I cannot regard it as really rare any longer. I have met with them in November three times in eight years, within seven miles of Minneapolis, and found several in the taxidermists' collections during the same period.

L. P. H.

Order COCCYGES.

Family CUCULIDÆ.

COCCYZUS AMERICANUS (L.). (387.)

YELLOW-BILLED CUCKOO.

This widely distributed species had escaped my observation long after the Black-billed Cuckoo had become exceedingly familiar to me here, but in the spring of 1867 I met with a pair on the 30th of April, in some brushland bordering the heavy timber within a mile of the Mississippi river at Minneapolis. Having secured them both, I made exceptional efforts to find others, which however proved unavailing, and I was thus left to the presumption that they were probably stragglers until the next year, when to my great joy, I found them again on the 14th of May, in the timber but a short distance from one of our small, beautiful lakes, not two miles from where I first saw the others a year earlier. This time they were breeding. The nest, constructed of dry sticks, loosely interwoven and covered with some moss and catkins from the blossoming trees, was placed on a horizontal limb of an oak about seven feet from the ground. It contained four greenish-blue eggs.

From that time until the present, I have seen them at irregular intervals, but it is not a common species in any section I have personally explored.

A friend of mine, much interested in the habits of familiar species, had the fortune to secure a nest at Lake Minnetonka, under very similar circumstances, a year later. Mr. Lewis says of this species, "Common at Pelican lake, Becker county." He was familiar with the Black-billed Cuckoo, and could scarcely have been mistaken between the two birds. Mr. Howling as well as several others of our taxidermists have had specimens in their collections from time to time. They are

not a very wild, or over-cautious bird and yet are more arboreal in their habits than the Black-billed Cuckoos. They leave the country soon after the first sharp frosts of autumn.

Their food consists largely of caterpillars, larvæ, and smaller forms of insects.

Whenever I have seen this bird it has invariably been in the timber, where thickets prevail, and I have almost uniformly found it on the ground apparently feeding upon insects and larvæ. It would slip into the thicket instantly, through openings so small as to seem impossible to a bird of so great extension of its wings. As soon as well concealed, perhaps not twenty yards away, it would remain perfectly motionless until, with my field glass I could find and note it at my leisure, so long as I made no advance.

I have been disappointed in not getting more reports of this species from other sections of the State, and must think the reason is its extreme shyness, and not its total absence. I know of no other bird of its marked proportions which is so difficult to observe, for the reasons mentioned.

It will be driven a mile without appearing in sight above the brushy thickets it frequents, slipping alike through the perilous meshes of a thorn-bush and a prickly ash. I have pursued them in this manner until an opening compelled them to expose themselves for a moment, when they would fly as near the ground as possible to the next thicket, in which passage lay my only opportunity in securing them.

SPECIFIC CHARACTERS.

Upper mandible and tip of lower, black; rest of lower mandible and cutting edges of upper, yellow; upper parts metallic greenish-olive, slightly tinged with ashy toward the bill; beneath white; tail feathers (except the median, which are like the back), black, tipped with white about an inch on the outer feathers, the external one with the outer edge almost entirely white; quills orange-cinamon; the terminal portion and a gloss on the outer webs, olive; iris brown.

Length, 12; wing, 5.95; tail, 6.35.

Habitat, temperate North America.

COYCCZUS ERYTHROPHTHALMUS (WILSON). (388.)

BLACK-BILLED CUCKOO.

This species is, and has ever been a more regular summer resident than the Yellow-billed Cuckoo, reaching us about the 25th of April, often a little earlier or a little later. In common with the other species of cuckoo, the male precedes the female

about a week or ten days, and they mate very soon after her arrival. Its habits differ from the other mostly in its preference for open places, and cultivated fields, while that is more reclusive, occupying the forests mainly.

The nest of this species is quite uniformly located in a bush or small tree, and is constructed of roots, twigs, leaves, catkins and moss.* They lay four eggs, also greenish-blue, but of considerable darker shade than those of the Yellow-billed Cuckoo.

The notes sent me by correspondents nearly all testify to the presence of this bird during the season of incubation.

Mr. Washburn found it still in the Red river valley about the first of September. It generally remains until from the 15th to the 20th of that month, and disappears as silently as it came.

Dr. Hvoslef reports it at Lanesboro on the 25th of May, when of course it was presumptively breeding. Professor Herrick made a note of this species in his collections for the museum of the State University in 1875. Indeed it is a common species of its genus.

It prefers the vicinity of damp, shaded places, in the borders of wooded tracts, more commonly, but is often found in the fields and gardens, or on grass patches, surrounded by thickets.

SPECIFIC CHARACTERS.

Bill entirely black; upper parts generally of a metallic greenish-olive, ashy towards the base of the bill; beneath pure white, with a brownish-yellow tinge on the throat; inner webs of the quills tinged with cinnamon; under surface of all the tail feathers hoary ash-gray; all beneath the central on either side, suffused with darker, to the short, bluish-white, and not well defined tip; a naked red skin around the eye; iris hazel.

Length, 12; wing, 5; tail, 6.50.

Habitat, eastern North America.

*Several instances have now been reported to me, and I have observed one personally, where the nest was placed on the trunk of a decaying log, and the one I found consisted only of dry sticks and catkins of the maple, while those reported embraced roots, twigs and grass in their structure. In another instance I saw a Black-billed Cuckoo sitting in the middle of an obsolete cow path in the woods, and as it did not fly at sight of me, I approached it cautiously, thinking perhaps it was wounded, and I could not have been more than ten feet from it when it threw out one wing and the corresponding leg, and fluttered along just out of my reach until thirty feet away before it disappeared in the thicket, but I had not been deceived, for two characteristic eggs had been left completely exposed on the spot she left. All indications of a nest were absent, and the eggs were fresh, as their blowing afterwards proved.

I looked carefully for the remains of a nest possibly destroyed by an enemy, but I could find none, nor was I successful in finding a mate near.

This was on the 14th of May, 1877. It was remarkable, and quite inexplicable to me.

Family **ALCEDINIDÆ.****CERYLE ALCYON (L.). (390.)****BELTED KINGFISHER.**

This quaint fisherman is an early migrant, reaching Minnesota about the first of April. In some springs it has come on the 5th of March, (1883), then the 26th, once on the 29th, then on the 15th of April, &c. Its autumnal disappearance is quite as irregular; in one season going as late as Nov. 3d, in another, Dec. 5th, and so on, but usually going about the last of October.

They mate soon after their arrival, and are soon engaged in excavating a hole in the bank of a stream or lake, to the depth of about six feet, where they often make a square angle, and carry it a foot or two farther. There they enlarge it somewhat, and build in the extremity a nest composed of grasses, leaves and feathers.

This hole and nest is also used as a resting place at night, after the young are matured. It is a little remarkable that a family reared so associated together, can become completely disorganized as soon as the young are fully developed, yet it is a patent fact that by the first of September, all relations are dissolved, and each individual henceforth fishes alone.

Nowhere that my investigations have been extended, has this curious crank of the bird kingdom, been found absent from his chosen haunts at the season of his summer visitations.

In the proper place I should have said that they lay six pure white, nearly spherical eggs, which require sixteen days for incubation.

Their clamatorial rattle, is too familiar to everybody to require notice. Like many another good fisherman, "poor Alcie" is often compelled to retire on a light supply of fish diet, but it does not take him as long to dry out and get warm as it does the others. If the small fry are running lively, his stone-like drop from an overhanging limb, is a pretty certain antecedent to a rise with a minnow, crosswise in his bill; but when he is compelled to wait fifteen, twenty and thirty minutes for a single one to put in an appearance, he is not very certain of his game. I have seen them strike half a dozen times before securing one. His history would need a volume to half tell it.

SPECIFIC CHARACTERS.

Head with a long crest; above blue, without metallic lustre; beneath with a concealed band across the occiput, and a spot anterior to the eye, pure white; a band across the breast, and the sides of the body under the wings, like the back; primaries white on the basal half, the terminal unspotted; tail with transverse bands and spots of white.

Young with the sides of the body, and a transverse band across the belly below the pectoral one, light chestnut; the pectoral band more or less tinged with the same.

Length, 12.75; wing, 6; tail short.

Habitat, North America.

Order PICI.

Family PICIDÆ.

DRYOBATES VILLOSCUS (L.). (393.)

HAIRY WOODPECKER.

The Hairy Woodpecker must be accepted as a permanent resident with the qualification that he numerously visits more northern sections in summer. Enough remain to retain permanent proprietorship for the family, however. Nesting holes are excavated in old, partially decayed trees, at different elevations as availability may determine, and some half a yard in depth, in the bottom of which are deposited four or five clear white, smooth, thin-shelled eggs, with somewhat of a roseate tint. No soft materials underly them except fine chips of rotten wood perhaps.

The nidification of this species is said to be more observable in the northern counties, but certainly it is by no means common through the southern, or middle counties. Its winter distribution is restricted to the dense forests, notably the pine districts.

In the latter days of February usually, individuals of this species, often accompanied by a pair of the Downy Woodpeckers make their appearance about our outhouses and shrubbery, but they pay only brief visits until somewhat later, when they are seen more frequently, and remain longer when they come. When the genial suns of May have made the world once more all beautiful, they disappear for nidification. Then they must be sought for in the forest principally, although occasionally a pair by some means, ignores specific conventionalities, and builds in the end of a fence rail not a hundred yards from a dwelling, or in a hole in a fruit tree not half that distance away. They have been known to breed on the campus of the State University as early as the 3d of May, but that is nearly two weeks earlier than some enter upon nest building.

Reports of their presence, come from every portion of the wooded sections of the State heard from, which I have not personally visited. Dr. Hvoslef at Lanesboro, Prof. Herrick at Lake Shetak, Rev. Mr. Laurie at Duluth, Mr. Washburn at Mille Lacs, and in Otter Tail County, where he says; "Exceedingly common, and permanent residents." He further states that he "found it at Georgetown, Ada, and at St. Vincent."

SPECIFIC CHARACTERS.

Wilson's specific description of this common species is the only one I have ever seen, and I but follow an almost uniform example in giving it as follows:—"The Hairy Woodpecker is nine inches long, and fifteen in extent; crown black; line over and under the eye white; the eye is placed in a black line that widens as it descends to the back; hind head scarlet, sometimes intermixed with black; nostrils hid under remarkably thick, bushy, recumbent hairs, or bristles; under the bill are certain long hairs thrown forward and upward; bill bluish horn color, grooved, wedged at the end, straight and about an inch and a quarter long; touches of black proceeding from the lower mandible, end in a broad black stripe that joins the black on the shoulder; back black, divided by a broad, lateral stripe of white, the feathers composing which, are loose and unwebbed, resembling hairs, whence its name; rump and shoulders black; wings black tipped and spotted with white, three rows of spots being visible on the secondaries, and five on the primaries; greater wing coverts also spotted with white; tail as in the others, cuneiform, consisting of ten strong shafted and pointed feathers, the four middle ones black, the next partially white, the two exterior ones white, tinged at the tip with a brownish, burnt color; tail coverts black; whole lower side pure white; legs, feet and claws, light blue, the latter remarkably large and strong; inside of mouth, flesh colored; tongue pointed, beset with barbs and capable of being protruded more than an inch and a half; the oshyodes in this species, passes on each side of the neck, ascends the skull, passes down toward the nostril, and is wound round the bone of the right eye, which projects considerably more than the left, for its accomodation. The great mass of hairs that cover the nostril, appears to be designed as a projection to the front of the head, when the bird is engaged in digging holes into the wood."

This species, in common with two or three others of the family, is popularly credited with sucking the sap of fruit and ornamental trees, which, however, has been abundantly disproved, but not until the name *sapsucker* became a common appellation. If there had been any just ground for the ungracious charge, it should not fall upon this species, on account of

its unsocial habits, which mostly isolate it from the habitations of man, but upon its near relative, the Downy Woodpecker, which clings to the vicinity of our dwellings when they are surrounded with shrubbery and trees.

SPECIFIC CHARACTERS.

Head, back of neck, sides of back, wings, and central tail-feathers black; stripe above and below the eye, the lower extending up the side of the neck; stripe down the middle of back, side-feathers of tail, under parts and round spots in rows across the wings, white; the male having two bright red spots in the white stripes on the back of the head.

Length, 9; wings, 5; tail, 3.50; bill, 1.12; foot, 1.65.

Habitat. Middle portion of eastern portion of United States, from the Atlantic to the Great Plains.

DRYOBATES PUBESCENS (L.). (394.)

DOWNY WOODPECKER.

This seems to be but a small edition of the other *Dryobates* until we study his habits and characteristics somewhat attentively, when we find he is a better carpenter, cutting his hole into harder wood, leaving the entrance much more artistically finished, and in giving the first few inches of its descent into the tree, an inclination before it takes a perpendicular course for the remaining foot. The excavation is made abundantly capacious for the nest, and left as smoothly surfaced as if a carpenter of a higher genus had performed the work. And instead of dumping the chips at the entrance, he distributes them at sufficient distance from the tree to prevent any signs of house building for enemies to avail themselves of. In addition to these distinguishing traits, these birds are content to remain about the districts of their habitual dwelling places for nidification, and rearing their young. It is almost unparalleled amongst its own family for its strength, energy, diligence, perseverance, and absence of fear. The earliest I have succeeded in securing eggs has been about the 25th of May, but I believe it occasionally deposits them earlier. Late in fall, in winter, and in early spring, this species is much associated with the Titmice and Nuthatches in their rambles for food, both of which it usually leads in the hunt. In severe winter weather the whole group keep to the evergreen swamps very closely until it relaxes, when they make up time in the deciduous forests. On the whole, it is not quite as numerous as its near relative, but far more social.

Mr. Washburn found that species "exceedingly common, both in Otter Tail and Mille Lacs," while this "was not very common." Lumbermen in the uninhabited pineries become greatly attached to this woodpecker on account of its habit of following them in their work. Considerable numbers of them, associated with Nuthatches and Titmice, visit their camps almost daily. They are occasionally seen in the most central part of the city in March on sunny days. They were reported fairly common at Lanesboro in the severest part of the winter.

SPECIFIC CHARACTERS.

Above black, with a white band down the back; two white stripes on the side of the head; the lower of opposite sides always separated, the upper sometimes confluent on the nape; two stripes of black on the side of the head, the lower one not running into the forehead; beneath white; wing much spotted with white; the larger coverts with two series each; tertiaries or inner secondaries, all banded with white; two outer tail feathers white, with two bands of black at the end, third, white at the tip and externally. Male with red terminating the white-feathers on the nape; legs and feet bluish-green; claws light-blue, tipped with black; iris dark hazel.

Length, 6.25; wings, 3.75.

Habitat, northern and eastern North America.

PICOIDES ARCTICUS (SWAINSON). (400.)

ARCTIC THREE-TOED WOODPECKER.

This is not a common Woodpecker in any part of the State, but more nearly so in the Lake Superior, and northern pinery regions than the middle and southern districts. An occasional individual migrating somewhat southerly in winter, gets into the hands of collectors as far south as Minneapolis, as they are to be seen in the collections of the taxidermists in both St. Paul and Minneapolis, and have been ever since I have resided here. The only specimens which I have obtained have been one sent from Duluth*, and another from the pineries, somewhat east of Mille Lacs. They were both adult males. It has been said that this species exhibits a preference for swamps,

* Prof. W. W. Cook wrote me that he shot a female of this species May 23, 1881, near Detroit, in Becker county, which contained large, well developed ova. It was in a clump of dead pines that were full of holes.

Mr. Washburn secured a specimen at Mille Lacs. I hear that the eggs of this bird have been obtained recently in Mille Lacs, but have not seen them. Parties living in the vicinity of Princeton seem to think it not a very rare bird in the sandy, pine region, near that place, and that its habits in no way distinguish it from any other Woodpeckers. The markings however do, so that there is little reason to doubt its identity upon their description, I think.

but upon what authority I am unable to say. It is a well known characteristic of all the Woodpeckers remaining over winter, to resort to the thickets in the denser forests during the rigorous periods of winter, where they secure the most complete protection. But this does not constitute a specific characteristic habit. Many species in several different orders of birds do so, showing that it is not even a generic trait. So far as I have been able to learn, this bird affects dry and preferably elevated portions of coniferous forests. When collecting birds at Lake Tahoe, in the Sierra Nevada mountains, in April and May, 1870, at an elevation of nearly 8,000 feet, this woodpecker was rather a common species. Again, in the Cascade mountains, east of Portland, I met with it no less frequently last May. I have never heard its note, and know nothing of its special breeding habits.

SPECIFIC CHARACTERS.

Above entirely uniform glossy bluish-black; a square patch on the middle of the crown, saffron yellow and a few spots on the outer edges of both webs of the primary and secondary quills; beneath white on the sides of the breast, longitudinally striped, and on the sides of the belly and on the flanks and tibial region, banded transversely with black; a narrow concealed white line from the eye a short distance backward, and a white stripe from the extreme forehead (meeting anteriorly) under the eye, and down the sides of the neck; bristly feathers of the base of the bill brown; exposed portion of the two outer tail feathers (first and second) white; bill bluish black, and the lower mandible grayish-blue; iris bluish-black.

Length, 9.50; wing, 5; tail 3.85.

Habitat, northern North America from the Arctic regions south to the northern border of the United States; much further south in the western parts, embracing Nevada and California, along the mountain ranges.

PICOIDES AMERICANUS BREHM. (401.)

AMERICAN THREE-TOED WOODPECKER.

I enter this species upon rumor, having never had the bird in my own hands for identification. I am credibly informed that several specimens have been obtained on what is called "the north shore," that is of Lake Superior, a portion of the western extremity of which extends into Minnesota.

I presume that they have been reported, and have received a place in the proceedings of some eastern scientific journal which I have not seen, as they were obtained, I understand, for the museum of some institution of learning there. But the

fact that they have been obtained at a lower latitude in Wisconsin, adjoining us, and in Massachusetts, and that Richardson found them on that "north shore," I feel justified in this instance to record the species upon rumor. I have not the slightest doubt but what it belongs to our fauna, and that future observers will find it not very rare.

SPECIFIC CHARACTERS.

Black above; the back with transverse bands of white to the rump; a white line from behind the eye, widening on the nape, and a broader one under the eye from the loreal region, but not extending on the forehead; occiput and sides of the head uniform black; quills spotted on both webs with white; under parts white; the sides banded transversely with black; top of the head spotted with white; the crown of the male with a yellow patch; bill bluish black; iris dark hazel.

Length, 8 to 9; wing, 4.45 to 4.50; tail, 3.35 to 3.50.

Habitat, northern North America, from the arctic regions southward, in winter to the northern United States.

SPHYRAPICUS VARIUS (L.). (402.)

YELLOW-BELLIED SAPSUCKER.

This woodpecker is fairly common throughout the wooded districts, arriving from the first to the fifteenth of April. Those familiar with the species recognize its presence at once by its hammering or drumming of its strong bills on the larger limbs and trunks of partially dead trees. It is said to be a diversion of which they are peculiarly fond, and not as formerly supposed, the zealous effort of a hungry woodpecker to get a morsel to eat. Their note is exceptionally loud, spirited and distinct, but less voluble than some of the other species. Their food consists of larvæ buried underneath the outer bark of trees and insects of the smaller species, to which some add the sap of trees of various kinds. This latter habit may possibly be the case when they are more thirsty than hungry. A number of other species have been charged with destroying valuable trees by tapping them too extensively for food. The question has not yet been definitely settled and possibly may not be for a good while. My own observations have inclined me away from the sap-food theory.

They mate about the first of May and by the twentieth the nest has been excavated in the trunk of a large tree, perfectly sound or partially decayed, and from forty to sixty feet from the ground in many cases, but occasionally much lower. As a

general thing it is located on the southerly side and directly underneath a large limb, but not invariably so. Still I have never yet met with an instance of its being on the north side of the tree.

They seem to manifest no choice between the borders, or the interior of the forests, only that the tree chosen more commonly is one of considerable size. Both sexes participate in the excavation of the nest, which in a green or a very dry tree, is sometimes a tedious and prolonged undertaking. The workmanship in such cases is highly artistic, looking more as if a carpenter of a higher order and genus, with modern tools, had performed it. They lay four pure-white eggs. When the young come out, and have become considerably grown, they creep out onto the outside of the tree and larger branches daily until strong enough to fly, after which the whole family hunt together until about the 10th of October, when they move off southward to winter. That they sometimes rear a second brood in the same season seems almost certain, as I have found young birds as late as the fifth of October, and Mr. M. W. Vandenburg, of Fort Edward, N. Y., who was visiting this city in 1870, reported a young bird of this species on the 17th of that month. But this is certainly very exceptional.

Mr. Lewis found them one of the most common woodpeckers of Becker and Cass counties, breeding in June. Mr. Washburn reported them as *common* at Georgetown, about the first of August. Dr. Hvoslef mentions them as at Lanesboro, but does not speak of their relative frequency. Prof. Herrick found them at Lake Shetek, and Mr. Treganowan at Big Stone. But I was a little surprised that Mr. U. S. Grant, assistant of Prof. Winchell on the geological survey, did not find them in either St. Louis, Lake or Cook counties, in the northeastern portion of the state. His observations embraced the month of August, when if the species is represented there at all, they certainly must have fallen under his notice, as they were then moving about supposably in family groups of five or six, embracing parents and young.

Becker and Cass counties are nearly as far north as those where Mr. Grant made his valuable observations, so that the question of mere latitude gives no explanation for their absence. Besides, it is well known that "Sir John Richardson found it common in the fur countries," (N. A. Birds, p. 540,) very much further to the north. Kennicott makes no mention of them at the Lake of the Woods, although it was as late, when he was there, as the bird has been reported in the Saskatchewan.

SPECIFIC CHARACTERS.

Fourth quill longest; third a little shorter; first considerably shorter; general color above black, much variegated with white; feathers of the back and rump brownish-white, spotted with black; crown scarlet, bordered by black on the sides of the head and nape; a streak from above the eye, and another from the bristles of the bill, passing below the eye and into the yellowish of the belly, and a stripe along the edges of the wing coverts, white; a triangular broad spot of scarlet on the chin, bordered on each side by black stripes from the lower mandible, which meet behind and extend into a large quadrate spot on the breast; rest of under parts yellowish-white, streaked on the sides with black; inner web of inner tail-feather, white spotted with black; outer feathers black, edged and spotted with white. Female with the red of the throat replaced by white. Iris dark hazel.

Length, 8.25; wing, 4.75; tail, 3.30.

Habitat, North America, north and east of the Great Plains.

CEOPHLEUS PILEATUS (L.). (405.)

PILEATED WOODPECKER.

This is a magnificent bird as seen in his own haunts in the forest. I shall not soon forget the occasion, nor the scene which embraced the species as the central figure. It was a stirring, crisp, October morning in the heavy forest belt lying west of Minneapolis about twenty miles, where I was putting in a day amongst the Ruffed Grouse which then literally abounded there. My attention was at first arrested by a hammering that resembled that of the Woodpeckers except in its being so much louder. It was, however, so continuous that I determined to ascertain its source. I had a dog with me that was coursing unrestrained through the woods. He evidently had preceded me in an endeavor to investigate the source of the hammering, and at the moment of my decision, had flushed the bird, which came directly to a tree not more than twenty yards distant from where I was standing as still as a statue. It did not discover me, but in an attitude of suspense, and listening to the footfalls of the dog, which had now no idea of where it was, it gave me an exhibition of itself which Audubon would have gone to Halifax to see, in which it remained motionless, long enough to have been "taken with a slow plate," and in which I can never more forget him, notwithstanding having seen him many times since then in almost every other attitude possible to even a woodpecker. Presently the dog drew nearer, and then he began to prance around the trunk of the majestic

maple on which he had perched, in such a manner as to keep the tree between himself and the dog, which brought him successively into, and out of view, as the dog circled about us on the scent of grouse with his eyes and nose downward, in total forgetfulness of the woodpecker, which the latter did not fail to perceive. A finer study in natural history I never enjoyed, nor hope to, and it cost me a momentary severe struggle to draw trigger upon such a central figure in such a scene.

In those days of sporting and collecting combined, I enjoyed repeated opportunities for hearing their hammerings, and their sonorous notes, that were distinct a mile away, when there was no undue disturbance by the wind.

I never climbed to the hole in which the eggs are deposited, but I have utilized the climbing son of a farmer residing in the forest west of Minnetonka, who explored several for me from time to time. The hole is excavated out of the trunk of a dead, and partially decayed tree, and is usually about half a yard in depth, much larger at the bottom than at the entrance, and contains no materials except the chips of the excavation to a limited amount. Onto these are deposited the five to six, clear, large white eggs, which are brought out by the alternate incubation of the two birds. This nest is first entered about the first to the tenth of April.

The food of the Pileated Woodpeckers does not materially differ from that of other woodpeckers.

SPECIFIC CHARACTERS.

Fourth and fifth quills equal and longest, third intermediate between the sixth and seventh; bill blue black; general color of body, wings and tail, dull greenish-black; a narrow white streak from just above the eye to the occiput, a wider one from the nostril feathers (inclusive) under the eye and along the side of the head and neck; side of the breast, (concealed by the wing), axillaries under wing coverts, and concealed bases of all the quills, with chin, and beneath the head, white, tinged with sulphur yellow; entire crown, from the base of the bill to a well developed occipital crest, as also a patch on the ramus of the lower jaw, scarlet-red; a few white crescents on the sides of the body, and on the abdomen; iris very dark hazel. Female without the red on the cheek, and the anterior half of that on the top of the head, replaced by black.

Length, 18; wing, 9.50; tail, 7.

Habitat, formerly the whole wooded region of North America; now rare in all and extirpated in many.

MELANERPES ERYTHROCEPHALUS (L.). (406.)**RED-HEADED WOODPECKER.**

In the spring of 1869, I found these birds on the campus of the State University as early as March 14th, and from that time, an occasional one also in a cluster of burr oaks, (*Q. illicifolia*), on an elevated suburb of the city, until about the first of May, after which they came in greater numbers, and from the tenth to the fifteenth, constructed their nests. They cannot be called a numerous species here, although fairly represented in a good many sections. The date of their first arrival varies exceedingly in different years. From 1858 to the year before mentioned, no local records show them to have come earlier than the twentieth of April, and there was one year when none were seen until the twelfth of May, when they were simultaneously observed at every point with which I had correspondence. This unusual delay was not produced by the infelicity of the season, for it was not an exceptionally cold, or a specially late one. The cause remains a mystery to me.

About the twelfth of May they commence to excavate a hole in a tree, either in the neighborhood of dwellings or in the woods, as the case may require, in which labor the sexes engage with great industry and perseverance until the work is done. The hole is about half a yard in depth, and is larger at its extremity, from which to the entrance it is gradually tapered to the smallest capacity practicable for the entrance of the birds. It is without lining of any kind, except a few chips left by the carpenter, and in due time receives five or six very beautiful, clear white eggs. The surface of the eggs is remarkably polished—a characteristic common to the family, I think. The observation of young birds as late as the first of July gives a reasonable presumption that they rear two broods, but this may be from having been robbed of the first nest, or the extreme delay of the vernal migration.

Their habits are so well known that it seems useless to record them here. Like nearly all other members of the family they are under the charge of destroying trees by sucking their sap—the most imbecile slander which ever lived half so long. Their mouth parts have not a single adaptation to such a use as that of *sucking*, yet they may possibly eat the inner bark, or alburnum, in botanical parlance. Still, I do not believe they do even that, for the testimony of abundant observers worthy of our highest confidence is that the boring is

only incidental, and unavoidable to their destruction of insects which are the real destroyers of the trees, and whose work is usually charged to the woodpeckers. They cannot equally be defended against the charge of destroying fruit sometimes, but we can afford them a reasonable apology when we credit them with the destruction of so many of its worst enemies.

SPECIFIC CHARACTERS.

Head and neck all around crimson red, margined by a narrow crescent of black on the upper part of the breast; back, primary quills and tail bluish-black; under parts generally, a broad band across the middle of the wing, and the rump, white; iris hazel; bill and feet bluish-black.

Sexes alike.

Length, 9.75; wing, 5.50; (tail not given).

Habitat, United States, west to the Rocky mountains, stragglers reaching Salt Lake valley; rare, or local east of the Hudson river.

COLAPTES AURATUS (L.). (412.)

FLICKER.

At once the most abundant, and extensively distributed of all of the woodpeckers which visit Minnesota. It reaches us early in April, and remains until late in October, individuals lingering not altogether infrequently into November. The dates through a series of annual records give March 28th April 1st, 5th, 8th, 10th, &c.

I have heard rumors of individuals of this species having been seen at different times in the winter, but not sufficiently authenticated for unqualified acceptance. As I have known to be the case with several other even less hardy species, it is possible that a wound might have disabled the bird temporarily for its migratorial flight, and when able to endure it, find the winter upon it so fully as to intimidate it for the effort. It certainly is no place for such after the holidays. The places chosen for the nest may be on the whole a little more elevated, but otherwise their habits in no way differ from the others of its family.

The nests are constructed, and the full five to six pure white translucent eggs deposited by the 1st to the 10th of May.

None other bird of its entire order is so welcome, coming back among the earliest after the severe, prolonged, irksome winter has finally gone, with its cheery hurrah, the nearest expression to which I can formulate being in *hurric-ah, hur-*

ric-ah, hurric ah, repeated all the way from two or three, to seven or eight times in rather deliberate succession. But their common habits are too well known to require, or justify an attempt to describe them in a report which aims principally to establish identity, and *characteristic local* habits, more especially of less familiar species.

Sometimes they levy a modest toll upon the shocks and stacks of the farmer, and thus come under the shadow of his anathemas, but their destruction of insects and worms is too invaluable to bring them absolutely under his proscription.

SPECIFIC CHARACTERS.

Shafts, under surfaces of wings, and tail feathers, gamboge-yellow; a black patch on each cheek; a red crescent on the nape; throat, and stripe beneath the eye, pale lilac brown; back glossed with olivaceous green; a crescentic patch on the breast, and rounded spots on the belly, black; back and wing coverts with interrupted transverse bands of black; neck above and sides ashy; bill slender, depressed at base, compressed; culmen much curved; pointed, but not truncate; nostrils basal, medium, oval, exposed; feet large; tail long, exceeding the secondaries, feathers acuminate.

Length, 12.50; wing, 6.

Habitat, northern and eastern North America, west to the eastern slope of the Rocky Mountains and Alaska. Occasional on the Pacific slope from California northward.

Order MACROCHIRES.

Family CAPRIMULGIDÆ.

ANTROSTOMUS VOCIFERUS (WILSON). (417.)

WHIP-POOR-WILL.

This weird night-bird, so familiar and so dear to all who have listened to its song in childhood, reaches southern Minnesota generally about the first of May, and the latitude of Minneapolis about five days later. It seems to be rather local in its distribution, choosing high, dry land forests, bordering lakes, streams, low lands and swamps, where its peculiar forms of insect food presumably most abounds, which consists largely of nocturnal moths and mosquitoes. Characteristic as is its song, giving the bird its vernacular name as it does, when an attempt is made to formulate it in words ears hear it differently, so that instead of the time honored *whip-poor-will*, *whip-poor-will*, Langville hears *chick-koo-rhee*. If quite near the bird at the time of its vociferations we often hear a preceding "chuck" that is not included in either form of wording. About the tenth of May the two characteristic eggs are layed on the ground without any signs of a nest except a slight hollowing of the earth, usually near an old decaying log. The ground color varies greatly in the depth of its shade, but is rather of a creamy-white in most cases and marbled or mottled with scratches and blotches of light brown and lavender. The eggs are nearly elliptical, giving either end nearly the same form. The Whip-poor-will leaves us as a general thing about the 10th of September, sometimes (1873) as late as the 20th, or even later. It was still present in the vicinity of Lanesboro, Fillmore county, on the 8th of October, 1884, as reported by Dr. Hvoslef. When a small boy I lived two years near a piece of heavily timbered woodland through which ran a stream of water. This bird, with many of other species, occupied those

woods during the entire summer. Almost uniformly, as soon as it became dark, the Whip-poor-will came onto a log not more than twenty yards from the rear of the house and poured forth his song for an hour or two when he would disappear, or rather his notes would be discontinued until after midnight, then they would again ring out clear and sonorously until the day dawned. I frequently caught sight of him in the bright moonlight nights and a few times in the twilight before he began his half-sad, half-cheery melody. They are rarely seen in the day time and then only by accident. At such times I have uniformly found them sitting either upon the ground or on an old log but slightly elevated above it. They are then apparently very stupid and will allow one to approach quite near them before flying, and when they do it is but a short distance to where they will alight again. They are universally distributed in timber and brush land over the State.

SPECIFIC CHARACTERS.

Bill remarkably small with tubular nostrils and the gape with long, stiff bristles; wings long, somewhat rounded, second quill longest, the primaries emarginated; tail rounded; plumage loose and soft. Bristles without lateral filaments; top of head ashy-brown, longitudinally streaked with black; terminal half of the tail feathers (except the four central) dirty-white on both outer and inner webs; iris dark hazel. No white on the tail of the female.

Length, 10; wing, 6.50.

Habitat, eastern United States to the plains.

CHORDEILES VIRGINIANUS (GMELIN). (420.)

NIGHTHAWK.

A very remarkable circumstance connected with this species was its appearance in Fillmore county on April 5th, 1884, (Dr. Hvoslef) and its disappearance again until May 12th. The time of its arrival has varied considerably through all the years of my personal observation of its habits here, but in no instance have I retained a record of it before the 30th of April. As a general thing, I have found them here first about the 10th of May, and not unfrequently as late as the 20th. In the early history of the city where I reside, great numbers of the night-hawks could be seen at evening, or rather, beginning a little before sunset, and extending quite into the twilight, evidently feeding upon the abounding mosquitoes, which have become almost extinct in the city of late years. On warm, cloudy days,

a few of these peculiar birds may now be seen over the metropolis, between the first of June and the 20th of August, when they gather their young, now full plumaged, into flocks, and move off so openly that the final flight is not difficult to recognize.

Like its wonderful cousin, the Whip-poor-will, it builds no nest, and seems to care little where the spot may be chosen to deposit its two eggs, from an opening in the dense woods to the corner of the cornfield or the back-pasture. The eggs are dirty-white in color, and dotted all over with obsolete slate-color and spots of lavender. The male divides the sacrifices of incubation with the female.

In their search for food, which like the Swifts, is always on the wing, they may be seen rising to immense altitudes, where they course through the air in every direction, or descend to just above the tops of the loftiest forest trees, where they skim about, the very emblems of the grace of motion. During the mating and incubating season, the male has a habit of zigzagging his way upward to a considerable elevation, uttering a note which sounds like the syllable *scape*, slightly drawn out, and repeated about every three seconds, till he has attained his elevation, when he suddenly closes his wings, opens his capacious mouth, encircled with strong bristles, and head pointed directly downward, he descends with the velocity of a falling stone, to near the earth, producing a bellowing sound which culminates with a short, bold turn upward, from which, and his bat-like crepuscular habits, he obtains the inelegant cognomen, "Bull-bat," in the middle and southern states. Of general distribution throughout the state, they are quite restricted to localities, presumably determined by the kinds and quantities of their food.

Reports from local observers establish their fairly common numbers in the Red river valley and the Mille Lacs regions, according to F. L. Washburn's Report.

SPECIFIC CHARACTERS.

Above, greenish black, with but little mottling on the head and back; wing coverts varied with grayish; scapulars with yellowish-rufous; a nuchal band of fine gray mottling, behind which is another coarser one of rufous spots; a white V-shaped mark on the throat; behind this a collar of pale rufous blotches, and another on the breast of grayish mottling; under parts banded transversely with dull yellowish, or reddish-white and brown; wing quills quite uniformly brown; the five outer pri-

maries with a white blotch midway between the tip and carpal joint, not extending on the outer web of the outer quill; a terminal white patch. Female without the caudal white patch, and the throat mixed with reddish.

Length, 9.50; wing, 8.20.

Habitat, northern and eastern North America.

Family MICROPODIDÆ.

CHÆTURA PELAGICA (L.). (423).

CHIMNEY SWIFT.

The Chimney Swallow has long been as well represented by numbers as any other species relatively. They arrive from the 15th to the 20th of April, at first in rather limited numbers, as they are only the males, and at once select their gregarious quarters for perching and building their nests. The rapidity of their flight is such that there seems to be but a few hours difference in their appearance in all the localities systematically reported. They pair at once after the arrival of the females, and immediately commence building their very remarkable nests.

For several years in succession, a moderately large chimney in my own house was chosen by them for one district of the city, where they congregated in such numbers as only the appropriation of the whole length of a 55 foot chimney could have served. Becoming too numerous for their quarters the following year they selected a much larger one, devoted to ventilation, in a house heated by hot air, and never used for smoke, that was only a block distant. The second season it was occupied, the attention of great numbers of persons was called to their place of nightly rendezvous, and I undertook to register the number of arrivals at the mouth of the chimney from sunset until darkness made it no longer possible. To approximate the actual number which spent the night there, I had to keep a tally of all individuals which left the chimney, and deduct the number from those that entered. According to that computation, not less than 450 swallows, and unquestionably over 500, spent their nights there. It being late in August, it is supposable that the entire brood of the season might have been matured enough to have been included. But they are not sufficient for all of their hordes to be dependant upon chimnies, as near my summer residence on Lake Minnetonka, I found a like number quartered in a large hollow tree, in the

deep, dark forest which borders that beautiful lake. I apprehend that esthetics have much less to do with the question where the chimney swallows stay, than does the quality and quantity of their insect supply for consumption. The nest is a prodigy of strength and construction against the elements. It consists of bits of roots and dry twigs, effectually cemented together with an animal secretion of the salivary glands of the bird, and is glued with the same onto the side of the bricks. The eggs, four to five in number, are the purest of white. The departure of the species varies from September 1st to the 25th; the last record in 1886 was October 5th, which was unprecedented in their local history. They are reported from every part of the State as abundantly represented.

SPECIFIC CHARACTERS.

Tail short, slightly rounded, the shafts stiffened and extended some distance beyond the feathers in a rigid spine; first primary longest; legs covered by a naked skin, without any scutellæ or feathers; tarsus longer than middle toe; lateral toes equal, nearly as long as middle; hind toe scarcely versatile, or quite posterior, with the claw, less than the middle anterior without it; toes slender, claws moderate; feathers of the bill not extending beyond the beginning of the nostrils. Of a sooty brown all over except on the throat, which becomes considerably lighter from the breast to the bill; above with a greenish tinge; the rump a little paler.

Length, 5.25; wing, 5.10; tail, 2.15.

Habitat, Eastern North America.

Family TROCHILIDÆ.

TROCHILUS COLUBRIS (L.). (428).

RUBY-THROATED HUMMINGBIRD.

This is the only representative of the hummingbirds which even straggles into the State so far as I am aware. It arrives about the 20th of May,—somewhat earlier in an occasional season, and semi-occasionally even five days later, and begins at once to build its pigmy but beautiful nest, which, however, is not made completely ready for occupation until the first week in June. It is a marvel of bird architecture, consisting of vegetable down of different shades of color, mixed with fine scales of buds to make it firm, and elegantly overlaid with lichens, thus making it assimilate irregular growths of wood. It is usually saddled into a projecting limb of a bush, or shrub,

the last one I met being on a rosebush at the border of the main walk from the street into a neighbor's house. For the exposed situation, it was a little exceptional, but it contained two very tiny, translucent, pure-white eggs, the patent number for the species. Its habits are too well known, and characteristic, to require consideration, except that the species has evidently greatly increased in numbers since I first came to the country.

I have found it almost universally distributed, but much more numerous about the fields, gardens and dwellings, than in the wilder sections of the State. Individuals of the species linger occasionally far into October, as in one or two instances, they have made their appearance in April, and then disappeared again until the usual time for their arrival. The latest departure recorded by any correspondent was Sept. 22, 1884, by Dr. Hvoslef at Lanesboro.

SPECIFIC CHARACTERS.

Tail deeply forked, the feathers all narrow lanceolate acute; uniform metallic green above; a ruby-red gorget with no conspicuous ruff; a white collar on the throat; sides of body greenish.

Length, 3.25; wing, 1.60; tail, 1.25; bill, 0.65.

Habitat. eastern North America to the plains.

Order PASSERES.

Family TYRANNIDÆ.

TYRANNUS TYRANNUS (L.). (444.)

KINGBIRD.

Everywhere one may go in this State he is sure of seeing the kingbird, as he is abundantly represented in all sections from about the first of May until the tenth of September. A few occasionally linger a little later. The males arrive in spring some ten days before the females, in parties of five or six. The females come more numerous but more slyly. No time is to be lost after they arrive in this latitude, so that unions for the summer are hastily made, and the selection of a place where to build the nest at once commenced upon. This decided, which takes considerable time occasionally, the nest is soon made, both working at it constantly until completed. It is variously placed upon the wild plum trees, the corner of the log stable, in an alder, on a stump. It consists of twigs, roots, coarse grasses, mosses and weeds, and is lined with fine roots, grasses and horse hair. About the 28th of May the eggs are laid, and when the young birds open their five little mouths the parents have lively work to keep them supplied until able to secure food for themselves. The ground color of the eggs is a delicate creamy white, with irregular spots of various shades of brown and lavender.

The kingbird is a typical fly-catcher, seizing his food when on the wing, which of course consists mostly of insects in flight.

It has been remarked of this species, as of all the true fly-catchers, that it seems to have been their special mission to sieze only those insects which are in passage from one tree or shrub to another, while the task of taking those which are concealed in hidden places like the bark and foliage, is assigned

to the woodpeckers, warblers, &c. In capturing an insect, the kingbird dashes from his perch directly toward his game, till near it, when he hovers a moment before he takes it as if to decide whether it is the one he is looking for, but he generally decides very promptly that it is, and returns directly to his former perch, unless, as is often the case, his winged morsel has led him in a brief chase some distance from the former, when he will occupy another perch. His courage in attacking other birds, from a robin or a jay, to a crow, hawk or eagle, is without a peer among the birds of the country. The enemy seen, he "stays not on his going," but bends every muscle to the flight. When near his foe, he rises above him, and pounces down upon his devoted head, as if expecting to annihilate him. How much suffering he may be able to inflict, is a question, but certain it is his enemy acts as if he shared his brave aggressor's expectations, and turns and dives and dodges in all directions, until perhaps a mile away, the pugnacious little fellow leaves him with this practical hint that he need not come that way again, at least while the breeding season lasts that year.

He is the best of friends to the farmer and gardener, destroying countless numbers of insects especially prejudicial to those industries. His habit of taking the honey bees that come in his way, which has made him enemies among the bee-culturists, will need no special apology in Minnesota until honey has become a larger interest, and then the thinking will have conceded his value too well to make it necessary.

The kingbirds, already in their restricted families, gather into loose communities in the latter part of the summer, and mostly leave immediately after the frost appears, which diminishes their food supply to such an extent as to justify their departure to warmer climes in Mexico and Central America.

SPECIFIC CHARACTERS.

Two, sometimes three outer primaries abruptly attenuated at the end; second quill longest; third little shorter; first rather longer than fourth, or nearly equal. Tail slightly rounded; above dark bluish-ash; the top and sides of the head to beneath the eyes bluish-black; a concealed crest on the crown, vermillion in the centre, white behind and before, partially mixed with orange; lower parts pure white, tinged with pale bluish-ash on the sides of the throat and across the breast; sides of the breast and under the wings similar to but rather lighter than the back; axillaries pale grayish brown tipped with lighter; the wings dark brown, darkest towards

the ends of the quills; the greater coverts and quills edged with white, most so on the tertials; the lesser coverts edged with paler; upper tail coverts and upper surface of the tail glossy black, the latter very dark brown beneath; all the feathers tipped and the exterior margined externally with white, forming a conspicuous terminable band about twenty-five hundredths of an inch broad.

Length, 8.50; wing, 4.65; tail, 3.70; tarsus, 0.75.

Habitat, eastern North America from the British provinces south to Central and South America; rare west of the Rocky mountains.

MYIARCHUS CRINITUS (L.). (452).

CRESTED FLYCATCHER.

The Great Crested Flycatcher is a regular summer resident, arriving about the 10th of May. Although less abundant than the Kingbird it is very widely distributed where there is timber. I hear of their presence in nearly every section of the timbered regions which I have not been able to personally visit, and I have visited none where I could spend a day or two that I did not find him, and always under much the same circumstances.

The perching places, which have uniformly been in the near proximity to the nest, have been along the borders of rather tall timber adjoining a clearing more or less removed from thoroughfares and in the vicinity of lakes or streams.

The nests are almost uniformly in a hollow trunk or limb of a tall tree, about sixty feet from the ground. For some reason they seem to prefer the elm, but occasionally another species is selected. During the period of incubation, indeed I may say during the remainder of their local history, their habits have little to make them differ from the Kingbird. Their food is essentially the same and they retire in small parties about the first to the tenth of September. They show the same characteristic fighting qualities of the smaller cousin, but they do not seem to work quite as hard to get a set-to as he does.

Mr. Lewis found them as far north as Red lake and Mr. Washburn secured specimens at Thief river near Otter Tail lake. But they are perhaps a little more fully represented in the timbered sections bordering the streams and lakes of the southern counties of the State.

SPECIFIC CHARACTERS.

Head with a depressed crest; third quill longest, second and fourth little shorter; first a little longer than seventh, much shorter than sixth; tail decidedly rounded, or even graduated, the lateral feather about one-fourth of an inch shorter; upper parts dull greenish-olive, with the feathers of the crown, and to some extent of the back, showing their brown centres; upper tail coverts turning to pale, rusty-brown; small feathers at the base of the bill, ceres, sides of the head as high as the upper eyelid, sides of the neck, throat, and forepart of the breast, bluish ashy; the rest of the lower parts, including axillaries and lower wing coverts, bright sulphur-yellow; a pale ring around the eye; sides of the breast and body tinged with olivaceous; the wings brown, the first and second rows of coverts, with the secondary and tertial quills margined externally with dull-white, or on the latter slightly tinged with olivaceous yellow; primaries margined externally for more than half their length from the base with ferruginous, great portion of the inner webs of all the quills very pale ferruginous; the two middle tail feathers light brown, shafts paler; the rest have the outer web and a narrow line on the inner sides of the shaft brown, pale-olivaceous on the outer edge, the remainder ferruginous to the very tip; outer web of exterior feather dull brownish-yellow; feet black; bill dark brown above and at the tip below, paler towards the base. The female appears to have no brown on the inner webs of the quills along the shaft, or else it is confined chiefly to the outer feathers.

Length, 8.75; wing, 4.25; tail, 4.10; tarsus, 0.85 of an inch.

Habitat, eastern United States and Canada, west to the Plains, south through eastern Mexico to Costa Rica.

NOTE.—Since writing the foregoing I have had opportunity to observe this species more extensively, and I find them more uniformly distributed than I then anticipated. I have obtained the uniquely marked eggs within a mile of my residence. Their ground color is buff, of a rather exceptionally rich tone, over which is finely spattered light-brown very uniformly, embracing both extremities. Over this again are scattered more sparsely coarser dottings of a darker shade of brown, quite thickly near the larger end, and at the smaller; after which over all, are longitudinal scratches, the finer of which are irregularly parallel, and heaviest from the bulge of the egg backward, but not quite to the end. The scratching varies in intensity and in the degree of regularity in different specimens. The nest is composed of coarse grass, weeds, twigs, roots, and is lined with finer grasses and a few horse hairs. The eggs are laid the first week in June, generally, and occasionally a little earlier.

SAYORNIS PHEBE (LATHAM). (456.)

PHEBE.

This plain but very much esteemed bird reaches us about the first to the tenth of April. Dr. Hvoslef reports its arrival at Lanesboro on the 24th of March, and at different points in southern Minnesota it is recognized about the same date. It is as widely a distributed species as we have, and remains as long as its food supply holds out, which is generally about the 15th of October. Few birds are more thoroughly welcomed notwithstanding its lack of attractive feathers. Its disposition to cling to the approximate vicinities of our habitations, together with its plaintive notes, "*phebe-phebe*," in a subdued tone, somewhat drawn out at times, and again shortened into "*peweeet, peweeet*," rapidly repeated in a more joyous manner.

The females are some ten days or more behind the males in arriving, and the courtship is quite delayed, and undemonstrative. But they arrange family matters in some way so as to have the nest built about the first of May or a little before, when the season favors. Bridges are not as numerous in Minnesota as in Massachusetts, neither does our population in the rural districts disturb the bird by the numbers as much as there, yet true to its record in that country, it finds the bridge if there is one, but in its absence it accepts a great variety of places in which to build, notably the window caps under the porches of our summer cottages at the lakes, or in the open stables, or in a nook in the boat-house. Five eggs is usually the complement in a nest constructed of grasses, roots, moss and hairs, cemented together and onto the substance it is built upon, with bits of mud. It is lined with fine grasses, wool and feathers. The eggs are white with a creamy tint, Some eggs are thinly spotted over the larger end with reddish-brown.

Cottagers at Lake Minnetonka, or any other of our suburban lakes, become greatly attached to this humble representative of the birds that spend the summer in the groves and forest bordering them. The first of its kind to seek those lovely retirements, anticipating their arrival by several weeks, they seem to welcome their coming, and at once begin their preparation of their own comfortable tenements under the shelter of the projecting roof of the porches. Apparently the same pairs return, and repair the old nest from year to year. Many a time have I sat within a few yards of a nest built on the plate, under the roof of my Cosy Nook Cottage, overlook-

ing the most beautiful lake in the whole world, and listened to the unostentatious *pe-wee, pe-wee* of the Phœbe Bird for an hour at a time endeavoring to comprehend the lessons of its sweet contentment with its lot however so humble it be wherein consists all true human happiness.

SPECIFIC CHARACTERS.

Sides of breast and upper parts dull olive-brown, fading slightly towards the tail; top and sides of head dark brown; a few dull white feathers on the eyelids; lower parts dull yellowish-white, mixed with brown on the chin, and in some individuals across the breast; quills brown, the outer primary, secondaries, and tertials edged with dull white; in some individuals the greater faintly edged with dull white; tail brown, outer edge of lateral feather dull white, outer edges of rest like the back; tibiæ brown; bill and feet black; bill slender, edges nearly straight; tail rather broad and slightly forked, third quill longest, second and fourth nearly equal, the first shorter than the sixth.

Length, 7; wing, 3.42; tail, 3.30.

Habitat, eastern North America, from the British Provinces, south to eastern Mexico and Cuba, wintering from the South Atlantic and Gulf states southward.

CONTOPUS BOREALIS (SWAINSON). (459.)

OLIVE-SIDED FLYCATCHER.

In the spring of 1874, my son, Dr. R. W. Hatch, obtained the first specimen of this species in a grove of forest trees within two or three miles of the city. I have since found them quite numerous during the time of migration, but by no means so afterwards. They reach here about the first of May generally. I have once found them as early as April 26th, but in several years it has been from one week to ten days later when I caught my first glimpse of them, although in any case they might have been here some time before I saw them, for their habits make it necessary that they should be carefully sought in restricted localities. In the year following my son's discovery of the species, I obtained the nest and egg in a dry larch swamp near to where the bird had first been found, a spot since embraced in the beautiful Lakewood cemetery, on the shores and overlooking one of our peerless suburban lakes. The nest, very characteristic of the flycatchers, was constructed of much the same materials as is employed in the structure of the king-birds', and was placed on a horizontal limb of a medium sized larch, at least a yard from the trunk and about fifteen feet

above the ground. It contained five creamy-white eggs, spotted with two shades of reddish-brown, more pronounced about the larger end, and averaging in measurements, .85 by .65 of an inch. I omitted to say that the nest had but a very superficial excavation, leaving the form of the occupant very much as if squatted on, and not in it. Owing to the breeding habits taking them to such deep shade, these denizens of the forest are rarely seen by any but systematic observers who know something about them. I see no reason to doubt their uniform distribution over the timbered sections of the entire State, but it is not a little remarkable that they have never been reported to me from but one locality, and then by a little boy in the Big Woods, who sent me the bird and insisted that he could get the eggs for me, but he never did.

Their food in most respects, is like that of the other Fly-catchers, consisting largely of larvæ during the rearing of the young birds.

They leave the country in the autumn from the first to the tenth of September.

SPECIFIC CHARACTERS.

Wings long, much pointed; the second quill longest; the first longer than the third; tail deeply forked; tarsi short; the upper parts ashy-brown, showing darker brown centres of the feathers; this is eminently the case on the top of the head; the sides of the head and neck, of the breast and body, resembling the back, but with the edges of the feathers tinged with gray, leaving a darker central streak; the chin, throat, narrow line down the middle of the breast and body, abdomen, and lower tail coverts, white, or sometimes with a faint tinge of yellow; the lower tail coverts somewhat streaked with brown in the center; on each side of the rump, generally concealed by the wings is an elongated bunch of white silky feathers; the wings and tail a very dark brown, the former with the edges of the secondaries and tertials edged with dull white; the lower wing coverts and axillaries grayish-brown; the tips of the primaries and tail feathers rather paler; feet and upper mandibles black, lower mandible brown; the young of the year similar, but the color duller; the feet light-brown.

Length, 7.50; wing, 4.33; tail, 3.30; tarsus, 0.6.

Habitat, North America, breeding from the northern and the higher mountainous parts of the United States northward. In winter, south to Central America and Columbia.

CONTOPUS VIRENS (L.). (461.)**WOOD PEWEE.**

The Wood Pewee is a very common summer resident of all the wooded districts of the State, reaching the southern portions about the 10th of May, and a latitude of Minneapolis not far from the twentieth. Mating and nest building have generally taken place by the fifth of June in this immediate locality,

In a series of nests which I have taken, extending through many years, over nine-tenths have been found saddled upon an old, moss grown and decayed limb as originally described by Nuttall, the exception being in the forked twigs as mentioned by Gentry in his correspondence with Coues and found in his *Birds of the Northwest*, page 246. Of some 10 or 12 in my possession there is not a single one that is not well described by the former in the following words which I quote: "In a nest which I have before me, which can be taken as a type, the bulk of it is made up entirely of small stripes of liber plucked from the trees and fence rails, tow and wool, arranged in a circular manner, and pressed compactly together by the body of the bird. One of the most prominent features of the nest is its external coating of bluish-gray crustaceous lichens, of the kind that are found upon the trunks of the trees, which give it a very close resemblance to that of the humming bird, which it nearly rivals in symmetry and beauty."

It is almost uniformly placed on poplars in this locality, and elevated about twenty feet from the ground.

It is lined with finer samples of the same material as enters into the main structure. They usually have four eggs, of a beautiful cream color, with blotches and spots of lilac and brown around the larger end. I have never seen more than one brood in a season. Its resemblance in all respects to the Phoebe is a little remarkable. Notably it prefers the deep, dark woods, but I have often found it quite near dwellings, in clusters of poplars, as in a dooryard of a farmhouse near Minnehaha Falls, where I have observed it for upwards of twenty years. The note differs from that of the Phoebe considerably, being much more sad or plaintive.

Mr. Washburn, in his notes sent me from the Red river valley, says: "Extremely common in the woodland everywhere. One cannot walk a dozen rods in the timber without seeing several pairs. An interesting chapter might be written on the habits of this bird.

"Its note is the most characteristic sound in the woodland, and is best represented by the words *pee wee*, the two syllables about equally accented, the first perhaps a little higher, the last sometimes rising, sometimes falling, but always prolonged, always plaintive, as though the bird wished you to know that its particular lot was harder than that of any of its feathered friends, but it meant to make the best of it, and would try to be cheerful. I found young, almost full-grown, August 15th. The old birds at this season, perched on the dead limb of some lofty elm or oak, utter from time to time their plaintive note, making between times a hasty dash into the air to secure some flying insect, then fly back to the perch. On beautiful Autumn mornings, in woods of stately oaks, elms and poplars, where dim shades are penetrated by occasional patches of checkered sunlight, and whose silence was broken by the note of this species, I found young birds waiting on perches for their parent's return with some food, and filling the interim while she is foraging, with a plaintive squeak uttered at intervals, and sounding like the squeak of a mouse which has just felt the wire of the trap squeezing his throat, though louder; occasionally lowering their heads threateningly, and snapping their beaks when some butterfly or dragonfly flew near them. Or, impatient, they chase the mother bird, and one on either side strive to force the morsel she has obtained from her mouth.

"At Georgetown they were abundant; very common indeed at Ada, and I noticed them at Crookston, St. Vincent and along the Thief river."

Many writers attempt to express the notes of this bird, but I confess to a great inability to get what seems to me to be any material resemblance. Still, if they but partially succeed it may help to identify the bird, and I would not therefore discourage their attempts. Suffice it, who has heard Phoebe will recognize a member of the family. After the period of incubation and rearing the young is over, the old birds apparently are very seldom found together, a circumstance accounted for on the inference of conjugal indifference, which is entirely gratuitous, for the well known characteristic habit of feeding of the whole family explains the circumstances more satisfactorily and leaves the "good name" unstained. Whoever will take sufficient pains will always find the partner of the summer's sacrifices not very far away.

SPECIFIC CHARACTERS.

The second quill longest, the third a little shorter, the first shorter than the fourth, the latter nearly forty hundredths longer than the fifth; the primaries more than an inch longer than the secondaries; the upper parts, sides of the head, neck and breast, dark olivaceous-brown, the latter rather paler, the head darker; a narrow white ring around the eye; the lower parts pale yellowish, deepest on the abdomen; across the breast tinged with ash; this pale ash sometimes occupies the whole of the breast, and even occasionally extends up to the chin; it is also sometimes glossed with olivaceous; the wings and tail dark brown, generally deeper than in *S. fuscus*; two narrow bands across the wing, the outer edge of first primary, and the secondaries, and tertials dull white; the edges of the tail feathers like the back, the outer one scarcely lighter; upper mandible black, the lower yellow, but brown at the tip.

Length, 6.15; wing, 3.50; tail, 3.05.

Habitat, eastern North America to the plains, and from southern Canada southward.

EMPIDONAX FLAVIVENTRIS BAIRD. (463.)

YELLOW-BELLIED FLYCATCHER.

This pretty flycatcher, about which ornithological literature seems to be by no means prolific, has long been a regularly observed summer resident of the State, especially in this locality. It reaches the borders of the State in its spring migration as late as the 20th of May, and this locality on the 25th. The foliage of the forest has become so dense, and the other birds bearing a general resemblance to it so numerous, that only an expert may hope to identify it, and he only by considerable labor. Its efforts at song are very humble, not essaying more than a weak and quite infrequently repeated *pee-a*, and *tillic*. Others have found the nest occasionally, but I have been less fortunate even after much careful search. In his recent work on the birds in their favorite haunts, Rev. J. Hibbert Langille quotes from the observations of Messrs. Dean and Pardie as to the nest, in which those gentlemen say: "It was placed in the upturned roots of a tree; and a large dwelling it was for so small and trim a bird. Built in and on the black mud clinging to the roots, but two feet from the ground, the bulk of the nest was composed of dry moss, while the outside was faced with beautiful, fresh green mosses, thickest around the rim, or parapet. The eggs are usually four in number and are white."

My personal observations of the feeding habits of this bird differ a little from those generally given, in that I have found them in the very tops of the trees at such times, giving little heed to my presence so far below them. When on, or near the ground, they are extremely reticent and equally shy. The nest as repeatedly described to me by those who have discovered it, is from five to seven feet above the ground, on a branch at the first division from the trunk of a sapling, or in the forks of a considerable bush. At the time of their first arrival, I have found them almost common since knowing their habits, but they become very shy indeed when once the incubation has begun. They leave us simultaneously with the arrival of the frosts in autumn.

SPECIFIC CHARACTERS.

Second, third and fourth quill nearly equal; first intermediate between fifth and sixth; tail nearly even, slightly rounded; tarsi long, above bright olive-green; crown rather darker; a broad yellow ring around the eye; the sides of the head, neck, breast and body, and a band across the breast like the back, but lighter; the rest of the lower parts bright sulphur-yellow—no white or ashy anywhere on the body—quills dark brown; two bands on the wing formed by the tips of the primary and secondary coverts, the outer edge of the first primary and of the secondaries and tertials pale yellow or greenish-yellow; the tail feathers brown, with the exterior edges like the back. Bill dark brown above, yellow beneath; feet black. In the autumn the colors are purer, the yellow is deeper, and the markings on the wings of an ochry tint.

Length, 5.15; wing, 2.83; tail, 2.45.

Habitat, eastern North America to the plains, and from Southern Labrador south through Eastern Mexico to Panama, breeding from the Northern States northward.

EMPIDONAX ACADICUS (GMELIN). (465.)

ACADIAN FLYCATCHER.

I have been agreeably surprised to find that this species is fairly common in Minnesota. The average time of arrival has been May 20th, and they have habitually left in their southern migration about the 10th of September. The confounding of this species with *E. traillii* by so many experts early put me on my guard, and I believe I have always been spared a final doubt as to its identity. Prof. Baird's discrimination between these two species has been completely verified by my local observations. The nesting has been begun about the second week in June, although I have had the nest, mother, and

eggs as early as the fifth of that month on one occasion. As to the location of the nest, I have found it somewhat varied, as I have also the materials out of which it was constructed. The first I ever obtained was near a creek in a thicket just in the woods adjoining a plowed field, and but a short distance from a dwelling. It was on ground elevated at least 20 feet above the creek, and not more than 20 yards from a frequented highway. Another was obtained in a very open place in the deep, dark woods, two miles distant from the first. The first named nest met the description of what one writer describes as "loose and rustic, even raggedly woven, etc.," while the second was more compact and more firmly secured to the forked limb on which it was built. The materials have all been essentially the same, namely: Fine strips of bark, with grasses woven together, without much display of ambition in bird architecture. Careful measurements made the elevation of it average seven feet. The eggs have invariably been three, with a deep cream color, and mostly, but not always, spotted near the greater end with brown. I find no proclivity to any one kind of tree or bush, but they indiscriminately choose a sumach an oak or a basswood. It has a very humble combination of notes, hardly worthy to be called a song.

Dr. Hvoslef found it in the valley of the Root river on the 28th of May, and Mr. Washburn reports it common in the Red river valley at nearly all points he visited late in August.

SPECIFIC CHARACTERS.

Second and third quills longest, and about equal; the fourth a little shorter; the first about equal to the fifth, and about 0.35 of an inch less than the longest. Tail even. The upper parts with the sides of the head and neck, olive-green, the crown, very little if any darker. A yellowish-white ring around the eye. The sides of the body under the wings like the back, but fainter olive; a tinge of the same across the breast; the chin, throat and middle of the belly, white; the abdomen, lower tail and wing coverts, and sides of body not covered by the wings, pale greenish-yellow. Edges of the first primary, secondaries, and tertials, margined with dull yellowish-white, most broadly on the latter. Two transverse bands of pale yellowish across the wings formed by the tips of the secondary and primary coverts, succeeded by a brown one. Tail light brown, margined externally like the back. Upper mandible light brown above; pale yellow beneath. In autumn the lower parts are more yellow.

Length, 5.65 to 6; wing, 3.00; tail, 2.75; (tarsus, $\frac{2}{3}$; bill, $\frac{2}{3}$).

Habitat, Eastern United States, chiefly southward, west to the plains, south to Cuba and Costa Rica.

EMPIDONAX PUSILLUS TRAILLII (AUDUBON). (466a).

TRAILL'S FLYCATCHER.

Traill's Flycatcher usually arrives in the latitude of Minneapolis not far from the 20th of May, and is abundantly represented for its species for ten or fifteen days, when the principal part move on further north to breed. Individuals are occasionally met with so much later that if no nests had been obtained I should feel assured of their breeding in this section to some extent, but a few nests have been obtained by collectors, which upon examination I have pronounced those of this interesting bird. Mr. Lewis who is familiar with the habits of this species reports them common along the St. Louis and Rainy Lake rivers in the northern sections of the State during the months of June and July, from which although he collected no nests he naturally inferred they bred there. The nests I have seen were obtained under conditions corresponding to those described as characteristic of this bird, viz:—About swamps and lowlands and along streams, and were without exception found in the forks of bushes and saplings, and about seven to ten feet from the ground. They were composed externally of various fibrous materials mixed with grasses, giving them a bleached gray appearance, the inside of fine grass neatly adjusted, while there is a downy substance distributed throughout the entire structure. The eggs were creamy-white with the larger end somewhat spotted with reddish-brown. The autumnal migration takes place from the first to the tenth of September.

I am not a little surprised that Mr. Washburn did not meet this species in his earlier explorations of a portion of the Red river valley, as he made a careful observation of others of the same genus.

SPECIFIC CHARACTERS.

Third quill longest, second scarcely shorter than fourth, first shorter than fifth, about thirty-five hundredths of an inch shorter than the longest; primaries about seventy-five hundredths of an inch longer than secondaries; tail even; upper parts dark olive green, lighter under the wings, and duller and more tinged with ash on nape and sides of neck; center of the crown feathers brown; a pale yellowish-white ring (in some specimens altogether white) around the eye; loreal feathers mixed with white; chin and throat white; the breast and sides of throat light ash tinged with olive, its intensity varying with individuals, the former sometimes faintly tinged with olive; sides of the breast much like the back; middle of the belly

nearly white; sides of the belly, abdomen and the lower tail coverts sulphur yellow; the quills and tail feathers dark brown—as dark, if not more so, as these parts in *Contopus virens*; two olivaceous yellow white bands on the wing, formed by the tips of the first and second coverts, succeeded by a brown one; the edge of the first primary, and of secondaries and tertiaries a little lighter shade of the same; the outer edge of the tail feathers like the back, that of the lateral rather lighter; bill above dark brown, dull brownish beneath.

Length, 6 inches; wing, 2.90; tail, 2.60.

Habitat, eastern North America, breeding from the middle states northward; in winter south to Central America.

EMPIDONAX MINIMUS BAIRD. (467.)

LEAST FLYCATCHER.

The Least Flycatcher is the bravest of his genus, arriving in spring, in one year, as early as the fifth of May, but as a general thing it has been later by about five to ten days. It soon becomes common along the Mississippi, and the borders of swamps and low lands generally. During June, July and part of August it may be seen at almost any time of the day perching on the lower limb of a tall tree, peeping its characteristic note, variously expressed by different observers as “chebec,” “sewick,” “shebick,” etc., etc. It must be heard to be understood. It is uttered rather sharper and more quickly than any notes of the other Flycatchers. From its perch it makes frequent dashes into the air, where it seizes an insect and returns to the same place, repeating at brief intervals its short, sharp, unmelodious “chebeck.” There is a general distribution of this species over the entire State, from Duluth, where I found it exceedingly common, to the Red river, and south to the borders where it is no less common. Dr. Hvoslef records it in Root river valley, and Mr. Lewis found it common along the Rainy Lake river to the Lake of the Woods, where it was “abundant on the islands.”

Mr. Washburn found it still represented on the Red river as late as about the first of September, but rare. Dr. Coues gives it as more numerous along that stream during the breeding season than he had found it any where else. (Birds of the northwest pp. 254-5). I have known them to begin to build their nests as early as the 18th of May, but that is about a week sooner than the average. It is almost uniformly placed in the forks of a sapling,—rarely in a bush, except when found along the shores of streams running through marshy dis-

tricts, where only brush and shrubs are found,—and from ten to fifteen feet from the ground where there are trees, and rarely below seven where there are only bushes. It is very compact, neat, and externally constructed of wood and weed bark fibers, mixed with vegetable down in an artistic manner, and lined with delicate fibers of the same in which the down is prominent, and rarely a few hairs from the tails of horses and cattle. In a few instances it has been placed on the upper side of a leaning sapling, and in such cases it has never been saddled over, or across it, but has been embraced in forks of twigs or limbs rising from it and deeply imbedded in the sides of it. The eggs are from three to four, in number, and are pure white.

It lingers later into the autumn than the other members of its genus, individuals not infrequently being met late in October, but the great southern hegira occurs from the 20th to the 30th of September.

SPECIFIC CHARACTERS.

Second quill longest, third and fourth but little shorter, fifth a little less, first intermediate between fifth and sixth; tail even; above olive-brown, darker on the head, becoming paler on the rump, and upper tail coverts; the middle of the back most strongly olivaceous; the nape (in some individuals) and sides of head tinged with ash; a ring around the eye, and some of the loreal feathers, white; the sides of the throat, and across the breast, dull ash; the color on the latter sometimes nearly obsolete; sides of the breast similiar to the back, but of a lighter tint; middle of the belly very pale yellowish-white, turning to pale sulphur on the sides of the belly, abdomen, and lower tail coverts; wings brown; two narrow white bands on the wing formed by the tips of the first and second coverts, succeeded by one of brown; the edge of the first primary, and of the secondaries and tertials white; tail rather lighter brown, edged externally like the back; feathers narrow, not acuminate, with the ends rather blunt. In autumn the white parts are strongly tinged with yellow.

Length, 5 to 5.50 inches; wing, 2.65 or less; tail, 2.25 to 2.50.

Habitat, eastern North America, south in winter to Central America, breeds from the northern states northward.

Family ALAUDIDÆ.

OTOCORIS ALPESTRIS PRATICOLA HENSHAW. (4746.)

PRAIRIE HORNED LARK.

This bird is variously called the Prairie Lark, Shore Lark, Sky Lark, and Horned Lark. Its characteristic locality would scarcely justify the name of Shore Lark, as it is decidedly a dry land bird. Either of the others would not be inappropriate. But the two pencils of erectile feathers so located on the head as to completely simulate horns, are so distinguishing as to justly entitle it to the name Horned Lark. This species is extensively distributed over the entire open sections of the Northwest, from Hudson's Bay to and below the southern line of Missouri, and from New York to California.

Variations in size and the intensity of coloration have led some ornithologists to the institution of several *varieties*. I have met with individual representations of the whole series within my province so many times that I have no use for these varieties, even *cum salis*.

It nests very early, in the latitude of Minneapolis and St. Paul. In favorable seasons I have met with nests as early as the 9th of March, as I once flushed it from its nest at that date, although it contained no eggs; but a week later I have met with several with, on an average, two eggs. They sit so close at such times that I have had my carriage wheel pass within ten inches of the nest and not flush the bird. On one occasion, on the open, rolling prairie, while walking cautiously in search of possible nests, I had placed my foot directly over one, in the act of putting it down, when the lark flitted out from under it just in time to save itself, and the nest too, as the surprise lengthened the falling step far enough to save the latter. In all instances I have found that the ground had been hollowed out for the nest to a depth sufficient to allow of a liberal lining of grass and still leave the back of the brooding bird level with the surrounding surface. Its colors, with this circumstance, combine to protect the bird with its precious trust from the rapacious hawks as well as the more rapacious owl. That this species breeds occasionally three times I am confident. The period of incubation reaches far into July occasionally.

Some individuals are to be seen at almost any time in the winter, during an open "spell of weather," which is not a common meteorological event, by the way, and the great winter

retreat for the rest cannot be exceedingly remote, for, if the furrows in the plowed fields become exposed by the directness of the winter's sun, it will not be long before the cheery notes of the males are heard here. The eggs, four to five in number, are grayish and sprinkled with pale blue or brownish spots. I think the young abandon the nest before quite able to fly, and are left to shift for themselves when about three weeks out of their nests. Little time is lost by the parents in getting another brood under way, that the last may be sufficiently matured for the winter's exigencies.

I never heard the European skylark sing with my own ears, but have listened to descriptions of the song in prose and in poetry, until I almost believed I had heard it, but I must hear the veritable singer himself to be convinced that in anything except perhaps volume he can a whit excel our own American skylark.

My first enchantment occurred within the corporate limits of this city—Minneapolis—when those limits were quite restricted compared with them now, in June, 1868. I was riding along with my field glass in my hand, as has been my uniform custom in the bird season for thirty years or more, when a male flitted up from the ground about ten to fifteen feet into the air and about thirty yards directly in front of me, simultaneously bursting forth into song. While pouring forth such a volume that it seemed as if he would have instantly burst if he should close his extended mouth, he turned abruptly to the right and half sailing away about fifty yards, again wheeled with a rapid flutter of his wings that lifted him some thirty feet more, he gyrated back at least a hundred yards, and thus flitting, sailing, singing, he zigzagged right and left, mounting constantly higher and higher, never pausing a moment for breath until he entirely disappeared from unaided vision in as clear a sky as ever canopied the green fields in June. Still, the music, fainter and fainter, but if possible sweeter and sweeter, was distinctly audible, and my breath had been unconsciously suspended while all consciousness was in the tips of my ears and points of my eyes, now peering through the glass, when, after several minutes of unmeasured time, his song suddenly ceased and he closed his wings as a diver lays down his arms to his sides, and head straight downward, descended with the velocity of a spent bullet, until within a single yard of the ground, and no more than that distance from the identical spot he had left, he opened those wings and touched the grass as lightly as a snowflake unannoyed by the winds.

The song cannot be expressed by any similation of words or syllables, but is totally unlike any other amongst the song-birds. With such a possibility within the reach of any song-loving mortal, who would spend the last dime to hear a Nilsson, and would not go a mile in the open, silent prairie, to hear this peerless skylark? I pronounce an inexplicable paradox.

Heaven's richest boon to æsthetic man are oftenest overlooked or underheard. Awake, dear sleepers!

NOTE. The foregoing was written in 1874, at which time I was not aware that anyone else had ever recorded observations of its skylark like performances. I have been greatly delighted to find that Langille has given a graphic description of them in his "Birds in Their Haunts," page 18.

SPECIFIC CHARACTERS.

Above, pinkish brown, feathers of back streaked with dusky; a broad band across the crown extending backwards along the lateral tufts; a crescentic patch from bill below the eye, and along the side of the head; a jugular crescent, and the tail feathers black, the innermost of the latter like the back; a frontal band extending backwards over the eye, under parts, with outer edge of wings, and tail, white; chin and throat, yellow.

Length, 7.75; wing, 4.50; tail, 3.25; bill, above, 0.52.

Habitat, northeastern North America.

Family CORVIDÆ.

PICA PICA HUDSONICA (SABINE). (475.)

AMERICAN MAGPIE.

The Magpie has not yet become as common as the Blue Jay in Minnesota, but they are here and no check list can leave them out. Since the first that came under my notice in 1869, which was obtained in the timber of the Minnesota river bottom, there have been but few seasons when they were not seen by those competent to identify them, and several have been obtained.

Mr. Washburn reported one at Mille Lacs lake last fall, and several were described to me by parties who had never seen them before.

That this rather rare species should have escaped the notice of early observers is by no means surprising, for when isolated from the flock individual birds of this species are as alert and cunning as any other with which I ever had anything to do.

When hunted, their *sub rosa* vigilance in eluding the eye of the persecutor is simply marvelous, in many respects like, but outdoing the Cuckoo. In flocks, except after having been repeatedly disturbed by being shot at they are quite the opposite, and even become quite familiar after a time.

I once spent some eighteen months where the Magpies were very numerous and bred abundantly on low branching oak trees that were scattered amongst the hills. The nests, for the size of the bird were extremely bulky, consisting of sticks, twigs and mud, in the order named. "On this again is a lining of fine twigs, hair, feathers and any proper material which they can find. Over the whole, rising from the walls of the nest, is a dome of twigs and sticks very ingeniously and securely woven together and framing a shelter for the bird while setting. There are two openings, opposite each other, evidently to make room for the long tail of the bird, which could never be brought within the nest. The eggs are five, of a pale greenish, very thickly obscured with spots and dashes of pale purplish-brown, varying somewhat in intensity and being somewhat thicker at the larger end." I have quoted the description from *Birds of the Northwest*, pp. 213-14, for the reason that it is so completely in accordance with my own observations in the foot-hills along the Cosumnes river in Sacramento county, California, where my sister so long resided.

NOTE.—When the foregoing was written, I followed Coues' opinion that the Yellow-billed Magpies of that coast were but a variety of the present species, but not without mental protest (often expressed amongst local friends) which the American Ornithologist's Union have confirmed in the Check List. I have never seen the nest of the Black-billed Magpie, and had supposed that the identity of the structures had been an important factor in determining the specific unity of the two varieties, P. L. H.

SPECIFIC CHARACTERS.

Tail very long more than half the total length, the feathers much graduated, the lateral scarcely more than half the middle. First primary falcate, curved, and attenuated; bill about as high as broad at the base; the culmen and gonys much curved, and about equal; the bristly feathers reaching nearly to the middle of the bill; nostrils nearly circular; tarsi very long, middle toe scarcely more than two thirds its length. A patch of naked skin beneath and behind the eye and the bill black. General color black; the belly, scapulars, and inner webs of the primaries, white; hind part of back grayish; exposed portion of the tail feathers glossy-green, tinged with purple and

violet near the end; wings glossed with green; secondaries and tertials with blue; throat feathers spotted with white.

Length, 19; wing, 8.50; tail, 11 to 13.

Habitat, northern and western North America.

CYANOCITTA CRISTATA (L.). (477.)

BLUE JAY.

Nature has shown her caprice in dressing up even a crow in regal plumage in the case of the Blue Jay. In few others of the birds has there been such a wondrously beautiful display of the colors where blue is predominant. The arrangement is without a precedent. Still he is without friends. Go where we may a deep seated prejudice exists against him, and he seems to rather enjoy this distinction. The numbers in every low timbered, or brushy section in Minnesota, are greater than in any other portion of the United States with which I am familiarly acquainted, and they are yearly increasing. They brave the winter with entire indifference to the measure of cold, and never are known to come out poor in the spring either. They live on anything and everything known to be eaten by any and all the other species of birds, mammals, reptiles or fishes, when pressed by any stress, but are epicures when plenty abounds, taking such dainty tit-bits as Canary brains, and Mockingbird's eyes for an occasional dessert. Still in justice to him I must say that he takes such as he can get with no complaining as to quantity, or quality. In winter he breakfasts on acorns perhaps, dines on cedar berries and barberry. If the wind is troublesome, he will look up a few cocoons of moths, and butterflies for tea. In the spring he explores the back yards of dwellings, and if unsuccessful, will content himself with a light cropful of the buds of the lilacs and other shrubbery. Later, his supplies are well understood to embrace the eggs and young of the other birds, not even excepting those of his own species.

Their notes are often very discordant, and doubtless contribute to the popular prejudice against them. More commonly the notes are a shrill cry, expressed best by the syllables, *chay-chay-chay*, repeated in frequency according with the measure of excitement the bird is under. Under ordinary circumstances his notes may vary considerably, when they might be rendered somewhat like *hilly, hilly, hilly*, or *p'wilhilly, p'wilhilly*, followed in a minute afterwards by *hweeo-hweeo-hweeo*, or *chillac-chillac-chillac*, after which comes a soft, sweet, metallic note, filled with a sad pathos.

Not unfrequently he will give a stirring note of alarm if he discovers an enemy approaching, which resembles the harsh rattle of the kingfisher. He is credited with imitating other birds. With how much truth I cannot say, but if he does not, it will be about the only mischievous thing he does not essay to do.

About the last week in April he builds his nest in a second growth red or black oak in a thicket, or a large bush about seven feet from the ground. It is loosely built of small sticks, twigs, and coarse roots, lined with a finer kind of the same, and leaves. Four to five light-green eggs are laid, covered with light brown spots. Instances occur in which two broods are brought out in a season, but only one is the rule.

In no portion of the State where timber or brush are found, is he not to be found from the Lake of the Woods to the Iowa line. I cannot call them beneficial to agriculture, but should be sorry to pass a long Minnesota winter without both seeing and hearing them, as they have been so long identified with the bird life of the country.

NOTE. The vicious habit of this species of eating the eggs of its own, and of the other birds, has become more and more evident as I have had further opportunities to observe. In this, however, he has the precedent of so many other species, that he can with plausibility plead as good reason for justification as the rumseller, who sells his "liquid death" because, if he did not, "the other fellow would." My indignation has been at white heat on catching him at the destruction of the eggs of some of the little fellows that were no match for him. So widely is his character known amongst the feathered tribes of his habitudes, that there has come to exist an unwritten edict of outlawry against him, so that when he is caught in the act of trespass, a recognized signal-call will enlist the entire denizens of his section in a simultaneous pursuit of him. But he soon disregards, or wilfully forgets all such protests, and renews his inglorious depredations upon the earliest opportunity. I have never witnessed his destruction of the young birds, as I have the butcher birds but am prepared to believe almost anything I may hear against him. As with instances among another species of bipeds, neither talents nor external adornment shields them from common contempt. Still, as with some bad boys, we cannot but like them notwithstanding all their faults, when we hear the cheery notes amid all the desolations of a northern winter. The question of the jay's powers of mimicry of the notes of numerous other birds, has long been at rest with me, for I am an eye and an ear witness. His most wonderful, and most successful demonstrations have been in imitating very small birds like the Chickadee, Pewee, Winter Wren, several of

the sparrows, and indeed almost every known species of the kind, whose combinations are not very long. It must be understood that these performances are invariably *en suttu voce*, and audible to only those who are embraced in his auditorium by chances of fortuitous accident, which keeps the performer in blissful ignorance of his presence. My first opportunity transpired by my being placed in the covert of a fallen tree-top, to which the leaves were still clinging, before daylight in the morning to await a band of deer that were to be driven near there by a party of drivers acquainted with their "runs." I had been there nearly two hours in almost breathless silence, scarcely moving a muscle lest I might be discovered and while thus waiting numerous birds had been twittering and flying about the spot of my concealment ever since the daylight had come, amongst which were many Blue Jays. Now, any experienced hunter knows that if one of these irrepressible jays catches sight of him, his chances of a shot at a deer that is anywhere near him are gone for that time, and having just before received a preconcerted signal that some were approaching, my attention was centered upon a number of these birds but a little distance from me, ready to rob me of the fruits and considerations of my mutual sacrifices, when I saw and heard such a mimicry of many of the little birds before mentioned as no language can describe. Only one individual was engaged, and the notes which fell in showers like dewdrops, almost inaudible, were among the clearest, most delicate, sweet and melodious that ever found their way into a human ear. I was in an ecstasy of wonder and surprise, and only sighed in silence that every lover of bird-song could not share my delight. I forgave him everything I had ever seen, heard, or surmised against him, and have never since harbored any but the kindest feelings toward him. If a diet upon canary brains and mocking bird's eyes afford such inspiration, these songsters contribute as much in their deaths as in their lives, and the regally plumed Blue Jay should live forever. Since then I have his secret, and I have many times been his auditor undiscovered, and I have found that when undiscovered, he will prolong these solo performances considerable, constantly varying and modulating them in the most pleasing manner.

SPECIFIC CHARACTERS.

Crest about one-third longer than the bill; tail graduated; general color above light purplish-blue; wings and tail feathers ultramarine-blue; the secondaries and tertials, the greater wing coverts and the exposed surface of the tail sharply banded with black and broadly tipped with white, except on the central tail feathers; beneath white; tinged with purplish-blue on the throat and with bluish-brown on the sides; a black crescent on the forepart of the breast, the horns passing forwards and connecting with a half collar on the back of the

neck; a narrow frontal line and loreal region black; feathers on the base of the bill blue like the crown; female rather duller in color and a little smaller.

Length, 12.25; wing, 5.65; tail, 5.75.

Habitat, eastern North America to the plains and from the fur countries south to Florida and eastern Texas.

PERISOREUS CANADENSIS (L.). (484).

CANADA JAY.

When I first lived in the State the lumbermen used to tell me a great deal about "the camp bird" as they called it, and my curiosity was no little awakened to learn the identity of the bird but I could persuade none of them to bring me one, as their attachment to it forbid their shooting it, for it was so unsuspecting and tame that it would often come to the door of the cabin and eat the waste and crumbs thrown down to it. At last a good fortune sent one to me and I at once discovered the genuine Canada Jay. It is not a numerous species like the Blue Jay but is a permanent resident along the Lake Superior region and southward about a hundred miles, as I learn from the aforementioned source. It has fallen into my hands in the Big Woods on two occasions, and one or two individuals have been obtained in Sherburne county some time since. Of its habits I know nothing from personal observation, and must, therefore, avail myself of the observations of others. I quote Professor Samuels in his *Birds of New England*, page 367. He says:—"I have had numerous opportunities for observing its habits and I can positively affirm that it is equally rapacious and destructive with the Blue Jay, which it resembles in motions and cry. I once knew of a single pair of these birds destroying the young in four nests of the common Snowbird (*Junco hyemalis*) in a single day. I found these nests in an old abandoned lumber road on the morning of June 20th; in the afternoon, when I returned through the same path, every nest was depopulated, and a pair of these jays were lurking in the trees shouting defiance to us while surrounded by the afflicted Snowbirds that were uttering their cries of complaint and sorrow. I emptied both barrels of my gun in the direction of the jay, and I am inclined to think that they have killed no birds since. The familiarity with which this species fraternizes with man in the woods is interesting and amusing. I was once 'snowed in,' as the expression is, in a large tract of forest, and, with my companions, was obliged to wait until the storm

ceased before we could resume our march. We remained in camp two days. A pair of these birds, probably with young in the neighborhood, visited our camp and even penetrated into our tent for crumbs and pieces of bread. They always flew off with their mouths full and soon returned for more. Their visits soon got to be anything but a joke, particularly when they flew off with the last piece of our soap." Audubon says:—"It begins as early as February or March to form its nest which is placed in the thickest part of a fir tree, near the trunk, and at a height of from five to ten feet. The exterior is composed of dry twigs with moss and grass and the interior, which is flat, is formed of fibrous roots. The eggs, which are four to six, are of a light gray color faintly marked with brown.

SPECIFIC CHARACTERS.

Tail graduated; lateral feathers about one inch shortest. Wings a little shorter than the tail. Head, neck and forepart of breast, white. A plumbeous nuchal patch, becoming darker behind, from the middle of the crown to the back, from which it is separated by an interrupted, whitish collar. Rest of upper parts ashy-plumbeous; the outer primaries margined; the secondaries, tertials, and tail feathers obscurely tipped, with white beneath smoky-gray; crissum, whitish; bill and feet, black.

Length, 10.70; wing, 5.75; tail, 6.00; tarsus, 1.40.

Habitat, northern New England, Michigan, Minnesota, and Canada, northward to Arctic America.

CORVUS CORAX SINUATUS (WAGLER). (486.)

AMERICAN RAVEN.

This bird is a permanent resident about Lake Superior, and is common along the Red river and some of the more infrequented lakes in the northern portions of the state in summer time, arriving quite early in March, and remaining very late in the autumn. It is more frequently seen singly, yet occasionally a pair will attract the attention floating on extended wings for hours over some desolate section in search of food which is preferably carrion, but there is nothing, either dead or alive, they will not eat when pressed by hunger. Their flight is rapid and long sustained. On the ground they have a very dignified walk, with a characteristic of frequently opening the wings as if it wearied them to retain them closed. It breeds in the localities mentioned, quite early in the season. The earliest I have any authentic record of is March 25th. The

nests are exceedingly rude, and either on the inaccessible cliffs, or in the loftiest trees of some very desolate section. The eggs are usually four to six in number, two inches long, light greenish blue, with light purple and yellowish-brown blotches numerous about the larger end. Incubation lasts about twenty-one days, and the young remain in the nest several weeks before they are able to fly, fed at first on the half digested food disgorged by the parents. Only a single brood is reared in one season.

The raven is a much more common bird in northern and western Minnesota than I formerly supposed, but is nowhere so abundant as along the Pacific in the valleys of California and Oregon. By the twenty fifth of March in most years, they are often heard, but less frequently seen. Indeed they are rarely seen in the vicinity of Minneapolis and St. Paul, but from Bigstone lake to the British Possessions they seem to become increasingly common.

SPECIFIC CHARACTERS.

Bill long, very strong and arched; nasal feathers lengthened, reach middle of bill; nostrils large, circular, and overhung by membrane; gape without bristles; wings long and pointed, when closed reach nearly to tip of tail, and far beyond under coverts; fourth quill longest; third and fifth about equal; second between fifth and sixth; first nearly equal to eighth; tail short and nearly even; tarsi longer than middle toe, and scaled in front.

Length, 25 inches; wing, 17; tail, 10.

Habitat, North America from arctic regions to Guatemala, but local and not common east of the Mississippi river.

CORVUS AMERICANUS AUDUBON. (488.)

AMERICAN CROW.

I find the Crow a much more common species than my earlier observations had led me to expect. It is generally distributed, yet not at all equally so. It is fairly common in Fillmore county, and along the whole southern tier of counties, but the numbers grow relatively less until reaching about the middle, and especially until the great timber belt is reached. From thence northward there is an increase, so that in Otter Tail county thence eastward and northward their numbers are greatly augmented, even to the Lake of the Woods, where I learn they breed abundantly, Dr. J. C. Hvoslef of Lanesboro in Fillmore county through which the Root river runs, writes

me that "the crow is a resident in the deep valley of the Root river even in the severest winters." In his immediate locality they are "common, feeding about the slaughter houses."

Mr. Washburn, who spent from July 28th to September 12th in the valley of the Red river in the interests of the survey says: "I am rather puzzled to account for the actions of the crow in this part of the country. I did not meet with them until I reached Ada, and then I saw but a few, flying high in the air. I was told at Georgetown, however, fifteen miles north of Moorhead, that they are common in the spring. And I was told too that they are seen at Ada in June when other birds are nesting, but my informant had never seen a nest. As autumn approached however, and my journey took me farther northward, I met them more frequently.

"The Crow is certainly more common in the northern part of the valley than further south. I have learned that this bird breeds plentifully about the lakes of Otter Tail county, and in immense numbers in the country about Mille Lacs lake, where there is more or less pine. I assume that they find in the pine sections, conditions more favorable for nesting than near the Red river, and that accounts for their scarcity during July and part of August; whereas, later in the season, when the young crows can fly long distances, and when a change of food is desirable, they flock upon the low land of the valley. In September, I observed large flocks of them near the track, north and south of Crookston, and in riding across the country I met them in large numbers on the meadow lands, catching and eating young frogs, which are exceedingly abundant here this season."

The farmers are close observers of this bird, and have a practical knowledge of some of his more interesting habits. I can't say quite so much for him in his defense, but I think a charitable apology by recognizing how he was brought up, and acknowledging his services in the destruction of noxious ground larvæ, are due before exterminating him altogether. Like his regal cousin, the raven, he is a shrewd fellow, and appreciates a joke as well as almost any other member of his numerous family. A farmer in the Sacramento valley, California, found that the crow could count up to three with infallible certainty, but four was too much for him, and he settled it in this wise. Immense flocks of them were interested in the botany of his cornfield, and did not replant his corn shoots after examining the fibrous roots, and he was thoroughly mad

about it. He undertook to shoot them indiscriminately, "guilty or not guilty." But they were too shrewd for him, as some one or more on guard would give a warning note, just as he had got nearly ready to give them a broadside of double B shot. An unused shanty stood in the center of the field, and as he could always approach them much more nearly when with no gun, he arose very early in the morning, before daylight, and put his double-barrelled gun in there and returned home. After his breakfast was over, he walked very deliberately across the field and into his shanty with very little attention from the crows.

Lighting his pipe, he sat down to let them forget his going in there, and after waiting some time he peeped out of a hole to see if they had not resumed their *botanical investigations*, as he facetiously called their depredations. To his surprise, not a crow was to be seen on his corn, but they were all perched at respectful distances watching the shanty. He staid until noon in vain, and went to his dinner thinking how he was to deceive them. A thought struck him. So after dinner he took one of his hired men with him into the shanty, and after staying awhile sent him out to his work in another part of the farm, and waited for the crows, believing the departure of the man would throw them off their guard, but all in vain. The next day he took two men in, and after a short time one went away, and a while after the second followed, and he thought "now I surely will beat them," but not a crow came, till discouraged he went home. Thinking the matter over in the night he decided that as he had begun on that line he would see how many the crows could count, and in the morning called in one more man. One after another took their departure, the last one wearing away an outside garment he had worn in himself. To his great delight, very soon after the third man left the crows began to light down in great numbers and in good range. After all were down, and feeding, he suddenly flung open the door, and as they rose, he gave them first one barrel and then the other, and made the biggest crow shot on California records, winging, killing and otherwise disabling something over a score of birds. To his joy he found that by going into that shanty every day with some of his men, without remaining at all, not a Crow would light on his corn, but the first day he failed to go there they poured down upon it as if no such catastrophe had ever decimated their ranks. That farmer says he knows that a Crow can count *three*.

By the twentieth of April the nests are generally finished and incubation fairly entered upon. The nest is placed in the fork of a tall tree, pine where that kind of timber grows, and consists of a thick course of sticks and twigs, overlaid by moss, barks of different kinds, or dried grass, and well lined with bark and leaves. Four eggs is usually the complement, colored some shade of green and covered with splotches of different shades of brown, and dusky. One brood only is reared.

I am afraid I cannot add anything to the welfare of this bird economically considered. The weight of testimony is all against him. He must understand that the waste places of the earth only are voted him henceforth and forever. In common with all of the other members of the family he has got a bad name.

SPECIFIC CHARACTERS.

Bill much compressed; curved from the base, rather more so towards the tip; incumbent feathers of nostrils reach half the distance from the base of the bill to the end of the lower mandible, and not quite half way to that of the upper; fourth quill longest, second shorter than sixth, first shorter than ninth; glossy black with violet reflections, even on the belly; tarsus longer than the middle toe and claw and has eight scales anteriorly; the lateral toes are very nearly equal; the inner claw the larger and reaching to the base of the middle claw; the webs of the throat feather are a little loose, but lie quite smoothly without the pointed, lanceolate character seen in the ravens.

Length, 19 to 20; wing, 13 to 13.5; tail, 8.

Habitat, North America from fur countries to Mexico.

CORVUS OSSIFRAGUS WILSON. (490.)

FISH CROW.

The appearance of this species in Minnesota of course was accidental. On September 21st, 1869, I was driving in the vicinity of this city near a small lake, when a flock of what I calculated were not less than a hundred and fifty crows passed over me from the north and lighted on a plowed field close to the road along which I was driving. Several of our common crows were feeding on the same field, which possibly was the immediate cause of their alighting, but the contrast in size arrested my attention before they stopped their flight. The most ordinary observer could not have failed to see the difference in their sizes. Having my field glass with me I stopped

my carriage and enjoyed as good an opportunity for observing them as I would ask, except to have them in my hands, which, having no gun with me, I could not do. The resemblance in general form, color and movement was such that had there been none of the other species, and they had not lighted on the same field, I might not have identified them, at least I could not with the same certainty. I have never seen them since with sufficient certainty to list them, yet I believe I have observed them in migration on one or two similar occasions. I have little doubt that they visit Hudson bay occasionally at least.

SPECIFIC CHARACTERS.

Fourth quill longest; second rather longer than seventh, first shorter than ninth. Glossy-black, with green and violet reflections; the gloss of the belly greenish.

Length, $15\frac{1}{2}$; wing, $10\frac{1}{2}$; tail, less than 7 inches; tarsus shorter than the middle toe and claw.

Habitat, said to be Atlantic coast from Long Island to Florida.

Family ICTERIDÆ.

DOLICHONYX ORYZIVORUS (L.). (494.)

BOBOLINK.

The Bobolink has shown greater variations in the dates of its arrival in the vicinity of Minneapolis than almost any other species of migrating birds. In the spring of 1870 it came on the 5th of April. In 1865, none were seen until the 18th of May. As a general average the males appear between the 27th of April, and the 7th of May, followed in a few days by the females. Their distribution is universal over the State in sections affording their favorite meadows. Their habits are always of exceptional interest to those who are observers of birds. The morning one is seen first after arrival, others will be seen, and generally upon a green grass-plot grazed very closely by cattle, drawn there by the presence of different species of larvæ upon which they feed in the absence of all kinds of seeds. While the females are still absent they sing but little comparatively, but instantly upon their arrival the music begins in earnest. Courtship is inaugurated at once by the songster with a frenzied display of his powers of melody. With the feathers of his black head slightly lifted, and those of the yellowish-white neck thrown into a crest. the wings

partially spread, and drooping, displaying to the best possible advantage the harlequin dress of boldly contrasted colors, he pours out his devotions in song while waltzing around her on the ground or mounting into the air above and in front of her, he hovers over her, fairly bursting with the notes of his ardent professions, until she flies from his demonstrations, when he accepts the hint and follows her through fences and bushes furiously until she yields to his persistence and from thence through all the period of nestbuilding, incubation, and rearing the brood they remain most truly united.

Early in June the nest is built in a tussock or depression in the ground, which is further excavated by the birds, and consists of dried grasses, rather slightly disposed. It is usually in a meadow near a rivulet of clear running water, and contains about five eggs of a brownish-clay color, with spots and blotches of different shades of umber.

As soon as incubation is completed, the hitherto jubilant male drops his singing and his gaudy dress, and assuming a plain sparrow-like mantle, only lingers long enough to see that the brood can care for themselves, when, with his faithful companion, he spends the remaining summer in the quietest ramblings conceivable. About the first of September, often as early as the 25th of August, old and young gather into flocks and begin to slowly work their way southward, feeding by day and making their flights in the early dawn.

SPECIFIC CHARACTERS.

General color in spring black; nape brownish-cream; a patch on the side of the breast, scapulars and rump white, shading into light ash on the upper tail coverts and the back below the interscapular region; the outer primaries sharply margined with yellowish-white, the tertials less abruptly; the tail feathers margined at the tips with pale brownish ash.

Length, 7.70; wing, 3.83; tail, 8.15.

Habitat, eastern North America to the Great Plains.

MOLOTHRUS ATER (BODDAERT). (495.)

COWBIRD.

The Cowbirds are as fully represented throughout the State as in almost any other with which I am equally well acquainted. They reach us not far from the first of April, and retire again about the 25th of October. In occasional springs I have seen them as early as the 25th of March, and in others not before the middle of April. And I have seen some of them remaining

in autumn until into December, but far more frequently until the month of November, yet in either case in very limited numbers.

It is more commonly found first after its appearance in spring, along the streams, in small flocks, perched for half an hour at a time or more, in the tops of scattering, leafless trees. These little parties are doubtless the advance pioneers of the species, on their way to still higher latitudes that move on shortly, leaving the locality for others alike migrating, until the rear comes to occupy the territory left them by some unwritten law yet to be learned by curious mortals. These parties are not unfrequently mixed somewhat with Red-wing Blackbirds. When those which are to remain during the summer have come, they at once begin to associate with the herds of cattle grazing the fields and commons. Very soon afterwards their numbers increase perceptibly as the herds increase. I have often noticed them scattered in small parties through an immense herd, tripping sprily about their feet, and under their bellies, feeding industriously upon some forms of food evidently associated with the presence of the cattle. It seemed as if the life and limbs of each individual were momentarily jeopardized by the countless feet of the herd, yet in no instance did I ever know of either life or limb suffering by the proximity. Afterwards during the warmest days of summer, these remarkable birds may be seen often, perched along the backs of the cattle while feeding, and when lying down chewing their cuds, emblems of contentment and repose. At such times I have repeatedly witnessed the approach of the bird, when it would hop from the ground onto the head of the animal, walk unhesitatingly down along the face and pick in the angles of the eyes for some time, evidently to the entire satisfaction of the animal thus relieved of the annoying flies and midgets abounding there.

About the time that the birds generally begin to lay their first eggs, the females of this species are noticed to become moody, and to separate themselves from the flocks. Flying about solitarily from thicket to thicket, and tree to tree, they are found to be in the urgent necessities of finding a place in which to deposit their matured eggs. Building no nests of their own, of the instinct for doing which for some reason they are deprived, they drop the imminent egg in the nest of some one of the other species of birds, more commonly perhaps, that of warblers and sparrows, or the vireos, but scarcely less

frequently the sparrow or thrushes. I believe that the Cowbird is without the slightest preference as to what, or whose nest receives her mysterious deposit, but her instincts have taught her not to take such liberties with the nests of rapacious, nor pugnacious species, and as a matter of course the unwelcome responsibility falls more commonly upon the weak and timid. The thrushes therefore ordinarily escape, and most of the vireos do so next in frequency, while the tiny warblers, and the less vigilant sparrows, bear the imposition more uniformly. Notably, the period of incubation for this species is a little less, than for any one of those which are thus imposed upon, thus increasing the probabilities of the maintenance of the species. One of the most comical spectacles ever falling under my observation in bird-life, has been the appearance of a young Cowbird nearly large enough to take to its wings, still sitting *on* (*in* was impossible) the nest of the Maryland Yellow-throat, and the female of that diminutive species in the act of feeding it. The tiny excavation could scarcely afford room for its feet, to say nothing of its body, and with its feathers fluffed so much as to double its apparent size, the mouth extended to its utmost, while the midget foster mother, at the hazard of being swallowed herself bodily, plunging her morsels far down the abyssal throat of the ungracious usurper, who has unavoidably destroyed the mothers own birdling in the process of its development.

Let that species of birds which has no foundlings to rear, question this strange and exceptional provision of a beneficent Creator for the perpetuation of another species. Great rules are often revealed by their exceptions. The birds have no decalogue. What poor little bird-mother, so long imprisoned by her duties in obedience to the demands of her maternal instincts, may not justly envy this one, which has all of the pleasures, and none of the sacrifices of bird-life, except the agonizing anxieties of the brief moment spent in extruding her egg into another birds nest?

From all that I have learned from personal observations, I conclude that the Cowbird lays about the same number of eggs as the average of its family. It is not uncommon to find two in the same nest, and only a little less so to find three. I have recorded two instances of four, and one of five. It is by no means certain in any case where more than one is found that the same female deposited all of them. Indeed it is more presumptive that if her instincts should send her to the same

nest to lay five eggs, she would try her bill and feet at building a nest for herself exclusively.

These birds distribute themselves over the entire State, so that they may be seen almost daily in their favorite localities until late in the autumn as already mentioned, but at no time in such vast numbers as Coues has described them in some of the other western states. Their remarkable disappearance in August which he speaks of (in his "Birds of the Northwest,") has never occurred here to my knowledge, although I have noticed that they were less active during the period of their moulting. Mr. Washburn found them common in his explorations of the ornithology of the Red river valley in the middle of August, and in Otter Tail county on the 17th of October.

My memorandum says for one year, "Very common November 15th in the middle and western part of Hennepin county."

SPECIFIC CHARACTERS.

Second quill longest; first scarcely shorter; tail nearly even, or very slightly rounded; male with the head, neck and anterior half of the breast, light chocolate-brown, rather lighter above; rest of body lustrous black, with a violet-purple gloss next to the brown, of steel-blue on the back, and of green elsewhere; bill short and stout, and about two-thirds the length of the head; claws rather small.

Length, 8; wing, 4.50; tail, 3.40.

(Female light olivaceous all over, lighter on the head and beneath; bill and feet black.)

Habitat, U. S. from Atlantic to Pacific oceans.

XANTHOCEPHALUS XANTHOCEPHALUS

(BONAPARTE). (497.)

YELLOW-HEADED BLACKBIRD.

Whatever their numbers in other western localities, the Yellow-headed Blackbirds are far from abundant in any portion of Minnesota yet explored.

Neither are they even approximately uniformly distributed, although all of the conditions favorable for them are found in nearly every considerable portion of the State.

The males are so large and their markings so conspicuous that they cannot escape attention even when their numbers are very few, and they confine themselves so closely to their breeding places that whoever finds them once is pretty sure of finding them at the same places the next time he seeks them.

Their spring arrival is later than any other species of the family, being more frequently after, than before May first, and generally the females and males arrive nearly, if not quite simultaneously.

They seek marshy places where coarse, strong reeds abound, and in water too deep or miry for approach except with a boat. Here they build their nests in small communities, suspending them by firm and very ingenious attachments to about four or five of the firmest reed-stalks, but little above the surface of the surrounding water. Coarse grasses and the leaves of the reeds are used in its structure, in such a manner as to evince a high degree of ingenuity in bird-architecture. It varies somewhat in depth but is relatively a deep nest, with the border elevated and thickened into a strong brim. These nests are finished, and occupied by from four to six grayish-green eggs spotted all over with reddish or umber brown, by the first or second week in June. I have never known them to bring out more than one brood, in caring for which the males have seemed to share all incidental burdens. Their efforts at song are amusing, being much more of a cachination which reminds one of those of a precocious male chicken, making its first rather weak attempts to crow.

After maturing their broods they become a little more distributed, but by no means generally, as do the other members of its family, until preparing for migration, which takes place a little earlier than the Red-wings. Like the latter they feed principally upon wild rice which abounds along the course of streams and in shallow ponds and lakes, but they are often seen in the yards where cattle and dairy cows are herded, strolling about as fearlessly as the Cowbirds, with whom they are greatly prone to associate, apparently drawn by the scattering seeds, grains and intestinal worms occasionally dropped in the offal. For almost thirty years they have bred and fed in one locality, long since within the earliest corporate limits of this city (Minneapolis) until their old reedy haunt became too valuable for poor folks and was buried under the deep grading for city lots.

SPECIFIC CHARACTERS.

First quill nearly as long as second and third, (longest) decidedly longer than the third; tail rounded or slightly graduated; general color black, including the inner surface of wings and axillaries, base of lower mandible all round, feathers adjacent to nostrils, lores, upper eyelids and remaining space around the eye; the head and neck all around, the fore part of

the breast, extending some distance down on the median line and a somewhat hidden space round the anus, yellowish; a conspicuous white patch at the base of the wing formed by the spurious feathers, interrupted by the black alula; female smaller, browner; the yellow confined to the under parts and sides of the head, and a superciliary line; a dusky maxillary line; no white on the wing.

Length (of male), 10; wing, 5.60; tail, 4.50.

Habitat, western America from Texas, Illinois, Wisconsin and north Red river to California, south to Mexico.

AGELAIUS PHENICEUS (L.). (498).

RED-WINGED BLACKBIRD.

The Red-winged Blackbirds are an exceptionally abundant species here. They reach the southern counties about the 20th of March and the principal parts of the State about the 1st of April. They come in small flocks generally and some springs a single bird will appear several days in advance of the parties to follow. They take to the reeds, and especially the cat-tails of which they seem to be very fond, obtaining, doubtless, a portion of their food from them. The males sing their brief, melodious songs from the tops of the trees and bushes, which being devoid of leaves, makes them conspicuous objects in their black mantles with scarlet epaulets. Their notes are limpid, sweet and resonant, and are amongst the cheeriest of the early spring. When not singing he keeps a constantly repeated *check, check, check*, from which he frequently abruptly presses into the liquid utterance of *o-kle-ree-e-e-e-ee; o-kle-ree-e-e-e-ee*, during which his wings and tail are suddenly spread and he bows and sidles as if receiving a regal introduction to somebody allied to the queen. The males precede the females about ten days. Mating immediately follows the arrival of the latter and by the 10th of May they engage in building their nests in communities in the meadows and swamps. Tussocks of grass or low bushes standing in water are preferably chosen, but proximity to the water will answer. Coarse grasses are interlaced and woven into a strong, deep nest which involves the stalks of grass and twigs, upon which they are built. It is lined with fine grasses and fibrous roots and generally receives from four to five eggs of a light blue color. They bring out two broods, and soon after the last is able to fly strongly, gather into flocks. As the season advances these flocks aggregate into larger ones until their numbers often exceed all computation, feeding upon grain fields and wild

rice. About October 25th they move southward, but their numbers are immediately re-supplied by others from still further north, so that to the casual observer there is little diminution until considerably later. Indeed a few do linger until near, or even into December in occasional autumns.

Mr. Lewis found them in myriads in Grant county in September, and still fairly represented on October 20th.

Mr. Washburn found them the most abundant of their family in the Red river valley in August, and still numerous associates with brewers and the rusty blackbirds in Otter Tail on October 25th.

SPECIFIC CHARACTERS.

General uniform lustrous velvet-black, with a greenish reflection; shoulders and lesser wing coverts bright crimson, or vermilion red; middle coverts brownish-yellow, and usually paler towards the tips; tail much rounded, the lateral feathers half an inch shorter; fourth quill longest; first about as long as fifth; bill large and stout, half, or more than half as high as long.

Length, 9.50; wing, 5; tail, 4.15.

Habitat, North America in general.

STURNELLA MAGNA (L.). (501.)

MEADOWLARK.

The accidents of early associations and the idiosyncracies of individual sensibility to the melody of bird-songs may account for the diversity of the measure of welcome which different birds meet upon their arrival in spring, yet to me it remains unexplained that comparatively so few seem to appreciate the arrival and presence of the Meadowlark. Braving the cold, rough winds incident to these northern latitudes in the early days of April, he drops down suddenly onto some slightly elevated object, like a stone, an old ant-hill, a low shrub or bush, or in the absence of all these, onto about the third rail of a worm fence along the roadway, and bursts into song. A single note of it reaching the ear of those who know him, between the gusts of high wind, arrests all attention, until its most welcome source is ascertained. The females are never long behind, and as the season advances, the song, at first broken into considerable intervals, grows more and more frequent until the nesting time draws near, when mounting higher objects, like a stake in the fence, a high bush, or even the topmost branch of a medium sized shade tree, he sings his clear, limpid song,

broken into short intervals, during which he keeps nervously twitching, jerking and expanding his somewhat abbreviated tail, or dashing into the air, uttering a chuckling twitter, and sailing off, prairie-hen like to another perch to repeat his beautiful and delicious song. Nesting is usually begun about the middle of May, occasionally earlier, and oftener later. Two broods are reared in a season. They lay four to five white eggs, speckled and blotched with reddish-brown or lilac.

The nest consists of coarse, dried grasses outwardly, and fine grasses within, and is placed in an excavation in a tuft or tussock of the ranker grass of the previous year, the tops of the inner stalks of which are adroitly fastened together and concealed by other loose material mingled with and dropped upon it, leaving an obscure opening on one side only. A more secure or completely concealed home could scarcely be conceived amidst so great exposure in the dry, elevated, open fields, constituting their chosen local habitats. Their food consists of insects and worms, for the obtaining of which their bills are remarkably adapted, being very long, acutely tapered from the base which is firm, deep and very strong, thus preparing them to bore through the dry, compact soil of the uplands where they remain.

Individuals of this species remain very late in the autumn, especially in the southern counties—indeed, Dr. Hvoslef, of Lanesboro, in Fillmore county, which borders Iowa in the south-east, met this bird on the third of January, sitting on the fence in the act of singing—a jolly fellow that. If he had been a permanent resident we should have known that he was daft. They are mostly given by the last of October.

SPECIFIC CHARACTERS.

Feathers above dark brown, margined with brownish-white, with a terminal blotch of pale reddish-brown; exposed portions of wing and tail with transverse bars of dark brown bars which are confluent along the shaft on the middle tail feathers; beneath yellow with a black pectoral crescent, the yellow not extending on the side of the maxilla; sides, crissum, and tubiæ, pale reddish brown, streaked with blackish; a light median and superciliary stripe, the latter yellow anterior to the eye; and a black line behind.

Length, 10.60; wing, 5; tail, 3.70; bill above, 1.35.

Habitat, eastern United States.

STURNELLA MAGNA NEGLECTA (AUDUBON). (501b.)**WESTERN MEADOW LARK.**

This species has been occasionally obtained in the Red river valley for the last fifteen years, but is still rare. It has been collected as far down as the Indian Reserve in Pipestone county. I am very familiar with this bird, and its various modifications of song as exhibited in the mountains, foot hills and valleys of California where I spent about two years in the enjoyment of special facilities for observing them, as I was making a collection of the birds from Trucker to Sonoma and south to San Diego in 1871-2.

SPECIFIC CHARACTERS.

Feathers above dark brown, margined with brownish-white, with a terminal blotch of pale reddish-brown; exposed portion of wings and tail with transverse bands, which in the latter are completely isolated from each other, narrow and linear; beneath yellow, with a black pectoral crescent; yellow of the throat extending on the sides of the maxilla; sides, crissum, and tibia, very pale reddish-brown, or nearly white, streaked with blackish; head with a light median, and superciliary stripe, the latter yellow in front of the eye, a blackish line behind it; the transverse bars on the feathers above (less so on the tail) with a tendency to become confluent near the exterior margin.

Length, 10; wing, 5.25; tail, 3.25; bill, 1.25.

Habitat, western United States from Wisconsin, Minnesota, Iowa to Pacific coast.

ICTERUS SPURIUS (L.). (506.)**ORCHARD ORIOLE.**

This is a fairly common summer resident, arriving about the middle of May and retiring southward about the first of September. Its song is clear, strong and thrush-like in melody.

The nests are usually constructed and incubation commenced by the second week in June, and occasionally a little earlier. The structure consists of green or nearly fresh wiry grasses compactly woven and lined with finer grasses, inner bark of coarse weeds and coarse hairs of cattle and horses. It is usually suspended from a fork in a limb from seven to ten or twelve feet from the ground. In the absence of the orchards, from which it has received its common name in the east and south, it seems to prefer a low tree of almost any species of timber if somewhere about the size of a matured apple tree and located on a somewhat elevated, dry sidehill with no relation to approximate water.

I have never known them to bring out more than one brood in the season. After the young are sufficiently grown to fly they disappear from their ordinary localities and are afterwards less frequently seen, except by those familiar with their postnidifying habits. Their distribution throughout the State is universal. Mr. Washburn and many others report it common in districts explored by them.

NOTE.—Authors differ as to the pensile character of the Orchard Oriole's nest. In his *Birds of New England*, Samuels on page 347 says: "It is not pensile, but is built *on* the branch." Langille says on page 245 of his "Our Birds in their Haunts:"—The nest is *hung* by the upper edge to a limb."

I have never seen a nest *on* a limb, as the former states, and from the entire mechanism of it I can not see how it could be thus placed, but while always *hung* by the upper edge, I have met instances when it received substantial support from a fortuitous limb *under* it which was firmly secured to it.

SPECIFIC CHARACTERS.

Bill slender, attenuated, considerably decurved; tail moderately graduated; head and neck all around, wings, interscapular region of the back and tail feathers, black; rest of under parts, lower part of back to tail, lesser upper wing coverts and the lower one, brownish-chestnut; a narrow line across the wing and the extreme outer edges of quills, white.

Length, 7.75; wing, 3.25; tail, 2.60.

Habitat, United States west to the Plains.

ICTERUS GALBULA (L.). (507).

BALTIMORE ORIOLE,

Few of the birds spending their summers in Minnesota arrive with more pronounced regularity than the Baltimore Oriole. Years in succession he had not varied three days from the tenth of May. The very characteristic note of the male upon his first appearance will arrest the attention of anyone enough to secure a careful search for him, when his unmistakable plumage settles his identity for everyone. The females usually arrive about three days later, rarely more, but not infrequently have they come within twenty-four hours. In the interval between the arrival of the sexes, the males have a very peculiar, clear, strong, whistling association of about three or four notes, which are at once exchanged for a beautiful, pathetic variety, when she has come. They sing quite volubly, and voluptuously while pairing, and only less so during incubation, but become comparatively silent afterwards, until they retire southward not far from the 30th day of August.

Thirty years ago, when the population of the entire State was only about the same as that of one of her chief cities now, this species was correspondingly represented by fewer numbers, but unlike some other species, civilization has favored its multiplication probably tenfold. I have no doubt that a hundred nests might be found in the corporation of Minneapolis (after extra-limiting half that number of promising additions) and possibly double that figure, while along the highway between it and St. Paul, in a distance of five miles, one-fourth as many more would be possible to be found. I have found no arboreal portion of the State except the coniferous or the swampy, where the species is unrepresented.

They commence building their nests about the 20th of May, for the most beautiful description of which I shall offer no apology for quoting Nuttall: "There is nothing more remarkable in the whole instinct of our Golden Robin than the ingenuity displayed in the fabrication of its nest, which is in fact, a pendulous, cylindrical pouch of five to seven inches in depth usually suspended from near the extremities of the high, drooping branches of trees such as the elm, the pear, or appletree, wild cherry, weeping willow, tulip-tree, or buttonwood. It is begun by firmly fastening natural strings of the flax of the silk-weed or swamp hollyhock, or stout, artificial threads around two or more forked twigs corresponding to the intended width and depth of the nest. With the same materials, willow-down, or any accidental ravellings, strings, thread, sewing-silk, tow or wool, that may be lying near the neighboring houses or around grafts of trees, they interweave and fabricate a sort of coarse cloth into the form intended, towards the bottom of which they place the real nest, made chiefly of lint, wiry grass, horse and cow hair, sometimes in defect of hair, lining the interior with a mixture of slender strips of smooth vine-bark, and rarely with a few feathers; the whole being of a considerable thickness, and more or less attached to the external pouch. Over the top, the leaves, as they grow out, form a verdant and agreeable canopy, defending the young from the sun and rain. There is sometimes a considerable difference in the manufacture of these nests, as well as in the materials which enter into the composition. Both sexes seem to be equally adepts at this sort of labor, and I have seen the female alone perform the whole without any assistance, and the male also complete this laborious task nearly without the aid of his consort, who, however, in general is the principal worker."

Their eggs, usually four, sometimes six, are flesh-colored, and not unfrequently with a bluish shade, with lines of lavender, over all of which are strongly marked scratches of brown and black.

The species is one of those which the agriculturist and horticulturist ought to call "blessed," and to which he should make an offering of all of his garden peas without a murmur, in view of its extensive destruction of canker-worms, caterpillars, and other ruinous larvæ. Its marvelous beauty, song, and immeasurable service in the destruction of such indisputable numbers of his enemies, should forever secure it immunity from his curses (for stealing his peas) as the cunning of the location secures it from his cats.

The devotion of the parents to their nests and offspring has no more exalted illustration in bird-biography, exposing themselves to all dangers and to death itself in their protection. Instances of the capture of the young are on record where the parents have followed them long distances and afterwards continued to feed them through the bars of their cage till full grown. One kindred incident has found a place in *North American Birds*, "where the female entered her nest while he was in the act of severing the limb from which it was suspended, and persisted in remaining there until the nest had been cut off and taken into the house." (Ridgway.)

Mr. Washburn in his Red river valley report to me says: "Fairly common everywhere, in the timber along streams. The richness and depth of color, reported as peculiar to western birds of this species, is particularly noticable in birds taken in the valley. The orange-yellow of some individuals noticed was of such a deep hue as to be almost scarlet." These instances of intense coloration, come frequently under my observation in many different species, but so far as individuals are involved, the difference is relatively no greater than those I observed on the Pacific coast. Amongst all the highly colored species, there is an annual advancement up to the fourth year, and in some, including the present species, to the fifth year, as extended, consecutive observations have established.

For an instance, a young oriole of the species, when clambering out into the parapet of its nest before being quite able to fly, was blown off by a sudden gust of wind, onto the ground quite near the residence of a friend who was very much interested in birds. His cat seized it instantly but being on the spot he rescued the victim, yet not until the cat had torn a piece of

skin from one side of its neck. The unfortunate birdling was immediately restored to its place by the employment of a long ladder. Of course it was an easy matter to distinguish this one from the others by the disfigured neck while the family remained about there, which it did until its departure with the others southward.

Nothing more was thought of the circumstance till the following spring, when a pair of orioles commenced building in another tree near by, gathering their strings and threads from the debris of the chip-pile under the window, with which to construct the frame work of the nest. The disfigurement mentioned, arrested the attention of those who first saw them, as it was on the male. For five successive years this individual returned and built on different trees within a hundred yards of the house, and after a little painstaking was identified, thus affording a perfectly consecutive history of the modification of the colors of the plumage under the ordinary circumstances of observation. Many other similar instances of other species might be introduced. The one narrated affords a suggestion for means of determining many interesting questions in this department of natural history. The orioles all disappear with the advent of the frosts of autumn.

SPECIFIC CHARACTERS.

Tail nearly even; head all around and to the middle of the back, scapulars, wings, and upper surface of tail, black; rest of under parts, rump, upper tail coverts, lesser wing coverts, and terminal portions of tail feathers except the two innermost, orange-red; edge of wing quills, and a band across the tips of the greater coverts, white.

Length, 7.50; wing, 3.75; tail, 2.

Habitat, eastern United States to the Rocky mountains.

SCOLECOPHAGUS CAROLINUS (MÜLLER). (509.)

RUSTY BLACKBIRD.

This blackbird is most noticeable in the fall migration when it is abundant in association with the other species of its genus. It arrives in the spring about the first of April and disappears again about the first to the tenth of May moving further north to breed. Although I have discovered no nests, nor have any been reported to me, yet I am satisfied from many observations of their return here at the beginning of October, and other circumstances I might mention, they probably breed in and around the vicinity of Lake Superior in considerable num-

ers. They do so in the northern parts of Maine and New Hampshire. Samuels in his *Birds of New England* says: "While in the valley of the Magalloway river in Maine in June, 1864, I found several (nests); and two of them contained three eggs each.

"These nests were all built in low alders overhanging the water. They were constructed of, first, a layer of twigs and brier stalks; on this was built the nest proper, which was composed of stalks and leaves of grass, which were mixed with mud, and moulded into a firm, circular structure and lined with fine leaves of grass and a few hair-like roots. The whole formed a large structure, easily seen at the distance of a few rods through the foliage. The eggs are of a bluish-white color, of oval form, and covered with fine scratches and spots of light brown. These markings are almost exactly similar to those on the egg of the Great-crested Flycatcher. They appear as if done with a pen, which as soon as it is pressed forcibly on the object, is suddenly withdrawn, making a mark wide at one end, and sharply pointed at the other." Their dimensions were 1.04 by .76 inch, 1.05 by .75 inch and 1 by .70 inch.

They reappear in their southern migration about the first of October, associated with Brewer's Blackbirds and Redwings, and in greatly augmented numbers. At this time their food consists almost exclusively of the wasted grain of the harvest. They seem to have the faculty of obtaining their food in less time than the Redwings, and consequently have more for exclusively social enjoyment. Much of their time is spent on the fences, and in the trees, with only an unmelodious note like *check*, or *check che weecha*, uttered alike by both sexes. They mostly take their autumnal leave of us and move southward at the beginning of November.

SPECIFIC CHARACTERS.

Bill slender, shorter than head, about equal to hind toe; its height not quite two-fifths its total length; wing nearly an inch longer than the tail; second quill longest; first a little shorter than the fourth; tail slightly graduated; lateral feathers about a quarter of an inch shortest; general color black, with purple reflections; wings, under tail covers, and hinder part of the belly, glossed with green; female, dull brown; iris pale straw color.

Length, 9.51; tail, 4.

Habitat, eastern North America, west to Alaska and the Plains. Breeds from northern New England northward.

SCOLECOPHAGUS CYANOCEPHALUS (WAGLER). (510.)
BREWER'S BLACKBIRD.

The migrating movements of this beautiful blackbird do not differ from those of the Rusty Blackbird, arriving and departing at or about the same times, viz: about April first, and about November first. They breed abundantly along the Red river from Big Stone lake to the Canada line, and eastwardly along the shores of the woodland lakes and streams to Mille Laes in Crow Wing county, and less commonly considerably further south.

Mr. Washburn found them at Georgetown, Ada and St. Vincent, August first, old and young in such numbers as to justify the supposition that they breed there. Mr. Lewis reports them in large numbers embracing the young still further east in the same month.

Wherever their breeding habits have been observed in either Minnesota or Dakota it has been noted that they do not do so in large communities. A few pairs will be somewhat associated, but often only one in a locality. And they almost as often select dry, as swampy sections. The nest is a large structure compactly built of twigs and finer materials, like dried grasses, rootlets, weed-bark and lined with hair. Some nests have considerable mud wrought in, but others have none at all. The eggs, five to six in number, are a dull greenish-gray, with several shades of brown in small spots, some of which are light and others dark, very irregular in their outlines.

Doctor Coues in his *Birds of The Northwest*, page 201, has given so true a description of some of the characteristic habits of this species that I cannot do better than to quote it. He says: "Troops of twenty, fifty, a hundred are commonly seen; they have no special fondness for watery places, but scour the open, dry ground, and scatter among straggling pines and oaks; they come fearlessly into the clearings about houses, the traveller's camp, and the stock-yards, gleaning plentiful subsistence from man's bounty or wastfulness. Much of their time is spent on the ground, rambling in hurried, eager search for grain and insects; they generally run with nimble steps, hopping being the exception, when they have satisfied their hunger, and are moving leisurely with no particular object in view. The movements are all easy and graceful, the bird's trim form and glossy color setting it off to great advantage.

At full speed the head is lowered and fixed; in slower progress it is held upright bobbing in time with each step. When a flock is feeding they pass over a good deal of ground, without seeming to examine it very closely; every one tries to keep ahead of the next, and thus they scurry on, taking short flights over each other's head.

“At the least alarm the timid birds betake themselves to the nearest tree, perching in various attitudes. A favorite posture so easy as to appear negligent, is with the body held nearly upright, the tail hanging loosely straight down, while the head turns in various ways, with the whim of the moment. When excited, the bird often sits low down, firmly on its legs, with elevated and widespread tail, constantly flirled, while its watchful eye peers down through the foliage. However compactly a flock may fly up into a tree, they generally scatter as they alight all over its branches, so that it is rarely that more than two, or three can be brought down at a shot. On the ground the case is quite different; there they huddle together so closely that the whole flock may be decimated. Their behaviour in the presence of man is a curious mixture of timidity and heedlessness; they come to the very door-step, and yet a sudden movement, or a shout, sends them affrighted into the nearest trees. The next moment they begin to straggle back again, at first singly or in little squads, till the more timid ones are reassured and come streaming down together, when the busy search for food is resumed. Their hunger satisfied for the time, the birds betake themselves to the trees, often passing the whole period of digestion snugly ensconced in the thick foliage. Then the concert opens; and if the music is neither sweet nor soft, it is sprightly and not disagreeable, for it suggests the careless joviality, and lazy good humor of blackbirds, with their stomachs full, and satisfactory promise of future supply. The notes are energetic, rapid and varied with a peculiar delivery which, like the yelping of the prairie wolves, gives the hearer a very exaggerated idea of the number of the performers.”

Nearly all the different species of blackbirds are seen indiscriminately mingled in the autumnal migrations, but one familiar with their individual or rather their specific habits will readily discover the species in the manner of flight and their walk as well as their feeding. This species does not linger as late in individual instances as the Crow Blackbird. The farmer's prejudices against the whole of them is irremovable, nevertheless they are all his true friends.

SPECIFIC CHARACTERS.

Bill stout, quiscaline, the commissure scarcely sinuated; shorter than the head and hind toe; the height nearly half the length above; wing nearly an inch longer than the tail; the second quill longest; first about equal to the third; tail rounded and moderately graduated; the lateral feathers about thirty-five one-hundredths of an inch shorter; general color of male black, with lustrous green reflections everywhere except on the head and neck, which are glossed with purplish-violet; females much duller, of a light brownish anteriorly; a very faint superciliary stripe.

Length, 10; wing, 5.35; tail, 4.40.

Habitat, United States, from eastern Kansas and Minnesota to the Pacific; south into Mexico; breeds throughout its United States range.

QUISCALUS QUISCULA (L.). (511.)**PURPLE GRACKLE.**

This very common bird it seems to me has claims upon our admiration which have scarcely been acknowledged. Coming back to us after the long silence of the winter one of the first, and remaining until about the very latest in autumn, essaying sometimes to remain all winter, he should awaken our best appreciation of him if for nothing more than these reasons, but he is a beautiful bird, and has the regal grace in his demeanor that shames the strut of the peacock. The flight is more than ordinarily graceful, in the shorter ones of which he displays a characteristic peculiarity exhibited by no other bird I know of, namely folding the tail so as to present a perpendicular rudder-like appearance, still preserving its symmetry perfectly. To do this there must be some specialized muscles that depress the central line of the tail while others elevate the borders, thus bringing the two halves of the upper surface in close contact, and the under surface converted into two, looking in opposite directions.

The coverts preserve their perfect symmetry while they give great firmness to the unique aerial rudder of as graceful a craft as sails the summer air. They arrive in Minnesota about the 25th of March in small flocks or parties and are at once domiciled and "at home" for the season. Their distribution is universal and their breeding places only less so. After finding their nests in a great variety of places I am satisfied they choose the vicinity of dwellings not already pre-empted by comrades or foes, as I find them common in the very heart of the city where there is room enough for the colony.

The city hall, in the noisiest part of a city of 150,000 people, has niches in the cornice which they occupied for many years, until the pugnacious little English Sparrows arrived and drove them gradually out and occupied them themselves. My nearest neighbor, Hon. R. B. Langdon, has encouraged their building in the corners of his elegant residence for several years, and our elms, maples and evergreens bear good testimony to where the nesting of this species has been in the recent years gone by.*

The nest is composed of weeds, dried grasses, fine roots and other similar materials compacted in mud, and is lined with fine grass, weeds and horse hairs. Its location varies in elevation from a crotch in a lilac bush, two feet from the ground, to the tops of trees sixty or seventy feet. They are very devoted to their young and apparently very civil to their neighbors of different species, if unannoyed by them, but woe to the intruder.

The charge of eating the eggs and young of other birds in this locality would be a vile slander, and I ask for general and specific testimony to the local facts before I will consent to have so noble a bird thus maligned. As to the indictments of the corn growing agriculturists against him for digging it up, I venture to say that they never grew up to manhood without a few melon patches having suffered at their several hands, and if luscious, ripe melons are an irresistible temptation to one who has been brought up with the Westminster catechism in

*In the case of a great many species of migrating birds, there can be no doubt of their annual return to the same general, and not infrequently the same special localities, from year to year during the life-time of the individual, affording thus an occasional opportunity to observe the variations of the plumage associated with age. To do this reliably, a given individual must have some accidental, unusual mark that is persistent, so as to leave no possible doubt, as in the case of the Baltimore Oriole, described with the species elsewhere in the Notes. Another has been recently related to me of the present species, by the Hon John DeLaittre, who resides on Nicollet Island, in the heart of the city, surrounded with the most beautiful forest trees. Together with many other species, the Crow Blackbirds breed on that arboreal island, one nest of which was several years ago built in a hole in a tree very near his house, and so placed that it was within ten feet of a chamber window, from which frequent observations were quite unavoidable. Amongst the full grown brood, one male lost a leg by some means, most probably a sling-shot of some marauding boy. It seemed otherwise well, but was too well marked to escape constant recognition.

It disappeared late in the autumn with the rest of a large flock, and upon the return of the spring, reappeared with its species, and in due time built a nest in consort with its newly chosen companion near the dwelling, reared another brood, and is confidently expected to return again next year provided no unseen foe has destroyed the remaining leg, wings or body.

Here is a hint of the possibility of following up the life history of individuals, and settling some open questions as to the variations of intensity of coloration within a uniform term of years. I am persuaded that this species does not reach its highest plumage until the fifth year; or until about the end of the first one-fourth of the natural life of the individual.

his hand, germinating corn with its little green flag to locate it with certainty, and new corn "in the milk" in the delicious covert of broad leaves and silken tassels must be more to these uncircumcized aboriginees, who held the soil before they ever dreamed of waving corn fields or quarter sections. Besides, a grub is found at the root of every fifth hill of what is to be corn at all. And he has earned extenuation for breaking the sixth commandment by the destruction of hosts of the grubs just over in the pasture and meadow before the corn was planted.

They lay four to five eggs, varying in color from light blue to light brown, which are marked with obscure spots of light brown over which are laid blotches and lines of black and umber-brown. They vary in size from 1.30 by .88 to 1.18 by .88 of an inch. They usually bring out two broods, unless greatly disturbed. The larger portion return southward about the first of November, but as already intimated, occasional parties remain much later, and in a few localities, all winter.

Mr. Edward Everett, of Waseca, writes me:—"One or two small flocks remain here during the winter in the groves, feeding on the seeds and grains from the barn yards." Mr. Washburn found them still represented as far north as Otter Tail county on the 25th of October, and Mr. Lewis reports them as not gone in many localities further south at a considerably later date.

SPECIFIC CHARACTERS.

Bill above, about as long as the head, more than twice as long as high; the commissure moderately sinuated and considerably decurved at the tip; tail a little shorter than the wing, much graduated, the lateral feathers one and ten one-hundredth inches shorter; third quill longest, first between fourth and fifth; head and neck all well defined steel-blue; the rest of the body with varied reflections of bronze, golden, green, copper, and purple, the latter most conspicuous on the tail, tail-coverts and wings; the edges of the primaries and of the tail greenish. Female similar, but smaller and duller, with perhaps more green on the head. Iris yellow.

Length, 13; wing, 5.50 to 6; tail, 5.80; bill, 1.25.

Habitat, New England and Alleghanies north and west to Hudson's Bay and the Rocky mountains.

Family FRINGILLIDÆ.

COCCOTHAUSTES VESPERTINA (COOPER). (514.)

EVENING GROSBEAK.

In characteristics, habits and its history, the Evening Grosbeak is a wonderful, if not a mysterious bird. The peculiar combination of its colors in plumage, the huge size of its powerful bill, as well as many other things, almost undefinable, in its feeding, peeping and flying combine to constitute it a very remarkable bird. It is cheerfully assigned the place of honor, at the head of our list of the Finch family. After all, however, it is least known. It is but recently that it has been very closely observed, and very little has been learned of its summer habits. It appears in the vicinity of our homes so suddenly, so mysteriously, that it seems like a phantom, dropped out of the autumn clouds. Its entire absence in summer contributes materially to this. It comes when most of those birds we know, and love, have gone—when the spectral forms of the leafless trees are apparently dead, to reclothe them with life, and by their peeping, recall the spring. Their trustfulness scarcely recognizes the presence of man. Except their frog-like peeping they give nothing by which to judge their powers of song,

But silent and songless, no story he tells,
Not even to whisper the place where he dwells;
And when the bright sun to the northward returns,
Like a ghost, flies away from the land that he spurns.

I had resided here many years before I saw one of them in the flesh or the skin, notwithstanding my extensive observations, and my familiarity with every local collection besides my own, then known. The individual met with, so far as I have known, was found by Mr. T. A. Whitmore, of this city, on Nov. 9, 1870, in the timber bordering the banks of Basset's creek, within or near the corporate limits. Its strongly marked colors and huge bill, assured him that it was a new bird, and after a prolonged and exhausting pursuit he finally was rewarded by securing it. After it was mounted and placed in his collection I had the pleasure of examining it many times. On Dec. 26th following, a specimen of each sex, in mature plumage, was obtained near the city out of a small flock feeding upon the cottonwoods.

They were exceedingly unsuspecting and tame. Others were subsequently secured, by nearly every birdist in this locality, and letters of inquiry came from all sections respecting them. Following this a period ensued during which for several years they were rarely seen, and then only by those who were watching closely for them. Later observations lead me to think their lines of migration vary considerably even when the seasonal characteristics do not. The earliest of my own records of this autumnal arrival is November 9th. Prof. C. L. Herrick reported some November 20th. Their stay amongst us is usually quite constant, and in flocks of from 20 to 60 about equally divided between males and females, with a larger preponderance of the young of the year.

This species has been reported to me from many localities of the State at different times. Dr. J. C. Hvoslef, found a large flock in Lanesboro, near the southern line which appeared there on the 15th of February, although he did not fully identify them until the 13th of March, by which time "they were very numerous in all the woods along the Root river in this neighborhood, and remained till May the 13th when they all left."

W. D. Hurlburt, of Rochester, in the southeastern part of the State, saw them there some time in March. He says:—"These birds are constantly about our lawns and trees, picking buds and feeding on the ground under the fir trees. I notice only one note, a peep as from frogs or young chicks." Mr. Edward A. Everett reports them at Waseca February 26th to May 12th.

It seems from all I have seen and what I get from correspondents throughout the State that there is a longer or shorter period of a still more southern migration.

That occasional individuals linger quite late in the spring is evident from my having seen them as late as May 17th, (1876) but they usually disappear, some considerably earlier.

The Evening Grosbeak's only song in Minnesota yet heard is its frog-like peeping which is kept up constantly while feeding. When perching as they often do on the ridge of buildings, and when flying, they are silent. They are exceedingly fond of the buds of the box elder (*Negundo*), which is a very common shade tree with us.

Their breeding places are in high latitudes to the northwest of us principally, except the proper conditions are found by altitude in lower latitudes. Its winter distribution is very wide, indeed, embracing all the northern states and territories,

but is less common in all save Minnesota, Wisconsin and the northern portions of Illinois and Iowa, and some sections of the extensive interior table lands of the lower territories. For many years Dr. Cooper failed to meet with it on the Pacific coast until Mr. F. Gruber, an indomitable collector of San Francisco, found a specimen at Michigan bluff, Placer county, California. The doctor saw the feathers of one recently killed at the summit of the Sierra Nevada, latitude 39°, in September, 1863.

SPECIFIC CHARACTERS.

Bill yellowish-green, dusky at the base. Anterior half of body dark yellowish-olive, shaded in yellow to the rump above, and the under tail coverts below. Outer scapulars, a broad frontal band continued on each side over the eye, axillaries, and middle of under wing coverts, yellow. Feathers along the extreme base of the bill, crown, tibiae, wings, upper tail coverts, and tail, black; inner greater wing coverts and tertiaries, white.

Length, 7.30; wing, 4.80; tail, 2.75.

Habitat, western North America, east to Lake Superior.

PENICOLA ENUCLEATOR (L.). (515).

PINE GROSBEAK.

Another winter visitant from the colder regions of the north. It arrives about the middle of November and remains frequently until the 20th and 25th of April. Less of a seed, and more if possible of a bud-eater than the Evening Grosbeak, it still consumes both in enormous quantities. Like the last noted species the Pine Grosbeak is an unsuspecting, trustful bird, being often caught with a noose slipped over his head, or even in the hands, while intently feeding. They are gracefully formed and beautifully colored when in mature plumage, and very social in an unceasing twitter while feeding. Those who have heard them in their breeding places say they have a very sweet, soft warble somewhat like the canary. Their call notes are quite marked and employed by both sexes. They are usually found in small parties during their stay with us, averaging perhaps a dozen to fifteen, but occasionally many more, and sometimes less. Occasionally individuals of this species have been obtained in the vicinity of Fort Snelling for thirty years past. Its distribution like the Evening Grosbeak's is very unequal, and subject to great variation in different years. As the country is larger and larger settled and more improved, their relative numbers increase. Their presence in winter has been

reported through many years from nearly all the openly timbered sections especially, and less frequently from prairie districts where trees have come to be considerably grown for shade and ornamentation. During the winter of 1875, I found them exceptionally represented in the vicinity of Minneapolis until the 18th of April. Occasionally individuals have been seen still later in other years. M. F. L. Washburn reports the species common in Otter Tail county, particularly at Lake Mille Lacs, which is in timbered lands. At Minnetonka Mills it was seen first on November 15th, and remained in that locality in considerable numbers until about the 20th of April. It remains all winter in the vicinity of Thompson and Duluth.

SPECIFIC CHARACTERS.

Bill and legs black; general color carmine-red, not continuous above except on the head; the feathers showing brownish centers on the back, where the red is darker. Loral region, base of lower jaw all round, sides and posterior part of body, and under tail coverts, ashy, whitest behind. Wing with two white bands across the tips of the greater and middle coverts; outer edges of quills also white, broadest on the tertiaries.

Length, 8.50; wing, 4.50; tail, 4.

Habitat, northern portions of northern hemisphere.

CARPODACUS PURPUREUS (GMELIN). (517.)

PURPLE FINCH.

In all my ramblings with gun, rod, and note-book, up to the 26th of November, 1869, I failed to discover the Purple Finch, and had about arrived at the conclusion that I should never bring him to my list, when, on that day I discovered a flock of about 20. I was in the depth of the great deciduous forest unromantically called the Big Woods, about thirty miles west of Minneapolis, in special pursuit of ruffed grouse which were then very plenty in that section, when I was surprised and delighted at hearing the characteristic "chink" high above me from many throats, and soon discovered its source. They were in the extreme top of the tallest hard maples that abound there, and could only be identified with my ever-ready field glass. It did not take long to seal my discovery by having several in both mature and immature plumage to deposit in my collecting basket. Since that time it has come to be almost a common spring and fall visitor, indeed, resident in the north part of the State, where it breeds abundantly. Its nest has been reported to me as found in the section where I first saw it, but I

cannot be quite assured of my authority. Those I have from its noted breeding places are made of fine roots, grasses and occasional hairs. Not infrequently other materials are incorporated, like fine strips of the inner bark-like fibers of rank weeds, and sometimes mosses.

The eggs are bluish-green with spots and lines of dark brown or black, and are much the smallest at one end. I understand from reliable observers that they rear two broods each season, of four to five, the nests being found at distances varying from twenty to forty feet from the ground, and commonly in coniferous trees, but not uniformly.

It is said to be extremely destructive to the buds of fruit trees in New England, which makes it very unwelcome despite its beautiful warblings and plumage, but no complaints have yet been heard from pomologists in Minnesota. They are said to bear confinement well, and become delightfully pugnacious little pets, like their more domestic cousins, the House Finch or Burions of California.

Dr. J. C. Hvoslef reports it at Lanesboro, near the southern limit of the State, April 26, 1884.

SPECIFIC CHARACTERS.

Second quill longest; first shorter than third, considerable longer than fourth; body crimson, palest on the rump and breast, darkest across the middle of the back and wing coverts, where the feathers have dusky centers; the red extends below continuously to the lower part of the breast and in spots to the tibiae; belly and under tail coverts white, streaked faintly with brown, except in the very middle; edges of wings and tail feathers brownish red; lesser coverts like the back; two reddish bands across the wings, over the middle and greater coverts; lores dull grayish.

Length, 6.25; wing, 3.35; tail, 2.50; bill above, 0.45.

Habitat, eastern North America west to the Plains.

LOXIA CURVIROSTRA MINOR (BREHM). (521.)

AMERICAN CROSSBILL.

Somewhat irregularly common in small flocks which usually come about the 10th of November in this locality, this remarkable species is found in the winter months in nearly all of the timbered sections of the State. Their habit of roving around from one locality to another is quite characteristic, and they suddenly whirl from a given direction of flight and perch upon some dry tree-top, leaving themselves by their conspicuous col-

ors the most noticable objects above the russet of autumn, or the snowy whiteness of winter. Often some prominent tree in the very heart of the city becomes the temporary place of their appearance and when many eyes are turned upon them, they may drop down as suddenly as if some hawk was hovering over them into a thicket of raspberry or currant bushes, just over the fence nearest the observers. They are not shy, being often approached very closely by the inquisitive looker-on if he have no dog at his heels.

There seems to be a most reasonable presumption that they breed to some extent within our borders, yet not as early as is claimed for other sections of the United States in much the same latitude. Rev. J. H. Langille of Buffalo New York in his charming book, *Our Birds in Their Haunts*, says: "It is well demonstrated that in this country these birds breed in winter, or early spring."

He quotes Audubon's opinion to the same effect based on the assurance of "many persons in the State of Maine" who followed lumbering in the pine regions of that State. It is a familiar bird to Minnesota lumbermen too, who are largely from Maine, who although noticing it so frequently have never mentioned either eggs or young. The flocks met with during winter are made up principally of the young of the year, with just a presumptive representation of paternal adults. Mr. Wm. Howling, a local taxidermist of great experience, tells me that the full plumaged adult males are only met with comparatively rarely in his business. Now, the flocks have appeared here as early as the tenth of September, with apparently no old males at all. They remain until late in April with no indications of breeding, although in the light of all observations, I am inclined to believe the great body of those which have spent the winter months in this locality leave about the first of that month, and may at once enter upon incubation in their proximate nesting places which I presume to be the pineries somewhat to the north and east. Mr. Washburn, who has been employed to collect birds and notes in the interest of this report in the Red river valley (and a most scrupulous observer) says "on July 27th, at Herman, Minn., I observed a flock of these birds feeding on the "galled" beans of some young poplars in the village. The galls were quite large, and the birds were eagerly biting them open with their peculiar bills to obtain the minute *insects* within. It has a strong, loud note, resembling somewhat those of the American Goldfinch,"

I suppose these were young birds, probably attended by the relative proportion of adult parents. It would seem from reliable testimony that the period of incubation in different localities extends from January into June, which is certainly very remarkable for a species reputed to rear but one brood in the year.

As I have never seen the nest of the Red Crossbill, I shall permit myself to reproduce from Mr. Langille's work a quotation from the description of one by Mr. E. P. Bicknell, found at Rimdel, N. Y.

"The nest was placed in a tapering cedar of rather scanty foliage, about 18 feet from the ground, and was without any single main support, being built in a mass of small, tangled twigs from which it was with difficulty detached. The situation could scarcely have been more conspicuous, being close to the intersection of several roads, in plain sight of as many residences, and constantly exposed to the view of passers-by. The materials of its composition were of rather a miscellaneous character, becoming finer and more select from without inwards. An exterior of bristling spruce twigs, loosely arranged, surrounded a mass of matted shreds of cedar bark which formed the principal body of the structure; a few strips of the same appearing around the upper border; the whole succeeded on the inside by a sort of felting of finer material, which received the scanty lining of horse hair, fine rootlets, grass, straws, pieces of string and two or three feathers. The shallow felting of the inner nest can apparently be removed intact from the body of the structure, which, besides the above mentioned materials, contains small pieces of moss, leaves, grass, strings, cotton substances and the green foliage of cedar. The nest measured internally two and a half inches in diameter by one and a quarter in depth, being in diameter externally about four inches and rather shallow in appearance."

The eggs are four to five in number varying in size, pale greenish variously marked in dots and blotches, with different shades of lilac and purplish-brown.

SPECIFIC CHARACTERS.

Male dull red, darkest across the back; wings and tail dark, blackish-brown; female dull greenish-olive above, each feather with a dusky centre; rump and crown bright greenish-yellow; beneath grayish; tinged, especially on the sides of the body with greenish-yellow; young, entirely brown; paler beneath.

Length (male), about 6 inches; wing, 3.30; tail, 2.25.

Habitat, North America generally.

LOXIA LEUCOPTERA GMELIN. (522.)

WHITE-WINGED CROSSBILL.

I found a few specimens of this species in Mr. Shroeder's collection in St. Paul as long ago as 1865, and later in Mr. Howling's of this city, but I have never met with it in the flesh myself. All those I saw in either collection were said to have been collected in this State. They were nearly all mature birds and readily identified.

Dr. Brown describes the nest as saucer-shaped, formed of lichens, encased in spruce twigs, lined with hair and bark shreds, four inches in diameter with a cavity an inch and a half deep. The egg is pale blue, spattered at large end with fine dots of black and ashy-lilac; taken at New Brunswick.

Mr. M. Chamberlain, of St. Johns, New Brunswick, while moose hunting in the third week in January, found himself "face to face with a White-winged Crossbill on her nest, the high bank of snow under me bringing my head about level with the nest. * * * The nest was placed in a fork of one of the main limbs of the tree and was composed externally of the long, gray moss which grew in large patches on most of the trees in this vicinity, and so much resembled these patches of moss as to be difficult of detection. In the inside was a lining of softer moss, and between the lining and the exterior were small twigs interlaced. In the nest were three eggs of a bluish-white ground color, having dashes of red upon the larger end."

The bill so wondrously formed, as to appear deformed, does not naturally differ in appearance from that of the Red Crossbill. It is, as with the last mentioned species, used for climbing like that of the parrot, as well as penetrating cones of the pine and other coniferous trees for the nuts and seeds.

It is reported as found in several different timbered sections within our borders at long intervals, but with what reliability I cannot be assured.

SPECIFIC CHARACTERS.

Bill greatly compressed, acute towards the point; male carmine-red, tinged with dusky across the back; sides of body under the wings streaked with brown; from middle of belly to tail coverts whitish, the latter streaked with brown; scapulars, wings and tail, black; broad bands on wings across the ends of the greater and median coverts and spots on the ends of the inner tertiaries, white.

Length, 6.25; wing, 3.50; tail, 2.50.

Habitat, northern North America.

ACANTHIS LINARIA (L.). (528.)

REDPOLL.

The Redpolls arrive in the principal portions of the State about the middle of October, varying somewhat in different seasons, and they come to stay, as their persistence through the severest of our winters will attest through twenty-eight years of my own observations. I have neither yet seen nor heard from any considerable section where they were not most usually represented, except at Lanesboro, where Dr. Hvoslef says: "One winter I did not see a single one of these birds."

Formerly they used to literally swarm about our numerous flouring mills in Minneapolis during the severe winter weather, but the more pugnacious English Sparrow has driven him back to his older, wild haunts on the prairies, and in the open timber where the seeds of grasses and weeds are supplied in abundance for his food. They are really a very pretty and interesting species that contribute more than any other except the snow buntings to cheer the long Minnesota winters with their restless movements on the wing, and their soft twitterings in their flights. Mr. Langille, in his beautiful descriptions of them, says: "The graceful curves of their undulating flight intersect each other at all angles, while here and there one seemed to be describing unusually long, sweeping curves amidst the dense, moving mass, as if throwing out a challenge to its more modest companions. Cru-cru-cru-cru, shru-shru-shru-shru, coming in soft, lisping voices from hundreds of throats."

About the first of April the flocks begin to consolidate and fly in wilder swoops, and leave us about the 20th of that month, the latest record I have being by Mr. T. S. Roberts' on the 18th, 1875. The somewhat conspicuous dark-crimson on the top of the head, and black patch on the chin leave no doubt of its identity to even a casual observer, and should there be, the manner of flight alluded to already, and their soft, chu-chu-chu note constantly repeated in flight will render it certain, for only the notes of the Goldfinch resemble theirs, and their plumage is too characteristic to confuse in that respect. They breed in the northeastern portions of the State, in the smaller spruces and other evergreens and the willows along the streams, in nests constructed of dry grass, strips of fibrous barks, roots, moss, fragments of wasps nests, hair, twigs thistledown, feathers, etc., woven artistically into a

firm structure. They are mostly lined with hairs. Four to five is the usual number of the eggs. They are pale bluish-green, spotted with orange-brown near the larger end. From several circumstances, as well as what has been reported to me from those familiar with the localities of their breeding I think they probably do so in Minnesota about the middle or latter part of May, but according to Mr. C. O. Tracy, in an article published in the *Ornithologist and Oölogist* in June, 1883, and which Mr. Langille has quoted, they breed in Vermont much earlier. He found the nest and eggs "the last of March, 1878." It is a little remarkable how reports of different species in this respect differ, when the general conditions seem much the same.

SPECIFIC CHARACTERS.

Above, light-yellowish, each feather streaked with dark brown; crown dark crimson; upper part of breast and sides of body tinged with a lighter tint of the same; the rump and under tail coverts similar but less vivid and with dusky streaks. Rest of under parts white, streaked on the sides with brown; loreal region and chin dusky; cheeks and a narrow front, whitish, brightest over the eye. Wing feathers edged externally, and tail feathers all around with white; two yellowish-white bands across the wing coverts; secondaries and tertiaries edged broadly with the same. Bill yellowish, tinged with brown on the culmen and gonys; The basal bristles brown, reaching over half the bill.

Length, 5.50; wing, 3.10; tail, 2.70.

Habitat, northern portions of Northern Hemisphere.

SPINUS TRISTIS (L.). (529.)

AMERICAN GOLDFINCH.

No species of our birds is more irregularly distributed than this. Nor is there another more reliably persistent in its favorite localities. In all my observations for at least twenty-five years, I have never looked in vain for it where it has previously reared its young, except when, by great changes in the conditions favorable to its breeding, it has been practically driven out, as where extensive removal of the timber and brush for agricultural purposes has occurred.

These localities are proximately near running water, where the timber is somewhat scattered, and interspersed with smaller growths like poplars and alders, and where brushy thickets are common. They are also rolling, if not positively hilly, and of course dry. They arrive in spring in force late in March

and early in April, but the mature males, to a considerable extent, still in their winter plumage, and are often unrecognized on that account. A few usually remain all winter, as here and there from all the timbered sections of the state I am informed of their presence.

Dr. Hvoslef, of Lanesboro, near the southern state line, reports them present in different years, January 16th, February 4th, March 8th, and December 19th, but in small numbers. On the Red river near Pembina, one or two individuals are known to remain in the vicinity of where they breed. I can recall no winters in fifteen years during which a few have not been seen between Minneapolis and Lake Minnetonka, fourteen miles west. Mr. Washburn found them "quite common throughout the Red river valley and at Mille Lacs lake." They are reported from Duluth and St. Vincent by several observers. I found them in Grant county in November, as well as many other widely separated localities.

Although here in considerable numbers so early they do not begin to nest until the very last of May and into June. Dr. Hvoslef, a careful and very conscientious observer, says, "Sept. 12th I found a nest with five eggs in incubation." This suggests the possibility of a second brood in exceptional cases, as it is well known that ordinarily they breed but once. The males require two years, or rather two winters to mature their plumage. And ever afterwards they undergo a change from their summer to their winter dress about the middle of September, when the yellow is gradually exchanged for olive-brown, which obviates the sexes. In April begins a resumption of the summer decorations, which is completed in May. Gregarious, a number of families usually living in a single locality, the males are found together, during the nidifying season, in such numbers as to lead the uninitiated to suppose them alone to represent the species. Their nests are uniform in pattern, but consist of a considerable range of materials employed in their structure. In some sections, after the strips of bark, which form the framework, are securely fastened to the twigs of a wild plum or other similar tree, or occasionally even a strong, rank weed, it is covered with lichens cemented together with saliva for the outside finish and lined with various soft materials. In other localities I find the strips of bark woven into a neat, firm structure with no lichens or saliva at all. Eggs, four, bluish-white, oval in form.

SPECIFIC CHARACTERS.

Bright gamboge-yellow; crown, wings and tail black; lesser wing coverts, band across the end of the greater ones; end of secondaries and tertiaries, inner margins of tail feathers, upper and under tail coverts and tibia, white.

Length, 5.25; wing, 3.

Habitat, North America generally.

SPINUS PINUS (WILSON). (533.)

PINE SISKIN.

This bird resembles the Goldfinch so remarkably in many of its habits as to have left no good reason for its specific difference, but in others it is so characteristic that the reasons are evident and satisfactory. It arrives here from some lower latitude about the first of April and remains, feeding mostly like the goldfinch, until about the first of June, when it is seldom seen except in coniferous timber where it breeds. I have never seen its nest, but find considerable discrepancy in the descriptions of different writers. Dr. Brown says it is "neat, is made of pine twigs, and lined with hair." Dr. Merriam says the nests are "a very bulky structure for so small a bird, and its rough exterior loosely built of hemlock twigs, with a few sprigs of pigeon moss interspersed, is irregular in outline, and measures about six inches in diameter. The interior, on the contrary is compactly woven into a sort of felt, the chief ingredients of which are thistle-down, and the fur and hair of various mammals."

The same authority says of the winter of 1878: "During the past winter and spring they literally swarmed in Lewis county, New York, and thousands of them bred throughout the heavy evergreen forests east of Black river, while many scattered pairs nested in suitable hemlock and balsam swamps in the middle districts." It is certain that Dr. Merriam's observations radically differ from any of my own, and where he further records the taking of eggs as early as March 18th, and the presence of the young in April, I am astonished, for while there may have been other similar observations in like latitudes I have never had them.

As before stated, these birds reach Minnesota early in April, after which they are often seen, both in small parties of their own, and associated with the Goldfinches. At the time of their arrival, and for some time afterwards, the casual observer would scarcely distinguish the two species, or the sexes of

either, so little difference is there in their appearance when on the wing or perching a little distance away. But the males of the Goldfinches in due time begin to don their courting dress of strongly contrasted colors, and become more exclusive in their association with their own species until the breeding season is over. The song of the Pine Finch is so much like that of the other species, that I have only learned to distinguish it by its softer tones and lesser volume when both are in act of singing. They build their nests about the beginning of the second week in June, chiefly of twigs of spruce, or larch, in the section where I live, but uniformly of pine where those are found, (with which I have found a few coarse hairs from the tails of cattle in one or two instances) and line it with hairs of different kinds in as pretty a manner as almost any nest I have seen. One nest sent from Princeton, had the largest amount of those coarser hairs in its main composition of any I have seen. When these birds are devoted to incubation, they are very rarely seen except specially sought for by one somewhat familiar with them. Indeed their *incognito* continues until about the second week in August, when families of half a dozen may occasionally be seen flying loosely about the backside of a stubble field, lighting here and there on the fences, or on the branches of some isolated tree left standing in the field for its shade. Later, they may be often detected in scattering flocks of the Goldfinches. These two species become more and more associated as the season advances, until both gradually disappear amongst the latest migrants of the fringilline family in November even. I have received but little information through my correspondence to aid me in forming any approximate idea of the distribution of this species within the territory of my investigations. Of course, the principal numbers go still further north to breed, so that it is nowhere at any time an abundant species, if the principal portion of the season of migration is excepted.

SPECIFIC CHARACTERS.

Tail deeply forked. Above brownish-olive; beneath whiteish, every feather streaked distinctly with dusky. Concealed bases of tail feathers and quills, together with their inner edges, sulphur-yellow; outer edges of quills and tail feathers yellowish-green. Two brownish-white bands on the wing.

Length, 4.75; wing, 3; tail, 2.20.

Habitat, North America generally.

PLECTROPHENAX NIVALIS (L.). (534.)

SNOWFLAKE.

No Minnesotian, compelled by duties, or depletions of his purse, to see his more favored friends hie them away from our *zeros*, and *blizzards* without him, can fail to welcome and cherish his best appreciations of the Snow Buntings, which appear variously from the 25th of October to the 10th of November in bands, or small parties of a dozen to twenty or thirty. They are usually met with earliest in the more wild and unimproved broad prairies, where the seeds of grasses and coarser seeds are most abundant.

Indeed, in some of our severest winters which generally afford less deep snows, I have known them to remain in the most unprotected, fieldless sections, to such an extent that bird observers have insisted upon their exceptional scarcity until made aware of their mistake by accidentally visiting those localities during a severe storm perhaps. Undisturbed by the obtrusive presence of observers, they will perhaps seek their food under the slightest elevations, but they almost unexceptionally avoid anything approximating a covert. I was profoundly impressed with the wisdom of this habit many years ago. The day, in February, was one of those "only read of in books" by persons in the timbered, prairieless latitudes below us. The mercury was 37° below zero, (45° during the night following), and a wind from the northwest was blowing at a fearful rate when I was summoned professionally twelve miles away across continuous rolling prairie, with barely snow enough on the ground to justify runners instead of wheels. I began at once to observe frequent flocks of perhaps forty or fifty to one hundred Snow Buntings, almost unceasingly rollicking and cavorting on the wing as if to them it was "the great day of the feast." How they could survive, not to say possibly endure, such fierce blasts of frozen winds was inscrutable, but to see them apparently so jolly was more than a mystery. Presently in the very middle of the treeless waste, I saw a flock drop into a cluster of weeds slightly protected by a little elevation of the general surface of the ground, and instantly engage in feeding.

Scarcely a moment had passed when from another like elevation my eye caught a glimpse of an almost invisible tiny object, half a mile away to the northwest, coming like a bullet before the spinning wind, directly for the spot where the Buntings were feeding close to the drifted snow.

With all the powers of vision I had, aided by the direction of the cold winter's sunlight, I could not tell that it was even a living object until within a hundred yards of where I was, skimming within a hand-breadth of the ground, it swooped through the paralyzed flock bearing off a victim in less time than it takes me "to dot an i or cross a t." But in the same instant it passed me within thirty yards apparently unconscious of my presence, when I clearly identified the Sharp-shinned Hawk. Although so long a close observer of the habits of the winter birds here, I had not known of the presence of this hawk after about the first of November. Here was the secret revealed to my mind why these birds avoid the protection of better coverts.

According to all I have been able to ascertain, they arrive quite simultaneously in the upper Red river valley within our borders, and in the more southern localities in the State, in the family bands found in the remoter north, at or before migration. They remain in these smaller flocks until spring draws near, when they begin slowly to consolidate, so that by the time for their general movement northward, about the 25th of March to the 1st of April, they have gathered into immense flocks.

They spend their nights on the slightly protected inclinations of naked spots on the prairies, where I have many times found myself in the very midst of them before I know they were in the section. Stragglers occasionally linger long behind the general migrations. I met them as late as April 15th in 1875, and Mr. T. S. Roberts, of Minneapolis, secured a pair in very much altered plumage, on May 14th of the same year, if my memory serves me rightly. No nests have ever been reported, although from the circumstances last mentioned, I see no reason why stragglers may not breed here as "on the ground among low bushes," on a slope of the White Mountains, in New Hampshire, as reported by Mr. Langille, who states that the nest resembles that of the Song Sparrow, and contained young birds. He further says "Another is reported even from Springfield, Mass." In its wonted haunts for nesting it is said to "become a bird of accomplished song, building a substantial nest on the ground, and in the cliffs of rocks, lined with feathers and the hair of the Arctic Fox. The eggs are whitish-mottled with brown, especially around the large end where the blotches sometimes become a dark wreath."

Mr. Washburn reported a flock of six of these birds, October 22d, at Dead lake, Otter Tail county, and again on November 1st, at Lake Mille Lacs, where he found them abundant. He says: "When flying they utter a loud chirp, and with it a musical 'purr' which is very pleasing. The large flocks seemed restless and shy, flitting about like wind-blown snow flakes, the uneasiness of one bird seeming to communicate itself to the rest, and a whole flock would thus be kept in almost constant motion over the same bushes of the lake shore."

This allusion to its note and peculiar purring sound interlarded, expresses all of its habits in this respect that could be said in a chapter.

SPECIFIC CHARACTERS.

In full plumage the colors are entirely black and white. Middle of back between scapulars, terminal half of primaries and tertials, and two innermost tail feathers black, elsewhere pure white. Legs black at all seasons. In winter dress, white beneath; head and rump yellowish brown, as are also some blotches on the side of the breast; middle of the back brown streaked with black; the white on the wings and tail much more restricted.

Length, 6.75; wing, 4.35; tail, 3.05, first quill longest.

Habitat, northern parts of Northern Hemisphere.

CALCARIUS LAPPONICUS (L.). (536.)

LAPLAND LONGSPUR.

Another variably represented species of semi-arctic birds, occasionally appearing in countless thousands on our plowed fields, from the 15th to the 30th of September, remaining until December, when it disappears until in March, remaining about a month, when it moves northward again. Dr. Hvoslef reports it abundant at Lanesboro on our extreme southern line in migration. He saw it there on February 22, 1885, in a flock of five individuals on a high, bleak prairie. Prof. C. L. Herrick reported it abundant at Lake Shatek, in the same latitude. Mr. P. Clague pronounces it very abundant in migration at Herman, Grant county, a favored locality for most open-field birds.

Like the Snow Buntings, some of them linger in their vernal sojourn. In 1877, some were seen as late as May 3d. Although Dr. Coues, in his *Birds of the Northwest*, expresses the opinion that they may breed in Minnesota, I have gotten as yet no reliable evidence that they do. As of Snow Buntings, loiterers

may become so pressed with "imminent incubation" as to make a necessity of "sweating it out", rearing a family with the temperature, as occasionally, 103° in the shade.

It is known to breed on the meadows along the shores of the Arctic sea, in Alaska, where it arrives the second week of May. It is also at home about Great Slave lake and McKenzie river. At all these places its song is said to be eminently beautiful.

Dr. Coues tells us the eggs are rather pointed at the smaller end; are dark colored with a thick mottling of chocolate-brown through which the greenish-gray ground is scarcely apparent. The nests are constructed of such materials as are readily obtained in the surrounding localities, namely—"mosses and fine dried grasses, and lined with a few large feathers from water-fowls, and are placed on the ground, under tussocks, in grassy hammocks." As the name of this species naturally suggests, the nail of the heel-toe is long and straight like a spur, by which, if necessary, they could be readily identified

SPECIFIC CHARACTERS.

First quill longest; legs, head all around, and a semicircular patch extending to the upper part of the breast, black; sides of lower neck and under parts white, with black streaks on the sides and spots on the side of the breast; a short, brownish-white streak back of the eye; a broad chestnut collar on the back of the neck; rest of upper parts brownish-yellow streaked with dark brown; outer tail feathers white, except on the basal portion of the inner web.

Length, 6.25; wing, 3.90; tail, 2.80.

Habitat, northern portions of Northern Hemisphere.

CALCARIUS PICTUS (SWAINSON). (537.)

SMITH'S LONGSPUR.

This Longspur has become more commonly observed of late, but escaped my notice for several years after I resided here. A few are obtained in autumn from year to year, ever since it came under my observation. So far as I know, Mr. R. Kennicott (who obtained it in Pembina in September, 1857) was the first to discover it in what was then the Territory of Minnesota. It is usually associated with the Lapland Longspurs, and the identity is only discovered when in hand. I know no more of its habits.

SPECIFIC CHARACTERS.

Head black; a line passing over the eye, a small spot on the nape, another on the ears and a large patch on the wings, white; nuchal collar and the whole under plumage, brownish-buff-yellow; legs flesh color.

Length, 6.50; wing, 3.50; tail, 2.75; bill, .45.

Habitat, interior North America from Arctic coast to Texas.

CALCARIUS ORNATUS (TOWNSEND). (538.)

CHESTNUT-COLLARED LONGSPUR.

Another bunting that has been found to breed in the north-western portion of the State along the Red river as far south as Breckenridge and Traverse, about the habits of which I know very little beyond that fact. I spent several days in October, 1884, in Grant county, where I found quite a number of this species associated with the Longspurs, but of course I was too late for other observations. Whether they breed just there, or not I cannot tell, but in the next county west which lies for a long distance along the Red river, is where they have been repeatedly located.

Mr. Allen says:—"They breed of course on the ground, constructing a rather slight but neat nest of dry grass and the stems of small plants. The eggs appear to be commonly five in number, blotched and streaked with rusty or a white ground, full sets of which are obtained the first week in June."

It is known to breed extensively on the northern plains of Dakota.

SPECIFIC CHARACTERS.

Bill dark plumbeous; crown, a narrow crescent on the side of the head, a line running into it from behind the eye, entire breast and upper part of belly all round, black; throat and sides of head, lower part of belly, under tail coverts, and bases of the tail feathers, white; the white on the tail feathers runs forward as an acute point; a chestnut band on the back of the neck extending around on the sides; rest of upper parts grayish-brown, streaked with darker; lesser wing coverts like the back.

Length, 5.25; wing, 3.20; tail, 2.30; tarsus, 0.75.

Habitat, interior of North America, from the Saskatchewan plains to Texas.

POCETES GRAMINEUS (GMELIN). (540.)

VESPER SPARROW.

So common is this species that from the time of its arrival until its departure it will be seen almost anywhere one may go along the highways where there are fences or frills of low bushes. In driving from my residence in the city to my cottage on Lake Minnetonka, a distance of fifteen miles, I have seen over one hundred and fifty males in the time of incubation when the females were confined to their nests.

I think other similar highways would show relatively as great a number.

This species has greatly increased with the settling up of the country, as is the case with many others, the productions of agriculture affording so much more abundant food. Its habit of running considerable distances in front of the horse one is driving, and when forced to wing flits a short distance and again lights in the dusty road, is one that will compel its recognition as no other of its family does.

It uniformly arrives at this place about April 20th; in Fillmore county and westward into Pipestone, about ten days earlier. It may be well to note here that the thermal lines deflect much more northward after entering the southern portion of the State, a fact rather indefinitely evident in the migration of some species of birds, as well as the records of the signal service; and a bold line about one degree south of Minneapolis, is evident to any observing person in travelling by rail in that direction. It takes about five to ten days for the van of bird-migration to ride over this thermal barrier. In a close correspondence with several gentlemen residing in the southern tier of counties, who are interested in the study of the habits of birds, I have found this fact to be assured. Strange as it may seem, with less positive proof, there seems to be another similar line at a little greater distance north of this city where all is reversed again, so that I am now surprised to find migrants of the spring in Grant, or even Otter Tail counties as early as here. The nest of this species does not very materially differ from that of Savanna except in being concealed less than that more cautious species, and not quite so select materials used. The eggs, four or five in number, are a dull white thickly spattered with reddish-brown and lilac, but they vary considerably in the intensity of coloration.

Its plaintive song seems simple and easily described, yet in reality it is a very difficult task. In "Our Birds and their Haunts," by the Rev. J. H. Langille of Buffalo, N. Y., it is said "the melody of the bay-wing, if not so sprightly and varied, still bears quite a resemblance to that of the song sparrow, and is expressive of a tender pathos, which may even give it the preference. It is one of the few bird-songs which might be written upon a musical staff. Beginning with a few soft syllables on the fifth note of the musical scale, it strikes several loud, and prolonged notes on the eighth above, and ends in a soft warble which seems to die out for want of breath, and may run a little down the scale. Though the song is not brilliant, and rather suggestive of humble scenes and thoughts, "the grass, the stones, the stubble, the furrows, the quiet herds, and the warm twilight among the hills," it is nevertheless a fine pastoral, full of the sweet content which dwells in the bosom of nature. It is heard to the best advantage when the rosy hues of sundown are tinting the road, the rocks, and all the higher lights of the evening landscape. Then an innumerable company of these "poets of the plain, unadorned pastures," some perched on the fences, some on weeds and thistles, but many more hid in the grass and stubble, swell into their finest chorus, while most other birds are gradually subsiding into silence. It has been well said that the farmer following his team from the field at dusk, catches the Bay-wing's sweetest strain, and that a very proper name for it would be the Vesper Sparrow."

I find the Bay-winged Buntings quite uniformly represented in all parts of the State reasonably adapted to them. One correspondent who has been much interested in the local sparrows thinks the variation in the numbers of them in different years exceeds that of any other species except the Black-throated Bunting, (*A. bilineata*), sometimes there seeming to be almost an entire absence of them. My own observation measurably corroborates his, yet they have usually been well represented in the region where I reside. I can say, however, that few species have a greater range of measurements. Those are as follows in 33 cases: Length, 4.60 to 7.20; wing, 2.80 to 3.10.

SPECIFIC CHARACTERS.

Tail feathers rather acute; above light yellowish brown, the feathers everywhere streaked abruptly with dark brown, even on the sides of the neck which are paler; beneath yellowish white; on the breast and sides of neck and body, streaked with

brown; a faint light superciliary and maxillary stripe; the latter margined above and below with dark brown; the upper stripe continued round the ear coverts, which are darker than the brown color elsewhere. Wings with the shoulder light chestnut-brown, with two dull whitish bands along the ends of the coverts; the outer edge of the secondaries also white; outer tail feathers and edge and tip of the second, white.

Length, 6.25; wing, 3.10.

Habitat, eastern North America to Plains.

AMMODRAMUS SANDWICHENSIS SAVANNA (WILSON).

(542a.)

SAVANNA SPARROW.

Although seldom extremely numerous, the Savanna Sparrow is a common summer resident of Minnesota.

I have no knowledge of any dry prairie districts within the boundaries of my special observations where it has not, earlier or later, been found to spend the nidifying season. It reaches the principal points of notice from April 20th to May 5th, and proceeds to build its nest very soon afterwards, which is constructed of fine grasses and roots, and quite artistically interlaced, the finest of the material being disposed neatly on the inside. It lays usually four grayish-white eggs, covered rather irregularly with spots of umber-brown and lilac. Commonly two broods are brought out in a season.

The song is really one of the hardest to describe, and I shall not attempt it, but Dr. Samuels, in his "Birds of New England," has so admirably succeeded in approximating it that I shall avail myself of his rendering. He says: "It resembles nearly the syllables 'chewée 'chewitt 'chewitt 'chewitt 'chewéet 'chewée, uttered slowly and plaintively." I have seldom visited a section favorable to its breeding habits, but what, during a morning's rambles, I have not heard its characteristic song.

Mr. Washburn reports this species "extremely common in grass land throughout the Red river valley. I secured specimens ranging from the polar eastern varieties to the darker, sharply-marked western forms. From this fact, and from observations of other species, I am led to infer that the Red river valley, situated as it is with the western plains on one side and the Mississippi river on the other, forms as it were, a neutral ground where eastern and western varieties meet and interbreed to some extent, forming intermediate varieties, with intermediate shades of plumage."

A characteristic of many species of females under similar occasion, is very marked in this, in assuming to be badly wounded when incautiously driven from her nest. She drags one leg and its corresponding wing, as if she had been stepped upon by the ruthless intruder, and she successfully "fools the greenhorn," be he an oölogist or an other, by trotting him to a safe distance from her nest, when she suddenly forgets there is anything the matter, and flits away to a safe distance, from which to enjoy the disappointment of the intruder.

Their food, as with most of the sparrows, consists of small beetles and the finer seeds of grass and weeds.

So entirely terrestrial is this species in all of its habits, that after a lifetime's observation of them in nearly every state and territory of the United States and Canada, I have yet to see the first one of them perched on a tree, and only very rarely on a bush or a fence. No doubt that in extremely rare instances others may have witnessed such an event, but I make the statement to emphasize this characteristic of the species.

The localities in which I have found them, unlike many other species, have always been rather, indeed, quite restricted. To instance, when out on a collecting excursion, in which I drive over considerable territory which would average in all conditions favorably to their habits, I have not found them in more than three or four localities in a whole afternoon, yet if I return to those places many times afterward during the summer, I may depend upon finding them there. And between these sections of occupation, none, or if any, only an individual or two will be seen. Some of them linger far into October, and even November in exceptional instances, before their migration southward.

SPECIFIC CHARACTERS.

Feathers of the upper parts generally with a central streak of blackish-brown; the streaks of the back with a slight rufous suffusion laterally; the feathers edged with gray, which is lightest on the scapulars; crown with a broad median stripe of yellowish-gray; a superciliary streak from the bill to the back of the head, eyelids, and edge of the elbow, yellow; a yellowish-white maxillary stripe curving behind the ear coverts, margined above and below by brown; the lower margin consists of a series of thickly crowded spots on the side of the throat, which are also found on the side of the neck, across the upper part of the breast, and on the sides of the body; a few spots on the chin and throat; rest of under parts white; outer primary and tail feathers edged with white.

Length, 5.50; wing, 2.70; tail, 2.10.

Habitat, eastern North America.

AMMODRAMUS BAIRDII (AUDUBON). (545.)**BAIRD'S SPARROW**

Of this sparrow's appearance in Minnesota I said in a hasty list of birds of the State published by the survey in 1881, I think, "common along the Red river where it breeds." This probably was based upon a mistaken identity of the species by those reporting to me from that section. While it has been found there by several different collectors it is in no ways "common." I think all the specimens sent to me except one, have evidently been young birds, but the exceptional one was an adult male, the special characters of which were typical.

It is said to breed abundantly in Dakota. The nests are built on the ground, being constructed of the bark from weed-stalks and grass that are rather loosely disposed. They usually contain five eggs, the ground color of which is dull white, speckled all over with pale reddish-brown, with some darker blotches of the same.

SPECIFIC CHARACTERS.

Somewhat similar in general appearance to *Passerinus savanna*; back grayish, streaked with dusky; crown nearly covered by black streaks, but divided by a broad median band of brownish-yellow; eyelids, and a faint superciliary stripe, yellowish-white; beneath white, with a maxillary blackish stripe and some narrow streaks on the upper part of the breast and the sides of the throat and body; outer edges and tips of tail feathers white, the two outer feathers obsolete white; bend of wing white.

Length, 4.75; wing, 2.80; tail, 2.20.

Habitat, interior of North America from Saskatchewan plains southward to Texas.

AMMODRAMUS SAVANNARUM PASSERINUS (WILSON)

(546.)

GRASSHOPPER SPARROW.

This unobtrusive little sparrow, notwithstanding my vigilance, escaped my recognition for many years, simply because I had not heard his song under circumstances to associate it with him. But in 1875 Mr. T. S. Roberts identified it not far from the city, since which time it has become extremely common in restricted localities. It seems to choose, dry, barren, weedy pastures, and builds a nest on the ground consisting of dried grass lined with hairs. Its usual number of eggs is

five, but Mr. Samuels records one instance in which there were nine. They are pure white, speckled with reddish-brown, principally around the larger end. They arrive in this section about the 10th of May and bring out the first of their two broods about the middle of June. They leave the State, so far as I have been able to determine, about the first of October, although an occasional individual may linger still later. I found it in Grant county in considerable numbers as late as the time mentioned. It was on high and dry prairies. Mr. Washburn reports it in company with the Sharp-tailed Finch in the Red river valley about the first of September. Its characteristic song to my ears bears no other comparison than to a sound produced by running the finger nail rather deliberately over the tense teeth of a large fine-toothed comb, five or six times in succession. It also has a rather weak chirp when unemployed in this humble song. Some persons mention an almost invariable warble as prelude to the song-strains, but I have never detected it with sufficient certainty to record it.

NOTE.—Mr. Washburn remarks in his note upon this species:—"Frequently heard; and one specimen secured in Norman county, August 4th, measuring 4.75; 2.00; 2.00. The peculiar chirping, grasshopper-like note of this species, fitly compared by Dr. Hatch to the sound made by drawing the point of a knife across the teeth of a fine-toothed comb, is very deceptive. In August the note is short and rarely given; and when it is given, is so low that unless one is a very quick observer he cannot determine the locality of the bird's perch."

SPECIFIC CHARACTERS.

Feathers of upper parts brownish-rufous, margined narrowly and abruptly with ash color, reddish on the lower part of back and rump; feathers all abruptly black in the central portion; this color visible on the interscapular region where the rufous is more restricted; crown blackish, with a central and superciliary stripe of yellowish, tinged with brown, brightest in front of the eye; bend of wing bright yellow; lesser coverts tinged with greenish-yellow; quills and tail feathers edged with whitish; tertiaries much variegated; lower parts brownish-yellow, nearly white on the middle of the belly; feathers of the upper breast and sides of body with obsolete darker centres.

Length, 5; wing, 2.40; tail, 2.

Habitat, eastern United States and southern Canada to the Plains.

AMMODRAMUS LECONTEII (AUDUBON). (548.)

LECONTE'S SPARROW.

It affords me great pleasure to credit the discovery of this species within our boundaries to C. L. Herrick, now quite well known amongst western educators and to naturalists generally. I will transcribe that portion of a report* made to me, as State Ornithologist, in March, 1878, which pertains to this species:

“Six specimens have been taken in all. It was first obtained by Mr. C. L. Herrick on June 20th, 1877, when an adult male was secured and others noticed. On the following day a young bird was taken by the same collector in the same place. On the 22d, T. S. Roberts having been informed by Mr. Herrick of the capture of the sparrows, and the locality, visited the meadow and was rewarded with a fine male, a sight of one or two others, and an acquaintance with the song. July 17th Mr. R. S. Williams secured an adult female, and on August 1st a young bird. The last specimen was a bird of the year taken on August 8th by T. S. Roberts. These birds were all taken in the same locality—a ditched, but at the same time moderately wet meadow, supporting a heavy growth of grass, perhaps a foot and a half to two feet high, with here and there low swamp willows. The most swampy portion of this marsh is the home of marsh wrens, (both species,) a few Virginia Rails, Maryland Yellow-throats, Swamp Sparrows, etc.

“The bird in question, however, seemed to prefer the dryer parts around the edge. Here the collector, walking quietly along, may hear in the grass a smothered, rapid kind of chirping. Investigation shows it to proceed from Leconte's Bunting. The startled bird, if the collector is not a sure shot on the wing, flies in a wren-like manner for a moderate distance, and drops suddenly into the grass. It will now require patience to flush it again, and each successive attempt grows more difficult. The song is firm, wiry, and uttered with the head thrown up in the manner of the Yellow-winged Sparrow (*Coturniculus passerinus*). In fact the general character of the song is much like the ordinary efforts of this species. They sing at times on the ground among the tall grass, but mounted upon a small bush or other low elevation, is apparently the preference.

“It is probable that there are but one or two broods in this meadow, which was of limited extent, and as yet they have

*T. S. Roberts, C. L. Herrick, R. S. Williams, of Minneapolis.

been detected in only this one locality. The survivors apparently left in the latter part of August.

"An inspection of the dates given above, will show that the young buntings are taken at times considerably separated, and as they are probably all of the same brood, they afford excellent subjects for a few remarks upon the plumage of the first year. In the "Birds of the Northwest," page 135, Dr. Coues gives the characters of the immature birds taken by him. These were evidently older than those before us, as a comparison of the following with the description given by Dr. Coues will show. In adult specimens the plumage does not differ materially. The buffness of the breast and throat, and the intensity of the coloration generally, varies of course to a certain extent. All the tail feathers are acuminate, but the two central ones are very slender.

"The young we will designate Nos. 1, 2 and 3, respectively, in the order in which they were taken. All three show more or less strongly that fluffy, unsettled looking plumage characteristic of young birds for a short time after they become full fledged.

"No. 1, taken June 20th, is presumably, judging from date and appearance, the youngest. In this specimen, the entire under parts are light, diffuse yellow. Over the whole upper parts, including wing coverts and tertials, the feathers are either almost wholly saffron-yellow or broadly edged with this color. The wings, and to a slight extent, the tertials, show the chestnut edgings of the adult. The collar on the back of the neck but very faintly indicates that it will become chestnut and grayish. The feathers of the dark bands on the top of the head show the chestnut edgings of the adult. Across the back is a very slight tinge of buff, and the same area is thickly marked with small subdued streaks entirely across for a distance of half an inch, and as a feature of special note there is on each side of the throat a *very distinct maxillary streak*.

"In No. 2, taken August 1st, the lower parts are much less yellow, and the upper parts darker, while the chestnut and white of the interscapulars, and other feathers, are beginning to appear. The markings on the breast are firm and confined more to the sides, and while the maxillary streaks are still evident, they are becoming indistinct.

"In No. 3, taken August 8th, we have a much nearer approach to the adult. The under parts are beginning to appear white posteriorly and buffy anteriorly; the streaks of the median

line of the breast are obsolete; the maxillary streaks have disappeared, and the back part of the median line of the crown begins to show white.

"Here our evidence of the further changes ceases for want of specimens. There is still much difference between number 3, and the adult. In the former the characteristic chestnut and grayish collar has not appeared; the handsome white and chestnut markings of the back are wanting; the color and markings of the under parts are unsettled; the bill is light, instead of dark bluish-brown, and the whole general coloration is uncertain, and blended, very different from the bold, striking pattern of the adult. From these specimens we are therefore to draw the conclusion that in the *young* bird, distinct maxillary streaks are present, the breast is streaked thickly entirely across; the tail feathers though pointed, are not narrow and acuminate as in the adult; that yellow is the ground color of the entire plumage, tail and wings excepted, and lastly, that these characters gradually pass with age, into those of the adult."

The interest of ornithologists in this bird justifies the space we have given for the foregoing notes. They were penned only a comparatively short time after the rediscovery of the species, which was originally observed and named by Audubon, but for a long time lost. That this bunting breeds considerably in favorable localities, in a large part of the State, I have no doubt, as it has of late years come to be observed in the breeding season in Freeborn, Big Stone and Grant counties. I have never seen the nest or eggs, but my very reliable friend Lewis, who has explored northern Dakota, gives the former as essentially like that of the Yellow-winged Sparrow, but possibly constructed of a little coarser grasses, and a little bulkier in its general appearance.

SPECIFIC CHARACTERS.

"Bill much more slender than in *Emberiza henslowi*. First quill the longest, the rest diminishing rapidly. Tail emarginate and rounded, with the feathers acute. Upper parts light yellowish-red, streaked with brownish-black; the margins of the feathers and scapulars pale yellowish-white; tail feathers dusky, margined with light-yellowish; lower parts with the cheeks, and a broad band over the eyes, fine buff; median line yellowish-white; the buff extending to the femorals and along the sides, streaked with brownish-black. Throat, neck, and upper parts of the breast without streaks, and plain buff."

Length, 4.40; wing, 2.13; tail, 1.90.

Habitat, Plains eastward to Illinois, South Carolina, and Florida, and from Manitoba to Texas.

AMMODRAMUS CAUDACUTUS (GMELIN). (549.)

SHARP-TAILED SPARROW.

I have not had the opportunity to examine the specimens of this species secured by Mr. F. L. Washburn, but do not hesitate to introduce them into this report, believing him fully competent to their identification. In his notes of observations and collections in the Red river valley during July and August, 1885, he says of the Sharp-tailed Finch. "Three individuals secured, and others observed. Two were shot near Ada, and had dimensions 5:2:2 each. The third killed on the northern boundary at St. Vincent, measured 4.50:2:2. I found them in grass-land near water, associating with long, and short-billed Marsh Wrens."

SPECIFIC CHARACTERS.

Upper parts brownish-olivaceous; head brownish, streaked with black on the sides, and a broad central stripe of ash; back blotched with darker; a broad superciliary and maxillary stripe, and a band across the upper breast, buff yellow; sides of throat with a brown stripe; upper part of breast, and sides of body streaked with black; rest of under parts white, the edge of the wing yellowish-white.

Length, 5; wing, 2.30;

Habitat, Salt marshes of Atlantic coast westward to Minnesota,

CHONDESTES GRAMMACUS (SAY). (552.)

LARK SPARROW.

The Lark Finch may be justly considered one of the most abundant birds, according to relative numbers that we have for summer residents in the State, yet there have been years when their favored localities have been almost deserted.

It is found more or less common on the prairies, but so far as my own observation has noted them, they prefer the *vicinity* of open brush-land with a few deciduous trees not far away, and may there be found in greatest numbers. Its manners and habits commend it to the lovers of birds wherever it lives in summer.

Its song is really beautiful during the mating and brooding season, and may be heard in almost any direction in the early day and at evening about an hour before sunset, one singer answered by another until the sparrow song-wave seems to circle out of hearing in the distance. It is not entirely terrestrial, but often is seen perched on trees or fences even when

in the act of singing, although more commonly they seek but a slight elevation for pouring out their melodious song. They nest on the ground with remarkable attempts at concealment, and the structures are not quite as artistic as many others of the fringilline birds, consisting mostly of rather coarse grasses and weeds, with a lining of fine fibrous roots. They arrive in the vicinity of Minneapolis and St. Paul about the 25th of April, and nests are generally found about the 20th of May, occasionally one a little earlier, and they bring out usually two broods before the 20th of July of about five, but often six or seven of each. Their size and strongly marked colorings, and their want of greater caution in concealing their nests, makes birds and eggs both an easy prey to the smaller hawks or their relative numbers would be greatly increased. They seem to appear simultaneously all over the State according to reports from eight or ten counties scattered from the extreme southern to the northern boundary lines of the State.

Dr. Hvoslef reports nests and eggs at Lanesboro, Fillmore county, on the 15th of May. P. Lewis, at Herman, Grant county, on the 20th of the same month. Mr. Potts, in Big Stone, the 17th, etc.

The eggs are rather strikingly marked, being "white, curiously streaked in zigzag;" the markings sharply defined, and a rich, dark reddish brown or chocolate. They taper very little towards the smaller end giving them a decidedly globular form. These sparrows are all gone usually by the first of October, but a few have been seen considerably later in favorable autumns.

SPECIFIC CHARACTERS.

Hood chestnut, tinged with black towards the forehead, with a median and superciliary stripe of dirty whitish; rest of upper parts pale grayish-brown, the interscapular region streaked with dark brown; beneath white, a round spot on the upper part of the breast, a maxillary stripe and a short line from the bill to the eye, continued faintly behind it, black. A white crescent under the eye, bordered below by black, and behind by chestnut. Tail feathers dark brown, tipped broadly with white.

Length, 6; wing, 3.30.

Habitat, Mississippi valley region.

ZONOTRICHIA QUERULA (NUTTALL). (553.)**HARRIS'S SPARROW.**

My first observation of this noble sparrow was in October, 1870, and again in April. In May, 1876, it fell into my hands, and became frequently reported to me in the autumn. T. S. Roberts, near this city, and P. Lewis, in Pipestone, secured several. Indeed, for several years it has been often seen in migration. My correspondent, Dr. Hvoslef, at Lanesboro, shot several, the last one on the 11th of May, 1885, and others mention their assured presence still later in different localities, some of which, like the last mentioned, are in the southern tier of counties, and one on the St. Croix, east of St. Paul.

Observed in so many places late in the spring, I have expected to hear that the nest and eggs were found, in which expectation, however, I have thus far been disappointed. Nearly all the localities where it has been obtained have been along the course of streams and in the brush that fringes them.

SPECIFIC CHARACTERS.

Hood and nape, sides of head anterior to and including the eyes, chin, throat, a few spots in the middle of the upper part of the breast, and on its sides, black; sides of the head and neck ash-gray, with the trace of a narrow crescent back of the ear coverts; intersepal region of back, with the feathers reddish-brown streaked with dark brown; breast and belly clear white; sides of body light brownish, streaked; two narrow white bands across the greater and middle coverts.

Length, 7; wing, 3.40; tail, 3.65.

Habitat, middle United States from Minnesota west to Dakota and middle Kansas.

ZONOTRICHIA LEUCOPHRYS (FORSTER). (554.)**WHITE-CROWNED SPARROW.**

This species is frequently seen in migration both in spring and autumn mingled with others of the same great family in thickets and brushy land generally. I have found them during these periods more commonly along the borders of clearings in the numerous brush-piles, where they enjoy the safest covert from rapacious enemies while seeking their food of seeds and insects of different kinds. If encroached upon they will conceal themselves so closely as to lead one to suppose it an illusion that he had seen them at all until driven from their

hiding place by something thrown into their covert, when a dozen will dash out and into a low tree near by, or in a short, confused, desultory flight whip into another similar pile of brush, or a closer thicket. A beautiful bird, indeed, but they conceal their capacities for song until they reach their breeding localities, further to the north, where their *peé, deé, de, de, de, de, de*, the first two syllables of which are somewhat prolonged in 'crescendo,' and slightly rising inflection, with the remainder more rapid in 'diminuendo,' may be heard frequently repeated through the day in sunshine and shade, even far into the night.

They are usually seen in the more southern line of partially timbered counties about the 10th of March, and from the 15th to the 25th, over the rest of the State. My own earliest record of their arrival is March 15th, 1870, but in 1875, it was almost a month later. They remain until about the 1st of May—straggling laggards until still later. Kennicott found them at Lake of the Woods, May 31st. Dr. Hvoslef, reports them as "common some years" at Laeeseboro.

They build their nests on the ground, generally at the foot of shrubs, or bushes amongst coniferous trees in the north-eastern portions of this State. Its principal materials consist of dried grass, very fine inside and neatly finished within. During the months of March, April and May of 1891, I was much of the time at Florin, nine miles south of Sacramento, California, and from March 11th to May 8th it was the most abundant species at "Walnut Corners," (where my sister, Mrs. T. Renbick resides). The trees surrounding the dwelling were mostly English walnuts, and but little farther away the usual varieties of fruit trees. The street fence on two sides was a hedge and immediately about the house were a large variety of bushes, shrubs, etc., affording perfect covert for birds of several species. The House Finches were numerous and kept up a wealth of melody from the earliest dawn till the last rays of the setting sun faded away, but the still more numerous White-crowns were heard only in weak chip-notes until the 6th of May, when the inspiration of song broke their silence with melodies scarcely inferior to the Burions. It was beautiful, but to the casual ear, was so mingled with the notes of the other species that it was difficult to distinguish it fully, yet occasionally a strain would be completed alone, and then it was charming, excelled by but few of the sparrow kind.

SPECIFIC CHARACTERS.

Head above, upper half of loreal region from the bill, a narrow line through and behind the eye to the occiput, black; a longitudinal patch in the middle of the crown, and a short line from above the anterior corner of the eye, the two confluent on the occiput, white. Sides of head, fore part of breast, and lower neck all round, pale ash, lightest beneath, and shading insensibly into the whitish of the belly and chin; sides of belly and under tail coverts, tinged with yellowish-brown. Interscapular region streaked broadly with dark chestnut-brownish. Edges of the tertiaries brownish-chestnut; two white bands on the wing.

Length, 7.10; wing, 3.25.

Habitat, North America at large.

ZONOTRICHIA ALBICOLLIS (GMELIN). (558.)

WHITE-THROATED SPARROW.

No close observer of birds fails to recognize the claims that this regal sparrow has upon his admiration. His manners belong to more pretentious orders, and his supreme dignity suggests a miniatureship of some larger species. His very shyness is rather an expression of disregard of your presence in a slow and undisturbed removal from you. The song is touchingly sweet and very fascinating when once it has the undivided attention.

Mr. Langille says: "The notation of its song could be easily written on the musical staff. Beginning generally on the fifth note of the scale, after the first syllable it ascends to the eighth, or last note, and ends in four syllables more. After the first syllable of the song the bird will sometimes utter the second on the second or third note of the scale above, and then dropping back will render the remaining three syllables on the usual pitch for the ending. I have heard it begin on the last note of the scale, and after sounding two syllables, drop to the sixth interval for the remaining three syllables, thus giving a beautiful minor effect. If several are singing, they may each perform on a different key, one responding to the other from different dead trees or tall stubs in the neighborhood.

"The charm of the song is principally in the pathos of the tones, which resemble those of the Chickadee, being an inimitably tender and vibrating, or tremulous, whistle. There are few bird songs which are so affecting to an æsthetic nature as is this simple pastoral. The tenderest and most sympathetic ideas, with a tinge of melancholy, find their expression in these

strongly-characterized notes, which, as Thoreau says, "are as distinct to the ear as the passage of a spark of fire shot into the darkness of the forest would be to the eye." "Like most sparrows they build on the ground, amongst bushes. The nest is formed neatly of dried grass, weeds and mosses, and lined with finer grasses and fibrous roots. The eggs are grayish-white, spotted and splashed with brown and pale markings, and five in number.

It arrives in spring migration from the 25th of April to the 1st of May, and engages in nest-building from the 15th to the 20th of that month. About the 20th of September they begin to leave for the South in a very quiet, sparrow-like way, apparently in families or little colonies. Its food from the moment of its arrival until its departure makes it a friend to the farmer and gardener.

SPECIFIC CHARACTERS.

Two black stripes on the crown separated by a median one of white; a broad superciliary stripe from the base of the mandible to the occiput, yellow as far as the middle of the eye, and white behind this. A broad black streak on the side of the head from behind the eye; chin white, abruptly defined against the dark ash of the sides of the head and upper part of the breast, fading into white on the belly, and margined by a narrow black maxillary line; edge of wing and axillaries yellow; back and edges of secondaries rufous-brown, the former streaked with dark brown; two narrow white bands across the wing coverts.

Length, 7; wing, 3.10; tail, 3.20.

Habitat, eastern North America, west to the plains.

NOTE. It has never been my fortune to hear the song of the White-throated Sparrow in the night, after the manner of the nightingale, but Samuels in his "Birds of New England," page 61, says after graphically describing a bird-chorus made up of the notes of the Virginian owls, loons, etc., etc.: "After this had died away and all was still, there came from a bush near our tent, the almost heavenly song of the White-throated Sparrow, the 'Nightingale of the North.' One cannot imagine the effect produced by the contrast; he must be on the spot in the dark night, and through the sighings of the winds amid the grand old trees, hear the loons, and then the silence broken by the beautiful song of the nightingale."

SPIZELLA MONTICOLA (GMELIN). (559.)

TREE SPARROW.

A very abundant species which seldom, if ever, leaves the state during the coldest winters, and breeds extensively about the lakes and streams bordered with alders, willows and low

trees, more especially in the north and eastern portions. The nests are found in trees, bushes and on the ground, formed exteriorly of dried grass and mud, and lined with down from woods and fine, soft hairs. Eggs, light greenish-blue, marked with blotches and spots of different shades of red and brown, resembling much those of the Song Sparrow.

When I record as a permanent resident a species so well known as the Tree Sparrow, I take for granted that no one will infer it to be anywise abundant during our rigorous winters. During those seasons only small flocks are ordinarily seen, sometimes only two or three individuals until approaching spring, when these smaller bands are merged into larger ones, until by the latter part of March—the time the migration northward is begun—when they may be only surpassed in numbers by the Snowbirds.

The earliest I have ever met them near this city was March 3, and the latest individuals have rarely lingered until the last of April. Their times however of principal arrival and departure have averaged March 25th and April 25th. They return from their more northern breeding places about the 25th of September to the first of October, varying greatly with the thermal character of the seasons. The greater part of them leave us here about the 15th of November. I saw some December 25th, 1874, and Mr. John Roberts again saw small parties of them in January, 1876. Dr. Hvoslef's notes at Lanesboro record them December 28th, February 23d, March 18th. I have a letter from him under date February 3d, 1886, which says:—"There are hundreds of them here."

I cannot, in speaking briefly of some of their habits, refrain from transcribing a few lines from the pen of Dr. Coues in "Birds of the Northwest," page 147. He says:—"On several occasions, when the thermometer was far below zero, the river frozen solid for two feet in depth, and snow on the ground, I have unexpectedly come upon little groups of these birds hiding away close to the ground, amongst and under a network of vines and rank herbage, close enough to collect and retain a mantle of snow. When startled at such times they have a low, pleasant chirp as they flutter into sight among the brushes, scattering a little, but only to collect again and seek their snug retreat as soon as left to themselves. Whether rendered careless by the cold, or through a natural heedlessness, they are very tame at such times. They sit unconcernedly on the twigs, it may be but a few feet distant chirping

cheerfully, with the plumage all loosened and puffy, making very pretty 'roly-poly' looking objects. There is a particular kind of plant here, the seeds of which endure all winter, furnishing a favorite repast. In a clump of these tall weeds dozens of the birds may be seen together busily feeding. Some, more energetic, spring up and cling to the swaying penicles, picking away, while others gather about the stem, getting a good dinner without trouble off the seeds that their neighbors above rattle down. At such times the whole company keep up an animated conversation, expressing their satisfaction, no doubt, in their own language; it is more than chirping and not quite singing—a low, soft, continuous chanting, as pleasing as it is indescribable. The Tree Sparrow is, indeed, one of the sweet-voiced of our sparrows and one very fond of singing, not only in the spring, but at other seasons; times are hard with it indeed when it cannot, on occasion, tune its gentle pipe."

SPECIFIC CHARACTERS.

Middle of the back with the feathers dark brown centrally, then rufous and edged with pale fulvous (sometimes with whitish); hood and upper part of nape continuous chestnut; a line of same from behind the eye; sides of head and neck ashy; a broad, light superciliary band, beneath whitish with a small circular blotch of brownish in the middle of the upper part of the breast; edges of tail feathers, primary quills and two bands across the tips of the secondaries, white; tertiaries nearly black; edged externally with rufous, turning to white near the tips; lower jaw yellow; upper black.

Length, 6.25; wing, 3.

Habitat, eastern North America west to the Plains.

SPIZELLA SOCIALIS (WILSON). (560.)

CHIPPING SPARROW.

"Chippie," as this most common sparrow is popularly called, is also named the Hair Bird, on account of its nearly uniform habit of lining its nest with coarse, long hairs. It builds in low trees, door-yard shrubs and currant bushes, preferably near the habitations of men. The nest consists of roots, twigs and grasses, lined as above.

Its proclivity to rear its young so near our homes, displaying the utmost confidence in man, picking up for most of its food his waste, is what has given it the scientific specific name "Socialis." Its common note and songs *chip-ip-ip-ip-ip-ip-ip*, have given it the common name with which the notice of this bird begins.

It arrives in the southern counties about the 1st to the 10th of April and in the vicinity of Minneapolis not very far from the 20th of that month, often a trifle later.

It may be that the absence of variety and greater modulation in the songs of the Chipping Sparrow will account for its absence from the songs of the poets, but its claims to the remembrances of man are second only to that of the bluebirds and robins. It even exceeds either of those species in the measure of confidence it manifests in coming to our very thresholds for the crumbs that fall from our boards, and tripping almost under our feet as we go about the garden or through the orchards. Its song, so monotonous as it is, ought to awaken our notice, for its associations are legions, reaching back through the many summers to the adieus to our very cradles. "We boys" recall the many times we used to find their nests, wondering where they got all the hair there was in their structure, and how they painted their eggs such a beautiful, bright, bluish-green, and speckled them at the large end with reddish-brown and black. And when the little eggs had all gone to smash, and some tiny, featherless little caricatures of blind birdies had taken their places with their hideous, yellow lined mouths constantly wide open, we were still more confounded with the dawning mysteries of life. All this with only a sort of a conventional protest from the confiding parents, ought now to give this humble, cheerful, plainly dressed sparrow a warm place in our memories. Its specific scientific name affords one instance of appropriateness amongst a large number, the selection of which is an impeachment to claims of advancement made for the race. Adam never burdened so many of the birds with the abominations employed in our scientific nomenclature of them, or he would have wanted to escape from the garden of Eden earlier than he was driven out.

SPECIFIC CHARACTERS.

Rump, back of neck, sides of neck and head, ashy; interscapular with black streaks, margined with pale rufous; crown continuous and uniform chestnut; forehead black, separated in the middle by white; a white streak over the eye, and a black one from the base of the bill through and behind the eye. Under parts unspotted whitish, tinged with ashy, especially across the upper breast. Tail feathers and primaries edged with paler, not white. Two narrow white bands across the wing coverts. Bill black.

Length, 5.75; wing, 3.

Habitat, eastern North America, west to Rocky Mountains.

SPIZELLA PALLIDA (SWAINSON), (561.)

CLAY-COLORED SPARROW.

The Clay-colored Sparrow was first brought to my notice in the spring of 1875, by T. S. Roberts. Very soon after he obtained his, a considerable number were collected by others as well as myself. Since that time it has become a decidedly familiar species, breeding along the Red river and eastwards to the vicinity of prevalent timber. It arrives in spring from the 25th of April to the 5th of May, but does not remain in this locality. The nest is found on the brush along the water courses, particularly those tributary to the Red river, and the low willow bushes bordering some of the lakes with which our State abounds. From all I have been able to learn from a variety of sources I think that incubation is inaugurated by the first week in June, and two broods of four each is the rule. The structure is, in the words of Dr. Coues' *Birds of the Northwest*, page 150,—“Inartistically built of fine dried grass-stems, and the slender weed-stalks, with perhaps a few rootlets. It is sometimes lined quite thickly with horse hairs, sometimes not, having instead some very fine grass-tops.”

The color of the egg is light green, and they are thinly speckled with several shades of brown. The speckling is principally confined to the larger end.

The habits of this species do not materially differ from those of the Chipping Sparrow. The song of the male is said to be less pretentious, but equally persistent with those of the last mentioned species, consisting of a monotonous trio of notes ending in a weak trill.

Their fall movement southwards is somewhat later than that of the Chipping Sparrow as I must not only infer from local observations, but from Mr. Washburn's notes of observations in the Red river valley. The latter, after having been ordinarily represented throughout that region, were gone while he still found *Pallida* “common indeed.”

He says: “I met old and young birds on the banks of the Red river, about Georgetown, on the first of August. The young then, were of all ages, but most of them full grown. With their parents they congregate in pastures, and on weed-grown fields in good sized flocks.” I think they have all left the State by the first or second week in October.

SPECIFIC CHARACTERS.

Back and sides of hind neck ashy; prevailing color above, pale brownish yellow, with a tinge of grayish; feathers of back and crown streaked conspicuously with blackish, the latter with a median ashy, and a lateral or superciliary ashy white stripe; beneath, whitish tinged with brown on the breast and sides, and an indistinct narrow brown streak on the edge of the chin. Ear coverts, brownish-yellow, margined above and below by dark brown.

Length, 4.75; wing, 2.55.

Habitat, interior of North America.

SPIZELLA PUSILLA (WILSON). (563.)

FIELD SPARROW.

About the 25th of April, or a little earlier, the Field Sparrows have got here as unobserved as a "frown upon the brow of twilight," and are then found in dry, bushy pastures, and low, open woods, away from the dwellings of men. By the second week in May they are engaged in constructing their nests of dried grasses and fine twigs loosely arranged and placed on the ground under a bush, or in it, as is the case occasionally. Four eggs constitute the complement, colored grayish-white with thinly scattered spots and blotches of reddish-brown and lavender. During incubation the male is heard singing from a perch on a low tree, or a rail of the fence. His song is a plaintive, humble ditty, poured out in the early morn and eve. In dark, cloudy weather he sings all the day long, as if fully appreciating the need of cheering the little bird-wife in the patient waitings of her maternity.

The song has no claims to melodious variety, while it fills no mean place in the grand choral of usual song. The best idea of it may be expressed in a recently employed combination of the following syllables adopted by Mr. Langille: "*Free-o, free-o, free-o, free-o, free, free, free, free, free, free*; the first four louder, well prolonged and on a higher key, while the remaining notes run rapidly to a lower pitch, growing softer and weaker to the end, the last being barely perceptible at a short distance. The song is quite constantly repeated at short intervals, and has a rather melancholy, but soothing, and pleasing effect, which sensitive natures readily recognize, and do not easily forget.

"It is the homely, pensive poetry of the thicket, that line of land where the cultivated beauty and fertility of the fields end, and the solitude and gloom of the forest begin."

No bird-notes of my own, or of my correspondents, fail to embrace this species in localities according with its well-known habits everywhere in the State. It is, however, not a numerous species.

SPECIFIC CHARACTERS.

Bill red; crown continuous rufous red. Back somewhat similar, streaked with blackish. Sides of head and neck, including a superciliary stripe, ash; ear coverts rufous; beneath white, anteriorly tinged with yellowish; tail feathers and quills faintly edged with white. Two white bands across the wing coverts.

Length, 5.75; wing, 2.35.

Habitat, Eastern United States and southern Canada, west to the plains.

JUNCO HYEMALIS (L.). (567.)

SLATE-COLORED JUNCO.

The snow-birds are so extensively distributed, and everywhere so well known, that any one at all acquainted with them will expect to find them included in our Minnesota birds. They may be listed as permanent residents, at least along our southern borders, where belts of timber between sheltering bluffs and along water-courses afford more favorable quarters during the severest weather. At the locality from which I write they are rarely seen in winter, but come in force variously from the 20th of March to the first of April, when one who "sees birds at all" must be prepared to have them spring up from almost any slightly protected ambush, and almost from under his feet, and simultaneously dash into the nearest thicket or brush-heap, to cautiously slip out of the hastily-chosen covert, one at a time, and flit to a safer distance, if not better hiding place. They usually, as a kind of feathered courtesy, or sort of a courtship, have mingled with them more or less abundantly, some of the other sparrows, amongst which are the White-crowned, Fox-colored, Clay-colored, Song and Tree Sparrows, etc. They have only a chipping note, while thus abundant, that very much resembles the true chippies (*spizella socialis*). By the first week in May the principal part of them have disappeared. They breed extensively in the north part of the State, and exceptionally in many others affording favorable conditions. Their principal food consists of larvæ and insects, especially small beetles, but they are quite omnivorous, devouring many kinds of seeds as well.

Their nests are remarkably well constructed and variously situated, generally on the ground under some bush or clump of weeds; it is occasionally built in a low bush, and rarely on an old log or stump. The number of eggs rarely exceeds four, that vary in color from nearly pure white with reddish spots, to grayish-white with reddish-brown spots, and bluish-white with a roseate tint and spots of umber, reddish-brown and lilac.

As to *varieties* of this species as observed within my province I can only say if such are well founded they are all here. A single excursion of a few hours has put them all into our basket too many times to leave any question of doubt. But for the special benefit of those who are seeking for evidence that this omnipresent species is, in fact, not a species, but a long drawn out series of *varieties* in rapid process of evolution into many species, I will transcribe a report of T. S. Roberts, R. S. Williams and C. L. Herrick concerning these birds. T. S. Roberts, a very careful and conscientious observer, has the credit of writing it. Amongst a list of others he says, "We mention the Snowbird only to call attention, briefly, to the forms or species noticed in this locality. Sufficient material is not at hand to do the matter justice, but from the nine skins before us we select the three most decidedly marked birds. First is *hyemalis* proper, showing nothing but the characters of this form. Second is a specimen of *oregonus* (Townsend) Sel. The colors are bright, sharply defined, and just as decided as *oregonus*. It was taken in the spring of 1876, by R. S. Williams, and is apparently a typical specimen of this western form. The third is a very strongly marked specimen of what is called *annectus*, Bd. This bird was taken October 5, 1877, by T. S. Roberts, from a straggling flock of Snowbirds, among which it immediately attracted attention by its peculiar colors. R. S. Williams has a partly albino *Junco* taken in the fall, which is also plainly this form."

I am gratified at the growing indications of a general halt along the line of evolutionary varieties in the avi-ological march.

More will be known of the Juncos a thousand years hence. Perhaps then some typical embodiment of accumulated knowledge, from underneath this No. 11 Sombrero, shielding him from the rays of a tropical March sun, will be sitting upon a jutting rock overhanging what was once the renowned Falls of St. Anthony, his two eyes merged into one now composed of a series of compound lenses with which he alternately looks

upon the moving protozoans in the rapid waters beneath him, and the moving shadows in the mountains of the belated moon, while ruminating upon the unfolded life-history of what was once considered a simple species, pregnant although with the potency of genuine possibilities—Presto Junco!

NOTE. The above was written before a number of my ornithological friends of the State verbally reported to me some extensive comparisons of the Juncos obtained in migration which showed a graduation from *hyemalis* into *oregonus*, which since that time I have measurably verified. Reconsolidation is the natural order of the day. Let the good work go bravely on.

P. L. H.

SPECIFIC CHARACTERS.

Everywhere of a grayish, or dark ashy-black, deepest anteriorly; middle of breast behind and belly, under tail coverts, first and second external tail feathers, white; third tail feather white, margined with black.

Length, 6.25 wing, 3.

Habitat, North America at large.

MELOSPIZA FASCIATA (GMELIN). (581.)

SONG SPARROW.

Usually about the 15th of April, in 1869 as early as March 19th, upon visiting the borders of heavy timber lands bordered with thickets and brush, I have been captivated by the song of this beautiful singer, made most welcome by his long winter's absence. It is easy, amid the grand chorus of bird-song in May, to overlook this sweet songster, but never when we first meet him under such circumstances. He seems to have chosen his rostrum upon the very border of winter's receding trail, from which he twitters, trills and rolls his wondrous melodies into the very soul of advancing spring. The frosts of early morning, those trembling jewels which flash back the departing glories of the winter, seem to charge his every bone, muscle and feather with the fulness of the inspiration of song, which he pours at the feet of the new-born season.

At this time small numbers associate in bands, but their rival melodies soon awake the conjugal instinct and in a short time mates are chosen and the summer's welcome task begun.

The earliest nests I have found in process of construction were begun in the first week in May, but I cannot divest myself of the conviction that they will be found occasionally much earlier than that in favorable seasons if diligent search is made.

It is well known to bring out two broods, and sometimes three in the same season.

The nest is composed mostly of dried grasses and frequently lined with horse hair. It is found usually in spring directly on the ground under some kind of shelter, perhaps a clod of earth, a bunch of grass, a bush or a root, yet may be in some exceptional place like a stump, in a hedge or even in a castaway old teakettle. One is said to have been found in the crown of an old "plug" hat hanging in a hazle brush. The general coloration of the eggs, I should say, is bluish-white, but they are almost unparalleled in their variability, and different eyes seem to see the same eggs "in a different light." The markings are brown touched with lilac. Minnesota is probably about the western border of their fullest representation. They are relatively abundant here and yet twenty-eight years ago I did not see more than one-tenth of the present numbers. Their food-habits make them a necessity to agriculture, so they have come with or close upon the heels of the farmer and gardener.

Owing to their disregard of a little snow and considerable frost, we find them almost simultaneously appearing in all the principal and more cultivated sections of the State. I have special reports of its appearance from the line adjoining Iowa to Detroit lake, on the Northern Pacific. It lingers quite late in autumn, and even into early winter in the southwest portions of the State, in the dense thickets of the heavily timbered localities.

Mr. Washburn found Song Sparrows at Dead lake at the head of Dead river, northwest of Otter Tail lake, in Otter Tail county, as late as October 13th, and expresses a very decided opinion, based upon local inquiries and observations, that this species remains much later.

SPECIFIC CHARACTERS.

General tint of upper parts rufous-brown, streaked with dark brown and ashy-gray; crown rufous, with a superciliary and median stripe of dull gray, the former lighter; anteriorly nearly white, with a faint shade of yellow; each feather of the crown with a narrow streak of dark brown; interscapulars dark brown in the center, then rufous, then grayish on the margin; rump grayer than upper tail coverts, and both with obsolete dark streaks; a whitish maxillary stripe, bordered above and below by one of dark rufous-brown, with a similar one from behind the eye; under parts white; breast, sides of body and throat streaked with dark rufous, with a still darker

central line, these marks rather aggregated on the middle of the breast so as to form a spot; no distinct white on tail or wings.

Length, 6.50; wing, 2.60; tail, 3.

Habitat, eastern United States to Plains.

MELOSPIZA LINCOLNI (AUDUBON). (583.)

LINCOLN'S SPARROW.

Of the habits of this species, quite common in both migrations, I know very little, except that I cannot separate it from the Swamp Sparrows until I have it in my hand.

Mr. R. S. Williams of Minneapolis, was the first to bring this locally new species "to bag" in the State so far as I am aware. This he did on the 9th of May 1876. Mr. Robert McMullen obtained another on the 12th of the same month. Since then few collectors have failed to appropriate one or more of their skins, in the interest of science, or the fun of shooting. From reports sent me annually from "beyond the Big Woods," the great deciduous belt of timber traversing a good portion of the State from north-east to south-west, I am assured of its abundance in the period of both migrations in which it shares the general characteristics of the Swamp Sparrows.

I have been less favored with observations of this species in the southern sections, but have no doubt that it is equally represented. Dr. Coues says its range embraces the whole continent. Somewhat unequally distributed: it is rare in the east; but abundant in Colorado; common in Iowa; numerous in Illinois; but only in migration except in the mountains near Idaho spring where "it breeds about 9,500 or 10,000 feet up to timber line." In *Birds of the North-west* he again quotes from Mr. Allen who states it is "an abundant summer resident of the mountains of Colorado, from about 8,000 feet to above the limits of trees. It is found chiefly in the vicinity of wooded streams, and in moist or swampy thickets, being essentially a woodland bird. Its song is rather feeble, but pleasant and varied, and generally uttered for a considerable period from some elevated point of the thicket. It is one of the few species that are as abundant at the timber-line as at the lower points. I also met with it sparingly in May in eastern Kansas, and found it abundant in the vicinity of Ogden, Utah, in September."

SPECIFIC CHARACTERS.

Crown chestnut, with a median and two lateral, or superciliary ash colored stripes; each feather above streaked centrally with black; back with narrow streaks of black; beneath white, with a maxillary stripe curving round behind the ear coverts; a well defined band across the breast extending down the sides; under tail coverts brownish yellow; maxillary stripe margined above and below with lines of black spots; throat, upper part of breast, and sides of body, with streaks of black, smallest in the middle of the former; a chestnut stripe back of the ear streaked with black; the pectoral bands are sometimes paler.

Length, 5.60; wing, 2.60.

Habitat, North America at large.

MELOSPIZA GEORGIANA (LATHAM). (584.)

SWAMP SPARROW.

The local habits of the Swamp Sparrow are such that none but a close observer could form any correct idea of its relative numbers. It will have become installed in its summer haunts, and engaged in the building of its nests, or even in somewhat advanced incubation, before we are aware of its presence, unless considerable vigilance has been maintained through the early spring. For many successive years I failed to detect its earliest arrival, and have settled into the opinion that it was rather a late sparrow in its migrations, notwithstanding my knowledge of its late departure in autumn. But a friend who had no special interest in ornithology was fond of duck shooting that brought him much in the way of the incoming birds of the spring, and I suggested to him that he keep one end of his bag for "small fry" and he kindly collected specimens of many species of exceeding interest to me, and to local ornithological science in general, amongst which was this bird, obtained on the 13th of March. He was an exceedingly modest man, and peremptorily forbid my putting his name in print, which injunction for about one-fifth of a century I have faithfully observed, but now that his name has already leaked out, I feel relieved of my obligation, and I am impelled to state here that his name was John Smith. I will have the burden no longer. The world shall know who he is. From that day forward I have been able to date the average time of the arrival of the Swamp Sparrow the 1st of April—1864, March 29; 1867, April 5th; 1870, April 2d; 1875, March 30th; 1878, March 13th. These dates are abundantly corroborated by corresponding observa-

tions throughout the State. On its first arrival it will be found in rather low brush, or thickets in the woods in the vicinity of streams or swampy marshes and in parties of perhaps half a dozen mates who vie with each other in delightful song. A few days later and the females have come, but when and how, is more than has been reliably recorded. It is not very long before the nest is jointly built of patent sparrow material, weeds, stalks, leaves and grasses lined with fine grades of the latter. It may be on the ground, or in a low bush, or even a low tree. From four to five eggs constitute their "clutch," variously marked, the ground color grayish, or bluish-white and thinly scattered spots of reddish-brown, increased to confluent splotches of umber-brown, mostly at the greater end. I think that as a general thing they raise three broods of young. Mr. J. W. Bostwick found a well identified nest of four eggs on the 25th of April, near Pig's Eye, an unromantic name of a romantic and eminently historic suburb of St. Paul. Mr. E. P. Herman, found young birds in the nest unable to fly on the 24th of August.

I deem it one of the most numerous of the fringilline birds breeding in Minnesota. It is everywhere equally abundant in the brushy woodland districts which I have visited, from Moorhead to Albert Lea, and from the St. Croix to Big Stone lake. Mr. P. Lewis found it "everywhere in Grant and Douglas counties,." Mr. Washburn reported it abundant everywhere in the Red river valley in August, and still represented at Dead lake October 10th. It has been my own experience to find a remnant of them still in the vicinity of Minneapolis as late as the 10th of November, but the larger portion are gone by the 25th of October, as a general rule.

Their food consists of insects, wild rice and grass-seeds. When flushed they seldom seek the shelter of trees, but skulk from one thicket to another and flirt their tails vigorously while flying.

SPECIFIC CHARACTERS.

Middle of the crown uniform chestnut; forehead black; superciliary streak, sides of head and back and sides of neck, ash; a brown stripe behind the eye; back broadly streaked with black. Beneath whitish, tinged with ashy anteriorly, especially across the breast, and washed with yellowish-brown on the sides. Wings and tail strongly tinged with rufous; tertials black, the rufous edgings changing abruptly to white towards the end.

Length, 5.75; wing 2.40.

Habitat, eastern North America to the Plains.

PASSERELLA ILIACA (MERREM). (585.)

FOX SPARROW.

The earliest knowledge of this pretty sparrow I obtained, was from a specimen presented me by a Mr. Van Druberg, who collected it near the city on the 22d of September, 1870. It was obtained still later that year, but I have lost the precise date. Since then I have met with it frequently in both spring and fall migrations, and not infrequently associated with the true Snowbirds. It comes early and stays several weeks.

My own notes through a long series of years, average the arrival in spring from the 1st to the 10th of April, but Mr. John Roberts obtained some on the 13th of March, 1878. I have no doubt that the average will be found about the 1st of April. Dr. Hvoslef found it on the 28th of March in Fillmore county and again on the 2nd of May, 1885, which is the latest record I have in spring. The earliest date of its autumnal arrival is September 17th, so far as I know.

It cannot be said to be abundant, but is sub-common in the lines of its favored migration. Its habits are such that it must be sought to be found, seldom approaching very near to habitations, yet often not very far away if it has the coverts of thickets bordering heavier timber. Mr. William Howling, for a great many years the principal taxidermist of Minneapolis, obtained a single individual in his shruberry on the 8th of April, 1875. But I have never known of another such in the city.

Wilson, the immortal historian of the birds, says of this species:—"They are rather of a solitary nature, seldom feeding in the open fields, but generally under thickets or among tall, rank weeds on the edges of fields. They sometimes associate with the snowbirds, but more generally keep by themselves. Their manners very much resemble those of the Red-eyed Bunting; they are silent, tame and unsuspecting. They have generally no other note while here than a *shep, shep.*"

Dr. Coues' facile pen grows fervid while describing the Fox-colored Sparrows on page 161 of his "Birds of the Northwest:"—"The Fox Sparrow enters the middle states from the north in October, and by the first of the following month has become abundant. Some linger here through the winter in sheltered situations, but the greater number repair further south early in December to reappear the latter part of February, thus escaping the coldest weather."

“During the winter they are dispersed over the southern states, beyond which, however, they do not appear to pass, as I have found no record. In March they again become plentiful in the middle states, and, having already taken up their line of migration toward their homes in the north, their coming is with songs of gladness and all the busy stir of the opening season.

“They are not all off until April, and during the sunny days that precede their departure the males are fond of mounting the little bushes or even the trees, to warble a few exquisitely sweet notes, the overture of the joyous music which, later in the year, enlivens the northern solitudes, whither the birds resort to nest. So musical is the Fox Sparrow indeed, that even in autumn, when the transient glow and fervor of the nuptial period has subsided and commonplace occupations alone engage him, he forgets the dull season at times and lisps fugitive strains of sweet memories awakened by the warmth and glamour of the Indian summer. But this is a mere fragment—the shadows of a song stealing across the mind, not the song itself, which is only heard in perfection when the bird’s life is quickened in the sunny, showery April, and he leaves us with cheery “good-bye,” promising to come again. What one of our fringilline birds is so entirely pleasing as this, my favorite? Strong, shapely, vivacious, yet gentle, silver-tongued; clad most tastefully in the richest of warm browns, and that nothing may be wanting to single him out from among his humble relations. A highbred, exclusive, retiring bird. We do not find him mixing indiscriminately with the throng of sparrows that accompany him in his journeys and spend the winter with him. With a few select associates of his own kind, perhaps only two or three families that were reared together, he chooses his own retreat and holds it against intrusion. In some little glade, hedged about with almost impenetrable briers, you will come upon him and his friends nestling among the withered leaves on the ground, gently calling to each other in the assurance of safety. On your unwelcome appearance they will hurriedly take flight together, throwing themselves into the thickest shrubbery. You will find such company again in the ravines overgrown with *smilax* and brambles that lead down to the brook; and as you pass along neglected fences, fringed with tall, rank weeds, you may surprise the birds out

for a morning ramble and make them hurry back in alarm to the shelter of heavier undergrowth."

They do not breed in the United States as is yet known

SPECIFIC CHARACTERS.

Middle of back dull ash, each feather with a large blotch of brownish-red; top of head and neck and rump, similar, but with smaller and more obsolete blotches. Upper tail coverts and exposed surface of wings and tail bright rufous. Beneath white, with the upper part of the breast and sides of throat and body with triangular spots of rufous and a few smaller ones of blackish on the middle of the breast. Inner edges of quills and tail feathers tinged with rufous-pink. No light lines on the head, but a patch of rufous on the cheeks. First quill rather less than the fifth.

Length, 7.50; wing, 3.50.

Habitat, eastern North America, west to the Plains.

PIPILO ERYTHROPTHALMUS (L.). (587.)

TOWHEE.

This is a very common summer resident throughout the entire State, arriving the last week in April, at the latitude from which I write. It reaches the borders adjoining Iowa from the 10th to the 15th of April, and Grant county in the first week of May. Few but those who are looking for these birds will be likely to recognize their earliest appearance owing to their shy, skulking habits. A ready pen in the hand of a keen observer says: "Thickets, brushy pastures and barren tracts on the higher grounds are the favorite resorts of this species. The bottom poles of an old rail fence among the briars by the woods, is very likely to be its thoroughfare; and at all times it keeps, for the most part, on or near the ground. Sit down quietly in the thicket and you will hear its sharp rustle as it scratches among the dry leaves; this hen-like scratching, probably in search of food, being one of its marked characteristics of habit. As it flits from bush to bush, never flying far nor high, you can hear the *whir-z-z-r* of its rounded, concave wings, and as it opens its long, fan-like tail, with a jerking motion, the white markings contrast strongly with the jet black figure. It hops, and sidles, and dodges about, in and out through the brush-pile, the brambles and the thicket, with a nervous, sparrow-like movement, its tail being often thrown up, after the manner of the Chat, or Wren."*

*Our Birds and Their Haunts, page 577. (J. Hibbert Langille, M. A.)

They build a very concealed nest the last week in May—sometimes a little earlier—in an excavation in the ground deep enough so that it is, when finished, about even with the surrounding surface and under cover of brushwood or in a thick tuft of grass. It is bulky, consisting of shreds of bark and dry leaves, and is lined with fine grass. It lays about five eggs of a dingy white color, finely speckled all over with reddish-brown and lilac.

SPECIFIC CHARACTERS.

Upper parts generally, head and neck all around, and upper part of the breast glossy black, abruptly defined against the pure white that extends to the anus, but is bounded on the sides and under the wings by light chestnut. Under coverts similar to sides, but paler. Edges of outer six primaries with white at the base, and on the middle of the outer web; inner two tertiaries also edged externally with white. Tail feathers black; outer web of the first, with the ends of the first to the third, white, decreasing from the exterior one. Iris red.

Length, 8.75; wing, 3.75; tail 4.10.

Habitat, eastern United States to the Missouri river.

CARDINALIS CARDINALIS (L.). (593.)

CARDINAL.

I have on several occasions referred to this southern species as an accidental straggler into Minnesota. Since the last of my lists was published, I have had further evidence that it has been seen under circumstances and at such times in the year as to justify the recognition of being an occasional summer resident in the southeastern portion of the State and northeastwardly into the more central portions. Those places where it has been observed have been, so far as my sources of information extend, in the vicinity of clearings and improved farms in the larger bodies of deciduous timber.

It has proved to be much less a strictly southern bird than the early writers supposed. A permanent resident there, it becomes decidedly migrant after reaching Virginia and Pennsylvania, Ohio, Indiana and Southern Illinois. It has been observed as far north on the Atlantic coast as Nova Scotia, and now, as above recorded, in Minnesota in the interior. Considerable numbers of them are permanent in Ohio, remaining in pairs in patches of woods near cornfields. When speaking of northern Ohio, Rev. J. H. Langille says of this species "more common in winter than in summer."

They are said to locate their nests in bushes, and trees, much after the manner of Catbirds. The nests consist of small twigs, dry weeds, strips of grapevine bark, leaves, coarse grasses, etc., lined neatly with fine grass. The eggs four to five, are somewhat variable in coloration from a gray to a clear white, and two broods are raised each season as a rule.

SPECIFIC CHARACTERS.

A flattened crest of feathers on the crown. Bill red, body generally bright vermilion red, darker on the back, rump, and tail. Narrow band around the base of the bill with chin and upper part of the throat black.

Female of a duller red, and this only on the wings, tail and elongated feathers of the crown. Above with light-olive, tinged with yellowish on the head; beneath brownish-yellow, darkest on the sides, and across the breast. Black about the head only faintly indicated.

Length, 8.50; wing, 3.75; tail, 4.50.

Habitat, more southern portion of United States to Missouri.

HABIA LUDOVICIANA (L.). (595.)

ROSE-BREASTED GROSBEAK.

This beautiful bird, and sweetest of singers, comes to us in the last days of April, or the first week in May. They appear almost simultaneously in every brushy and wooded section of the State, from Iowa to the British possessions. It is so conspicuous that I have had no difficulty in getting observations of its earliest arrivals from all points where I have correspondents. Rev. E. Lyman Hood, an oölogist and general ornithologist, reported this bird as early as April 17th. Prof. Herrick on the 25th of the same month. P. Lewis, in Grant, and Dr. Hvoslef of Fillmore, the 29th of April.

All speak of the appearance of the males some days before the arrival of the females. During this interval they are quite reticent, and are employed for the most part in peering about the brushy and timbered margins of ponds, marshes and streams most favorable for their supply of food. When the females arrive "the music opens;" for of all the exhibitions of chivalric fighting for sweet love's sake in the bird kingdom, theirs is at the head. A single instance out of a great many will be enough. While observing the spring birds with one eye and watching game ducks with the other, on the 26th of April, a rather raw, windy day, I heard the familiar voice of this grosbeak, which was instantly duplicated by several others,

and before I could turn around six of this species were almost within my reach directly before me, one of which was a female, that perched upon the top-most branch of a bush a little further removed, and the males all singing, poised on their wings and at the same time pecking, biting, tearing each other until the blood was dripping from one of them—never sweeter nor half so varied melody from the throats of these birds, each apparently at his very best endeavor, while maintaining the bloodiest bird battle I ever witnessed. The mystery was, where the notes found a vent through bills occupied with the gore and feathers of such conflict, or where such savagery could reach its foe through beaks so exquisitely freighted with melody! Although, unavoidably cognizant of my proximity they entirely ignored my presence, and continued the battle in a heterogeneous melee, surging, backward, forward, upward, downward, once directly through a leafless oak bush of considerable size down onto the ground, and up again, never for a single moiety of a moment relaxing or diminishing their mellifluous torrent of melody, until two dropped to the ground absolutely exhausted, with their wings extended, their mouths open, and panting as if life was ebbing away at the very moment. The other three sought the nearest perch upon some brush and a wood-pile, one of which alone continued his perfectly maintained song. During this Balaklavian charge of the feathered cavaliers, I glanced at the familiar female, who, without seeming to entertain the least concern about the ambitious singing, or the grand result, was pruning her feathers, in the calm, composed deliberation of an exemplary grandmother getting ready for church or prayer-meeting.

In a few minutes, perhaps I should say moments (for one does not measure time very accurately under such circumstances), the exhausted pair gathered themselves up and slipped away out of sight amongst the bushes, while the two perchers in silence flew nervously away in another direction.

All this time the victor held his solitary strain at its wildest pitch, but instantly when the others had gone he ceased, and bounded into the air, and away, over the tops of the bushes, and the hitherto unconcerned coquette immediately followed him as if she had always been his devoted wife.

Lovelier blood, or bloodier love, I never witnessed, from which I turned with some reflections which domestic prudence suggests "are better left unsung."

Throughout the breeding season constantly and until the fall migration, occasionally the notes of the Rosebreasted Grosbeak may be heard by the accustomed ear from the edges of the woods or in the cool, shadowy thickets bordering the swamps. More than once during the warm month of July, when quietly picking my way through the dense forests and moist, cool shades, I have been halted by the solitary song of this bird—soft, sweet, distant, pathetic—and at the last moment before resuming my way, discover him not twenty feet away in the very act. He saw me, and seemed to know he charmed me and therefore had a sweet faith that I would not harm him—and I did not.

They do not build their careless and rather slovenly nests until after the 25th of May and often considerably into June. It is composed of considerably different materials in different localities, but is loosely formed of bits of vines, small sticks, roots, straws, leaves, etc., outwardly, and inwardly of finer, though similar materials, more closely and compactly disposed. It is placed in a tree about five feet from the ground. The number of eggs varies from three to five, but will scarcely average four, so far as I have yet observed. They are pale green and speckled with dull reddish-brown.

Although it is said that the male shares the duties of sitting upon the eggs, I have never yet found one so occupied.

These birds devour immense numbers of insects, notwithstanding they are seed eaters. They retire from the State about the middle of September.

Mr. Washburn found them exceedingly common in the Red river valley in the woodlands and at Dead Lake.

SPECIFIC CHARACTERS.

Head and neck all round, and upper parts generally, glossy black; a broad crescent across the upper part of the breast extending narrowly down to the belly, axillaries and under wing coverts, carmine; rest of under parts, rump and upper tail coverts, middle wing coverts, spots on the tertiaries and inner great wing coverts, basal half of primaries and secondaries and large patch on the ends of the inner webs of the outer three tail feathers, pure white.

Length, 8.50; wing, 4.15.

Habitat, eastern United States and southern Canada west to eastern border of Plains.

PASSERINA CYANEA (L.). (598.)**INDIGO BUNTING.**

This beautifully plumaged bird has been observed in nearly every locality I have visited within the State, and is reported from many others as a regular summer resident, breeding in its wonted places. It arrives with great uniformity the first week in May in this latitude, and commences the building of its nest usually in the third week. This is found more commonly in thickets bordering or interspersing woods where briars and brambles are abundant, and is built in the branches or tangle from very near to three or four feet above the ground, completely sheltered by the foliated canopy. It is formed usually of leaves and coarse grasses exteriorly, and a good supply of fine roots and fibrous barks constitute the bulk of it interiorly, finished with some horse hairs. The eggs, five in number are white, and annually two broods are raised. Mr Lewis found its young as early as June 8th, in Pipestone, and Dr. Hvoslef at Lanesboro as late as July 21st.

Its habits are usually more familiar to persons residing in the rural districts than to professional experts whose ambition for extended notes is liable to question whether it does not incline to more extended travel. After all of my own desultory observations through quite a long life, it has been no uncommon experience to have a rural friend give me hints and points on the habits of many species of our birds which subsequent observations, thus directed, have proved of great value. Yet, in common with all conscientious students of bird-life, I have long since learned to accept nothing from such sources until it was verified by personal observation, except I qualify the record. Under such qualifications I will say that one of the most critical observers of the characteristics of birds, who resided for many years in one of the most favored localities, told me that at considerable intervals he had seen instances of the Indigo Bird's mounting, hovering and warbling its humble notes for a few moments in the manner of the Sky-lark. As I never witnessed such a demonstration or met with any record of it elsewhere, I leave it with this bare mention.

SPECIFIC CHARACTERS.

Male, blue, tinged with ultramarine on the head, throat, and middle of breast; elsewhere with verdigris-green. Loes, and

anterior angle of chin, velvet-black. Wing feathers brown, edged externally with dull bluish-brown.

Length, about 5.75; wing, nearly 3 inches.

Habitat, eastern United States to the Missouri.

SPIZA AMERICANA (GMELIN). (604.)

DICKCISSEL.

This bunting, so common in the country where I spent my boyhood, eluded my observations for a good many years until one morning in April a male presumably from a recent battle with a rival, dashed into the fence very near me in a fearfully excited condition in which he failed to recognize my presence, thus giving me a coveted opportunity to see him in all his glory before devoting him as a sacrifice to science. Encouraged by this, I kept a sharp lookout for these birds, and enlisted the attention of several amateur collectors, who soon found they were almost daily to be seen in a single restricted locality. The following year, that spot was under constant scrutiny until assured that not an individual had been seen in its vicinity up to the 1st of June. But several miles from it a number of them had been secured in another similarly situated locality. It was found in both instances in the immediate vicinity of plowed, and cultivated fields, but in dry, rich meadows bearing a dense growth of wild grass, and a few shrubs, or bushes, with an occasional, small-sized tree. A few only were flushed, and only two or three shot, not wishing to drive them from a locality presumably chosen to rear their young in. A few days established the presumption when on the 23d of May their mouths were observed to be occupied with straws. Although repeated efforts were made to find the nests, only one was found by a boy, who believed it was a Bluebird's, and only brought away the eggs, four in number, that were barely addled. A subsequent investigation established its identity, as that of the Black-throat.

The next two years following, I neither saw any of this species, nor gathered any reports of it in the State, when on the third year it reappeared in perhaps a little increased numbers but not in either of its former localities.

In the autumnal migrations Prof. C. L. Herrick reported them "quite abundant" in the vicinity of Minneapolis. Mr. John Roberts and several others mentioned seeing them in the spring.

Dr. Hvoslef found them on "North Prairie, June 19th, 1883 setting on a newly plowed field." The same gentleman met them again on the 11th of May, 1884, at Lanesboro.

This species seems to be more capricious in its choice of localities from year to year, than any other of the fringilline birds.

They arrive in spring about the middle of May, but vary the time somewhat in different years. They are recognized by their song.

Describing the songs of some species so as to convey a very good idea to an attentive, enlisted person is quite possible, if they are bold, and strongly characteristic, but with the Black-throated Sparrow, as with many others equally unpretentious, it is really a very difficult task. However, Dr. Coues has approximated it more nearly than any other in the words: "Look! look! see me here! see!" repeated frequently in a rather weak voice but quite spirited manner. His attitude almost perpendicular, wings and tail deflected, opened bill pointing skyward, he throws his whole soul into an effort worthy of higher results as he reveals his form against the background of sky or cloud from the top of some bush, on the tip of the tallest limb of a small sized tree. He is really a very pretty if not quite beautiful bird.

The nest is variously located on the ground, in a tussock of grass, on a bush, and sometimes in a tree five or six feet from the ground, and consists of coarse grass externally, lined with finer inside, and generally finished with horse-hair. The eggs, four or five in number, like Lark Bunting's, so resemble those of the Bluebirds that I cannot satisfactorily differentiate them.

They begin their southward movement very quietly about the 20th of September, although all are not gone before the second or third week in October. At this time they are much aggregated in number and are found commonly on the high prairies.

I confess my inability to get as much melody out of this species as does the Rev. Mr. Langille, or even as much "*chic-chic-ché-lac*" as does he,—I suspect that either his observations, or his description of the bird in northern Ohio, which he first saw and heard "one evening at sunset," had been preceded by an exceptionally good cup of tea, for I have lent that warbler my best, sharpest and longest ears, with no such return for their use. Indeed, while blessed with a fairly available imagination when listening to melody, I confess that even Dr. Cones' formulation of "Look! look! see me here! see!" is a little straining to it,

but nevertheless it is better than I could do myself, and so I thankfully accept and appreciate it. I will do the former the justice to say, however, that I regard him as entitled to the palm in the description of the songs of many other species.

SPECIFIC CHARACTERS.

Sides of head, sides and back of the neck, ash; crown tinged with yellowish green, and faintly streaked with dusky. A superciliary, and short maxillary line, middle of breast, axillaries, and edge of the wing, yellow. Chin, loreal region, spots on the sides of the throat, belly and under tail coverts, white. A patch on the throat diminishing to the breast, and a spot on the upper part of the belly, black. Wing coverts chestnut; inter-scapular region streaked with black; rest of back immaculate.

Length, 6.70; wing, 3.50.

Habitat, eastern United States to the Rocky Mountains.

CALAMOSPIZA MELANOCORYS STEJNEGER. (605.)

LARK BUNTING.

This quite remarkable species, which in widely different respects seems to resemble so many others, has long been known to frequent portions of the State along the Red river, but has only of late years been often met with in limited numbers in the middle and southern counties. Like the Bobolink changing its striking dress of spring and early summer, when the breeding season is over, for the somber, plain plumage of the female, it may easily escape identification afterwards in its autumnal migrations. A male fell into my hands in May, 1877, taken in the immediate vicinity, since which it has come under my notice frequently in its strongly marked nuptial dress, but from more southern localities generally.

Without positive proof I still believe that it is of much more frequent occurrence in the interior and eastern sections of the State than I am justified in now recording it. I have enough reliable reports from such sections to show that it is not very infrequently seen in those localities during the breeding season, but no nests have yet been obtained. Dr. Hvoslef reports it from Fillmore county as late as the 19th of June; also the 12th of May; and Mr. P. Lewis, in several places between the last named and Redwood, in all of which it is reasonable to suppose it might be breeding, as the times of its observation included the earlier part of July.

I have spent considerable time in its favorite districts, many years ago, since which time I have anticipated its presence, particularly in the southeastern prairies of Minnesota. The nests were comparatively easy to find after the peculiar habit of the male of singing while poised on his wings was carefully noted, for as a general thing this demonstration takes place not very far from over where his listening little wife is attending to family duties. The nests were always found not far away, if detected at all, and generally flush with the ground, but in localities characterized by rank or bushy, sedgy growth, it was sometimes found a little more elevated. It consists of weeds and grasses, rather indifferently constructed, with a sparing supply of the same for the lining, but a little finer. They have from four to five eggs that resemble those of the Bluebird, as has been often observed, to such an extent that they are almost indistinguishable.

The plumage of the male, as described in the Special Characters of the species, is completely changed in the month succeeding the breeding period, after which the hovering demonstrations and song are dispensed with, and from small colonies of a few pairs, in one circumscribed locality, it soon gathers into considerable flocks in those sections where it habitually is most abundant. The song of the male is really much that of the Yellow-breasted Chat, a musician with whose melodies I became exceedingly familiar at Sacramento, California, during a somewhat protracted visit there in the spring of 1869.

SPECIFIC CHARACTERS.

Entirely black; a broad band on the wing with the outer edges of the quills and tail feathers, white. Bill rather large, swollen at the base; commissure much angulated near the base. Legs large and stout; claws strong, compressed, and much curved. Wings long and pointed. Tail a little shorter than the wings and slightly graduated, the feathers rather narrow and obliquely oval-rounded at the end.

Length, 6.50; wing, 3.50; tail, 3.20; tarsus, 1.00; bill, 0.60.

Habitat—from Minnesota, plains of Dakota, west to the Rocky Mountains.

Family TANAGRIDÆ.

PIRANGA ERYTHROMELAS VIEILLOT. (608.)

SCARLET Tanager.

This is truly a wonderful bird. Its striking colors are without a precedent in this latitude, and it is a marked exception to the rule that the higher the colors the lower the measure of the melody of the song, for it sings absolutely beautifully.

I have had the rare pleasure of listening to its strains under circumstances most favorable to avoid accrediting the wrong warbler. I am not a little surprised that so few writers mention any other note but the "chip, chur-r-r-r" originally given by Wilson I think. One or two have discovered a series of modulations resembling the song of the Robin "only softer, and less copious and fluent." I also read of the performance of the Rose-breasted Grosbeak "strongly resembling the finest of the Robin's" but in the memory of the beautiful melodies of the Scarlet Tanager, I have no comparison which would not grossly mislead. The best approximation would be the liquid sweetness and copiousness of the best efforts of the Rose-breasted Grosbeak, with scarcely any inflections or modulations belonging to the same class of song as the Robin's. I never attempted more than a snatch of the closing notes of the exquisite peroration of its melodious undulations, which I can but faintly describe at the best. Closing an effort which had been prolonged about as long as the longest of the Grosbeak's, it seems most nearly to resemble, *to wit-to where-wheedle, wheedle-wee-woo wit.* The first two notes with an upward, but gentle inflection, the next two downward, the next two and two following with a slight roll and the upward and downward marked in "wee-woo" by corresponding inflection and deflection ending with an abrupt upward "wit."

Not an approximation towards an unmelodious note in the whole strain, delivered with deliberation, and a restful completeness of volume. It has an undoubted right in the calendar of the genuine song birds.

It arrives about May 10th usually, although much earlier in extremely premature seasons. I have one good record for April 4th. I mention this because so very exceptional. Rev. Father Gear, who was the earliest army chaplain ever stationed at Ft.

Snelling, (situated at the junction of the Minnesota and Mississippi rivers,) was a very careful observer of the habits of the birds, from whom I received much reliable information of the habits of many of the more common birds in early times, and I availed myself of his notes upon this species particularly. He assured me that the Scarlet Tanager was never seen here until some time after the then territory had been appropriated by the white people. When first seen it was in the tall timber which skirts the Mississippi, about the 15th of May, and back in the "forties." It was not met again for several years, and then more frequently until about 1850 it began to return regularly, and with increasing numbers.

It has greatly increased in the time that I have been a resident, until at the present time it may be said to be abundant for its species. They are to be looked for in brush land in which are also considerable numbers of tall, forest trees, and near water courses. In the absence of the water courses, it will seek the vicinity of lakes or of swamps. The male precedes the female by about ten days, during which time it seems to go outside of its summer range, in a sort of restless waiting, and is then seen often about our shrubbery and ornamental groves.

On the arrival of the mate, the favorite localities are at once selected, and about the first week in June they construct a nest of weeds, strips of bark, twigs, wool, etc., which is lined with fine roots and occasionally bits of tamarack twigs. It is exceedingly loosely built, scarcely having firmness apparently to answer its purpose. They lay three eggs generally, and occasionally four, light green, spotted thickly with reddish-brown. It is placed almost uniformly on a horizontal limb of a sapling, or rather smaller tree, and about eight feet from the ground, with now and then one much higher. I have never known them to bring out more than one brood in a season. They generally begin to move southward early in September, and are usually all gone by the 15th of that month. They are by no means uniformly distributed through the State, but have increased their distribution with increase of population. They will forage sometimes amongst the smaller fruits, and hence are somewhat under the ban of the fruit-growers.

SPECIFIC CHARACTERS.

Bill somewhat straight, subconical, cylindrical, notched at tip, shorter than head; culmen moderately curved, commissure with a median acute lobe; wings elongated, the first four

primaries about equal, second quill longest, first and third a little shorter; tail moderate, slightly forked; general color, bright carmine; wings and tail velvet black, the quills internally edged with white towards the base.

Length, 7.40; wing, 4; tail, 3.

Habitat, eastern United States, west to the Plains.

Family HIRUNDINIDÆ.

PROGNE SUBIS (L.). (611.)

PURPLE MARTIN

When the long winters of Minnesota have gone so that the snows have disappeared from the thickets and corners of the fences, and tiny coleopterous insects begin to appear in the air, even though still chilly, the Purple Martin may appear any forenoon, approaching 12 o'clock. It usually does so in company with greater numbers of the White-bellied Swallows. In 1870 they both came on the 17th of April, and after skirmishing vigorously about for an hour, and finding no food along the river, departed as abruptly as they came. On the 22d they returned in augmented numbers, and went no more away for the season. They soon build their nests in various places, but manifest a strong preference to have them near dwellings. Their readiness to occupy boxes, artificial houses placed on poles, on the eaves of out houses, is a matter of the commonest observation, doubtless for no sentiment toward our species, but because our habits and our habitations attract the larger quantities of insects upon which they feed. Yet, like the Chimney Swallows, they frequent the forests, and employ holes in old dead trees in many places familiar to me. They habitually enter the state at the southern border early in April, as Dr. Hvoslef of Lanesboro has the 3d of that month in his record for several years in succession. He also observed the circumstances of their disappearing again for a few days—once eleven—and then invariably remaining upon their return. The nests consist of fine straw, hay, dried leaves, and feathers which are employed to line it. They lay four pure white eggs, that are almost indistinguishable from those of the White-bellied Swallow. The first brood is brought out by the 10th of June and another one late in July.

As a fighter, the courage of this bird has but one approximation, and that is in the Kingbird. Crows, ravens, hawks and

eagles are instantly put to flight by them, and in the words of Wilson, "So well known is this to the lesser birds, that as soon as they hear the Martin's voice engaged in fight, all is alarm and consternation. To observe with what spirit and audacity this bird dives and sweeps upon, and around the hawk, or the eagle, is astonishing. He also bestows an occasional bastinading on the Kingbird, when he finds him too near his premises, though he will at any time instantly co-operate with him in attacking the common enemy." The value of the Purple Martin to the general, or the special agriculturist is so well understood, and so universally accepted on account of their destruction of noxious insects, that for an exception, no argument is needed with that class of producers to defend it. It is nearly universally distributed over the State. It leaves the whole country almost simultaneously between the 20th and 25th of August, in company with the White-bellied Swallows. Years of record show that they have left the vicinity of Minneapolis on either the 23d or 24th of that month.

NOTE. Mr. Washburn when referring to this species in his notes gathered on his second trip to the Red river valley says:—"This species too, occurs about Mille Lacs, where the farmers provide boxes for them. The great majority of them there, however, nest with the Gulls on an island called Spirit island by the Indians, lying about two miles from the southeastern shore of Lake Mille Lacs. Here large numbers lay their eggs in the sand,—in the crevices and fissures of the rocks, and serve as allies in driving away the ravens and other birds disposed to prey upon the eggs and young of the gulls."

SPECIFIC CHARACTERS.

Bill strong, short, gape very wide, sides gradually compressed, culmen and lateral margins arched to tip, and the latter inflected, nostrils basal, lateral, open, and rounded; tail considerably forked; tarsi shorter than middle toe and claw, and about equal to the toe alone; toes long, strong, lateral ones equal; closed wings rather longer than the deeply forked tail; tarsi and toes naked; color everywhere glossy steel-blue with purple and violet reflections.

Length, 7.30; wing, 5.85; tail, 3.40.

Habitat, temperate North America.

PETROCHELIDON LUNIFRONS (SAY). (612.)

CLIFF SWALLOW.

Nowhere that my personal observation has extended, has this species of sparrow been more abundant from about the first of May to the 20th of August, than in this northern land.

It does not come quite as early, nor remain quite as long as the Black-bellied Swallow, but is far more numerous, and domestic.

Its habits are essentially the same as those of the Barn Swallow in flight as well as in feeding, but it builds a different nest, both as to form and some of its elements. Its construction consists of pellets of mud plastered onto the perpendicular surface of rocks at considerable elevation from the ground, and underneath jutting ledges, or beneath the eaves and cornices of buildings, beginning upon a broad base which is uniformly built out from the building, or cliff, far enough for a comfortable-sized cavity which is closed over except that a neck, curving a little downward, is extended somewhat, through which is formed the entrance.

Into this inclosed cavity are carried a lining of fine grass, and feathers. Five slightly pinkish-white eggs, spotted more or less thickly with fine specks of reddish, brown and purplish, are layed about the 20th of May—perhaps occasionally a little earlier, but quite as likely a little later. Two and three broods are reared in the season.

They are quite uniformly distributed throughout the state in localities favoring them with breeding places. It has been said that they sometimes burrow into banks to nest after the manner of the Bank Swallows—(*Clivicola riparia* (Linn.))—but I do not credit the observation. The rapidity of their flight precludes the urgency of incubation as a reason for their entering the burrows of the other species, so that unless strong proof is adduced I must reject it.

They leave the country about the 20th of August.

SPECIFIC CHARACTERS.

Crown and back steel-blue, the upper part of the latter with concealed pale edges to the feathers; chin, throat, and sides of the head, dark chestnut; breast fuscus; belly white; a steel-blue spot on the throat; rump, light chestnut; forehead brownish-white; a pale nuchal band; tail slightly emarginate.

Length, 5; wing, 4.40; tail, 2.20.

Habitat, North America at large.

CHELIDON ERYTHROGASTER (BODDÆRT.) (613.)

BARN SWALLOW.

This is undoubtedly the most abundant species of the whole family of the swallows throughout the State, arriving in small parties about the 25th of April, and building its nests about

the 15th of May. Its presence is easily noted, as the tail is extremely forked, and it seeks the inside of barns and other out-houses to build its nest on the rafters and beams. Failing to find its favorite place to build, it will accept a place under the eaves like the Cliff Swallow, or not obtaining this, will go to the woods, and there select a hollow stub or tree so widely open that little else but the shell of the dry sappy part remains and will occupy it with ten to twenty or more nests. This outwardly, consists of mud brought in pellets and plastered together with the saliva of the bird, into which is mixed a desirable quantity of fine hay. When it has assumed the right proportions it is lined with fine grass, covered over which are loosely disposed feathers. It lays from four to five white eggs bearing a tint of fleshy roseate color, with fine dottings of two shades of brown, and reddish purple. Three broods are reared in a season oftentimes, but more frequently only two. In the early autumn they gather into flocks of considerable size, though not as large as in some other sections reported, and after staying a few days about the unfrequented streams and large marshes, disappear so suddenly that it is little wonder that our not very remote ancestors were led to believe that they hibernated in the marshes and swamps. In a country consisting of so much treeless territory, it would not be expected to find the Barn Swallow universally distributed, but nowhere has it failed to be found where conditions favoring its incubating habits have existed, or been subsequently developed. On the broad plains of the Red river valley, where barns are still the exceptions, I have found them in great numbers about a single out-house oftentimes.

In common with all of the social swallows, they are everywhere welcomed by the agriculturists, as their feeding habits do not levy upon the productions of man.

SPECIFIC CHARACTERS.

Tail deeply forked; outer feathers several inches longer than the inner; very narrow towards the end, above glossy blue, with concealed white in the middle of the back; throat chestnut; rest of lower part reddish-white, not conspicuously different; a steel blue collar on the upper part of the breast, interrupted in the middle; tail feathers with a white spot near the middle on the inner web.

Length, 6.90; wing, 5; tail, 4.50.

Habitat, North America.

TACHYGINETA BICOLOR (VIEILLOT). (614.)

TREE SWALLOW.

This bird loses no time in making its northern migrations as early as there is to be found an appropriate supply of food. It is looked for with so much interest by the poet as well as the naturalist, that its arrival could not long escape notice. Quite early in April, when the sun has driven away the cheerless clouds enough to let his rays begin to warm the recently frozen earth a little, and clusters of tiny forms of insect life begin to occupy the air, the White-bellied Swallows, often accompanied by the Purple Martins appear suddenly upon the scene, in limited numbers, as aviant couriers of the hosts to come when the question of food supply has been assured. Sometimes, after a few hours spent here, as described in connection with the Purple Martins they leave as suddenly and as completely as they came, and are not seen for five, ten, or even fifteen days, if the season remains exceptionally backward, yet there have been years when all of the conditions referred to being continuously unfavorable, they have come early and remained. The time of average arrival may be set down at about the 12th of April in the southern part of the State, not much time thereafter passing before reaching all parts.

In 1884 they were not in the more southern tier of counties till the 27th of April, while in 1875, according to my notes, they arrived in the latitude of Minneapolis by the 8th, and in 1886 on the 7th.

They build their nests about the 15th of May, in holes in trees, or occasionally in the deserted nests of the Barn Swallows, or in a hole of a log or stump. The materials involved in its structure are usually dried fine grasses and feathers, very loosely disposed in the cavity occupied. They lay five eggs, and bring out two broods of young. The eggs are clear, roseate white.

They retire from the State exceptionally early, not even waiting for the first frost. They are usually gone by the 25th of August. In 1870 Mr. W. L. Tiffany, a very competent observer, reported them clean gone, with the Purple Martins on the 23d of that month.

Their departure on that occasion, was noticed by many observers of the habits of the birds, as there was an unusual demonstration of preparation by both species for many hours before the final movement took place. The variation of the

nesting habits of this beautiful swallow which has been noticed so much of late years, I believe to have been associated with its entire history, and is abundantly verified here.

SPECIFIC CHARACTERS.

Glossy metallic green above; entirely white beneath; nostrils basal, small, oblong, and covered by a membrane; tail emarginate; tarsus naked and shorter than the middle toe, and scutellate.

Length, 6.25; wing, 5; tail, 2.65.

Habitat, North America at large.

CLIVICOLA RIPARIA (L.). (616.)

BANK SWALLOW.

This smallest of the swallows, which avoids all intercourse with man, seeking its breeding places in the neighborhood of streams and lakes, often quite inaccessible, would be a hard species to watch as to the times of their arrival and departure but for the circumstance of their spending their nights in their holes in the banks where they breed. When new holes have to be excavated, it is done very rapidly, so as to provide a place for the first night's lodging. An early visit to the vicinity of the banks will determine their arrival. A single locality may be occupied by only a few birds, but many places within a short distance of each other are occupied by hundreds, if not thousands. The supply of food must in some measure determine that, although the possibilities of their wings may meet most emergencies of that kind.

They reach the greater part of the State by the 5th of May as a general thing, and at once enter upon their nidification. The nest is usually at the end of a hole about half a yard in length, and consists of a cavity of sufficient dimensions to receive an ample quantity of dried grasses, hay, feathers and down of different kinds. Sometimes the nest is much further in the bank.

They deposit four or five pure white eggs, and bring out two broods in due time for the last to be ready for the southern migration by the 25th of August.

Its nidification habits doubtless restrict its numbers in certain districts, but it is an abundant species. I have not failed to find it in every important section seen or heard from.

SPECIFIC CHARACTERS.

Smallest American swallow. Tail slightly emarginate, outer web of first primary soft, without hooks; lower part of tarsus

with a few scattered feathers; above grayish brown, somewhat fuliginous, with a tendency to paler margins to the feathers; beneath pure white, with a band across the breast and sides of the body like the back.

Length, 4.75; wing, 4; tail, 2.

Habitat, Northern Hemisphere.

STELGIDOPTERYX SERRIPENNIS (AUDUBON). (617.)

ROUGH-WINGED SWALLOW.

This swallow arrives about the same time of the arrival of the Bank Swallow, and is no less common in some sections breeding in different localities, but more generally in banks.

I am less familiar with its habits or history than with most of the other species of its family. Dr. Hvoslef reports it "one of our very common swallows" arriving at Lanesboro, April 19, (1884). I have never seen the nest *in situ*, but the eggs are by no means rare amongst our oölogists. They are said to be 4 or 5 in number, and white. They leave the State quite as early as any of the swallows, I think.

SPECIFIC CHARACTERS.

Tail slightly emarginate; first primary with the pennulæ of the outer web much stiffened, with their free extremities recurved into a hook very appreciable to the touch. Above rather light sooty-brown, beneath whitish-gray or light brown-ash, becoming nearly pure white in the middle of the belly, and on the under tail coverts.

Length, 4.50; wing, 4.30; tail, 2.25.

Habitat, United States at large.

Family AMPELIDÆ.

AMPELIS GARRULUS (L.). (618.)

BOHEMIAN WAXWING.

The Bohemian Waxwing is one of our winter visitants, arriving variously from the first of December to the 20th of that month.

The closest observation locally, and a wide correspondence extending over the State has failed to note their presence for several winters in succession occasionally, yet they may be put down as rather an abundant species during a portion of the winter and long into spring. They are in flocks of from 20 to 50 or even more, and are often most numerous in spring when they have entirely escaped observation in the autumn or early winter.

The general texture of the feathers of this species, (and its near relative, the Cedar Bird) so remarkably different from that of nearly all other species, gives it a beautiful, rich, and soft plumage which must be seen to be fully appreciated.

No close observer of the individual characteristics of the birds, ever fails to be peculiarly impressed by it, and so striking is it that nearly everybody wants a specimen for mounting, which has led to the decimation of the species, and would most naturally lead to its extermination, or to driving it to other lines of migration, but for the irregularities of its migrations already alluded to. It has grown shy, but less so than we would naturally expect. While closely resembling the Cedar Bird in its quaker-drab general coloration, and a prominent crest which it elevates at will, it is appreciably larger, a little darker, and has some white on the wings, besides dark-red, or iron-rust under tail coverts which constitute a striking distinction from the white of the other species. The two species some time become mixed together in the same flock in early spring.

Their food consists chiefly of berries and wild grapes in winter, but as the spring awakens the insect world, they become decidedly insectivorous, catching winged forms after the most approved methods of the true fly-catchers.

They remain until the latter part of April in this latitude, and have all left the State for more northern regions by the 1st of May. I know nothing of their breeding habits, but trust they are more songful then, for they have no approach to melody while with us.

SPECIFIC CHARACTERS.

High crested; general color brownish-ash with a faint shade of reddish, especially anteriorly; the forehead, sides of head and under tail coverts brownish-orange; hinder parts purer ash; region about vent white; primaries and tail feathers plumbeous black, especially towards the tips; tail with a terminal band of yellow; a narrow frontal line passing backward, involving the eye, and extending above and behind it; chin and upper part of throat black; tips of the secondary coverts and a spot on the end of the outer webs of all the quills white; those on the inner primaries glossed with yellow; secondaries with red, horny tips, like sealing wax; side of the lower jaw whitish.

Length, 7.40; wing, 4.50; tail, 3.

Habitat, northern parts of Northern Hemisphere.

AMPELIS CEDRORUM (VIEILLOT). (619.)

CEDAR WAXWING.

Without a note of song, uttering only an oft-repeated *twèe*, *twèe*, and with a palate for cherries in particular that reaches into the pocket of the fruit-culturist, this beautiful bird has friends but few. I had long been under the influence of the popular prejudice towards this bird, when one day a country woman brought a young, but nearly full-grown specimen to me, and I bought it. The soft delicate drab mantle and reddish-olive head with its expressive crest were irresistible, and I took it with a mental resolve to give it full liberty when the time came for the autumnal migration. On releasing it in the dining-room it flew to a bracket in the sitting-room directly over a mantel on which a clock stood. From that time that ever remained his perch. His confidence in the entire membership of the family was manifest from the first, and he spent his time in clearing the house of flies and spiders, except what was devoted to bathing and pruning his plumage, or taking a bit of acceptable food off from my own plate, or preferably from my lips while perching upon my left shoulder. A small quantity satisfied him, when he would return to his bracket and dress his bill until the last particle of adhering food was removed, when he would invariably relight on my shoulder, from which he would hop onto the rim of my glass of water, and after taking what he desired, returned to his perch, where he remained quietly until our meal was finished. Afterwards his search for spiders and flies was resumed, in the pursuit for which he availed himself of any open door leading to cellar or garret, or out and under the piazza. All the care required was to lay a piece of paper on the mantel under his perch, and leave some water in a dish to supply him with drink when the family were absent. Several distinguished ornithologists dined with me at different times, and were greatly pleased as well as surprised at his performances. He never showed the slightest desire to migrate in autumn. Unfortunately, one Sabbath the supply of water was forgotten, and a tall pitcher half filled was left standing upon the table, to which doubtless, he resorted, and slipped in without the power to get out, and was there drowned most ingloriously. Notwithstanding his penchant for berries and cherries, he abundantly proved to me that his species is worth more to the pomologist than almost any other in the destruction of worms, larvæ and insects of nearly all kinds.

Mr. F. L. Washburn, whose observations in the Red river valley have been of great value to me, says: "About the middle of August there is present, flying over the sloughs and ponds, (in the region of the Thief river, &c), a small gauze-like, transparent, white fly, a species of coleoptera, of which the Cedar Bird is apparently very fond. For almost half an hour I watched six of these birds, constantly on the wing, hovering over a slough and catching quantities of these insects. They seemed never to grow tired, but flew slowly against the wind, deviating now a little to this side, now to that, until they reached the end of the slough, when back they came to repeat the same manoeuvre and go over the same ground again and again. Occasionally they uttered the characteristic note of the species, but for the most part flew silently. During the time I stood watching them they did not once rest. These birds are also partial to the black currants which are found in the woods at this season."

They arrive in considerable flocks about the 1st of April, some years a month earlier in the lower counties, and not very infrequently two weeks later than the average date first mentioned. Occasions are not wanting where a few individuals have lingered all winter. Soon after the 1st of May the larger flocks are subdivided, until only pairs remain together, and they build their nests on a horizontal limb of different species of trees in the pasture, about the house or in the timber. It consists of stalks of weeds, strips of bark, leaves, grass, fine roots, etc. Deeply hollowed, it is lined with fine grass, roots and horse hairs. They usually lay five light bluish eggs with a shade of purple or brown, and marked somewhat with black spots and obscure spots of brown. They raise two broods.

I have found them in considerable numbers as late as the 16th of December, but they usually leave this latitude by the 1st of November in considerable parties, skirting the timber belts in the direction they take. No bird without a song should be more welcome to the general or special agriculturist than the beautiful Cedar Bird.

SPECIFIC CHARACTERS.

Head crested; general color reddish-olive, passing on the neck, head and breast, into purplish-cinnamon, posteriorly on the upper parts, into ash, and on the lower into yellow; under tail coverts white; chin dark sooty-black, fading insensibly into the ground color on the throat; forehead, loreal region, space below the eye and a line above it, intense black; quills

and tail dark plumbeous, passing behind into dusky; tail tipped with yellow; primaries; except the first, margined with hoary; a short maxillary stripe, a narrow crescent on the infero-posterior quarter of the eye, white; secondaries with horny tips like red sealing wax.

Length, 7.25; wing, 4.05; tail, 2.60.

Habitat, North America generally.

Family LANIIDÆ.

LANIUS BOREALIS VIEILLOT. (621.)

NORTHERN SHRIKE.

This is by no means a very common visitor in migration, reaching Minnesota about the middle of October, and remaining variously in the latitude of Minneapolis from four to six weeks, but not very infrequently far into December. It occasionally remains during the entire winter in the lower or southern tier of counties, as has been reliably reported to me by Dr. Hvoslef. He has sent me the following data of its observation in his locality:—March 26th and December 31st, 1883; December 7th, 1884; January 31st, 1885; February 3d, 1886.

Prof. C. L. Herrick found them "very common at Lake Shatek in October, 1877." December 18th, 1870, and April 5th, 1876, are the two extremes in my own records of 29 years. Mr. Washburn did not see this species in the northern part of the State. At the latest above date of my own observations, I saw one feeding upon a mouse which he fixed in the crotch of a tree upon which he perched.

In hunting for mice it hovers in the same manner as the Sparrow Hawk does, but I have never seen it in the act of impaling its victim on a thorn bush or a sliver projecting from a stub or fence rail, as I have seen the White-Rumped Shrike do many times.

They have all gone further north before the 1st of May, so far as I have been able to learn. They have become less and less observed in the settled sections of the State from year to year of late, as with several other species which were formerly common.

SPECIFIC CHARACTERS.

Above, light bluish-ash, obscurely soiled with reddish-brown; sides of the crown, scapulars, and upper tail coverts, hoary white; beneath white; the breast with traverse lines; wings

and tail black, former with a white patch at base of primaries and tips of small quills, the lateral feathers of which are tipped with white; bill blackish-brown, considerably lighter at the base; black stripe from the bill through and behind the eye, beneath the latter interrupted by a whitish-crescent.

Length, 9.85; wing, 4.50; tail, 4.80; its graduation, 0.90.

Habitat, northern North America.

LANIUS LUDOVICIANUS EXCUBITORIDES (SWAINSON).

(622a.)

WHITE-RUMPED SHRIKE.

The White-Rumped Shrike is a very common summer resident of the State, reaching this latitude about the 1st of April. It is occasionally seen still earlier when the season opens early enough to afford it the proper food. Mr. Washburn found it at Otter Tail lake "common late in October," and said by the people living in the vicinity, to remain all winter. While this may be to an exceptional extent true, for it is certainly so in respect to a number of species, I am confident it cannot be so as a rule with the White-Rumped Shrike. Prof. Herrick found it abundant for its species, as late as October 18th, at Lake Shatek. I am inclined to think that considerable numbers spend the winter in southern Iowa and northern Missouri. Wherever trees have been planted along the highways of the prairies that have formed top enough to conceal the nest, the observer may count safely upon finding it.

In sections where there is timber enough to give this bird its choice, the nest will usually be found in a rather small tree standing a little way into a pasture field, if not in the one that is the sole representative of the field. I have never met either bird or nest in the forest proper. It is constructed of sticks interlaced with shreds of bark, coarse weeds, fibers of wood, roots, grass, strings, wool and a fair supply of feathers. It is a rude, bulky structure, but, well lined with feathers, serves its purpose perfectly in bringing out the early brood, for which five or six eggs are laid about the 25th of April. They are of a dull, white color, spotted with varying shades of brown. Two broods are reared. Their principal food consists of beetles, but includes also various insects, and not infrequently mice and small birds. Not specially attractive in repose, it will instantly arrest the observer's attention when it flies, for then are revealed the remarkable contrasts of its blueish ash, black and white colors, in a manner entirely its

own. Once identified, it is never again forgotten. As has already been intimated, they only leave us in late October and early November, individuals occasionally much later, when the severest frosts are materially delayed. The flight of this bird is quite characteristic. Sitting quietly upon a conspicuous post or stake of a fence, or in the top of a small tree, he drops down to within half a yard of the ground, and with a strong, even flight, follows the fence, where there is one, some little distance, as if destined to light on the grass, when he suddenly rises and perches upon another similar place, where he will remain almost motionless until another impulse sends him back to the first position in which we found him.

The only note I have ever heard him utter was "peemp, peemp," in a rather subdued manner. The food of this species is mostly grasshoppers and beetles, considerable of which is often impaled on thorns, or slivers in the fence. It will often seize mice, if small or quite young, and will take the young or the eggs of other species of birds, if not vigorously defended. They seem to remain in families in their autumnal movements, but return in spring in pairs, so far as I have observed them.

SPECIFIC CHARACTERS.

Above, rather light, pure blueish ash. Forehead, sides of crown, scapulars and upper tail coverts, hoary whitish; beneath, plain whitish; wings and tail black; the former with a white patch at base of primaries and tips of small quills, the latter with the lateral feathers tipped with white, extending broadly at the base. Bill throughout, pitch black; a continuous black stripe from the bill through and behind the eye.

Length, 8.75; wing, 3.95; tail, 4.35.

Habitat, United States, except the South.

Family VIREONIDÆ.

VIREO OLIVACEUS (L.). (624.)

RED-EYED VIREO.

No one interested in bird life, and fond of the quiet groves of lofty forest trees in spring and summer, can fail to appreciate this abundant summer resident of the woods of Minnesota. His song is almost unceasing from the dawn of day until the groves are drowsy with the last gloamings of twilight.

For many years I have had a cottage on the shores of Lake Minnetonka, (now famous as a resort, fourteen miles distant from this city) beautifully enveloped in primeval woods of oak.

ash, maple, ironwood and basswood, where the birds abound as almost nowhere else in the country. During the latter part of May, the Red-Eyed Vireos invariably have vied with the Robins in opening the daily bird-concert from half-past four o'clock, gradually earlier and earlier, until in the latter part of June it was no more than half-past three o'clock when these two songsters poured forth their fullest measures. By eight, in the warmer days, the Robin would have retired from the concert, but with only the briefest intervals, the Vireo would keep up an even, clear, strong and sweetly monotonous song, which seemed a mere incident of his existence, costing the songster little effort, and a delight, though it were everlasting. There is comparatively little variety in the notes, but they are the very expression of cheerfulness and entire satisfaction. They are described best by the words—*vireo-vireo-viriee vir-'a-viree*, uttered energetically, but without any appearance of hurry.

They reach their summer destination about the first of May, some times a little later, and at once enter upon their singing. Concealed by the leaves of the lofty trees, he flits amongst the more elevated branches where the casual observer will scarcely see him, but he will hear him beyond a question. They build their nests from about the 25th of May to the 10th of June. I have frequently found them no more than three feet from the ground, suspended from the horizontal forks of a limb of the size of my finger, and I have still oftener met with it from ten to twenty feet above my head, but never very much more elevated. Always typically pensile, it is outwardly composed of fine strips of inner bark of the slippery elm, and basswood of the previous year, and therefore bleached nearly white, with which are mingled fragments of hornets' or wasps' nests, vegetable down, etc.; and inside with fine thread-like roots and shreds of fine bark. The eggs are a glossy white, slightly speckled on the larger end with dark brown. Occasionally there are a few blotches scattered over the same part, of a brickdust red. They are generally four in number, yet not infrequently there are only three. They are abundant in every wooded section of the State which I have visited, and are frequently found about the elms and other shade trees of the city and farm houses. They mostly leave us in September, although a few individuals remain still later.

Mr. Washburn found it in August, and early in September, in the Red river valley—"the most abundant of its family."

Every correspondent of mine has reported its presence in timbered sections.

SPECIFIC CHARACTERS.

Second and third quills about equal and longest; first a little shorter than fourth, but considerably longer than fifth; back, rump, edges of wing and tail feathers, bright olivaceous green; side of head and neck paler; crown dark ash sharply defined; a well defined whitish line from the bill, over the eye nearly to the occiput; a dark line separating it above, from the ashy crown; a dusky line through the eye; beneath white; under tail coverts pale sulphur-yellow; iris red.

Length, 6.50; wing, 3.50; tail, 2.

Habitat, eastern North America.

VIREO PHILADELPHICUS (CASSIN). (626.)

PHILADELPHIA VIREO.

I had observed the vireos in this section for many years before I had the opportunity to see this one, when on the 18th of May, 1876, Mr. T. S. Roberts obtained one in the immediate vicinity of the city, to which he called my attention. It was an excellent specimen of the male in good plumage. Since then many have been collected not only in this immediate vicinity, but most parts of the State; observed in the season of migration from Fillmore county, where Dr. Hvoslef obtained it, to Clay county, on the Red river, where Mr. Lewis found it common, but obtained no nests. That it breeds throughout the State I have little doubt, especially along the Red river where it has been most commonly met. It retires from the State early in September.

Its general habits are so much like *V. gilvus* that it is next to impossible to distinguish them by their appearance until in the hand, but when their note is heard the identity is no longer doubtful. Its song has been represented to greatly resemble that of *V. olivaceus* and I may have heard it when I attributed it to that bird, but if the latter is singing at the same time, there is no difficulty in distinguishing this one.

SPECIFIC CHARACTERS.

Without any spurious primary; second and third quills longest; fourth a little shorter; first about .20 of an inch shorter than second, and about equal to fifth. Above dark olive-green, slightly inclining to ashy on the crown; beneath pale sulphur-yellow, brightest on the throat and breast. A white line from the bill over the eye, and an obscure white spot below it. A dusky line through and behind the eye from the commissure.

Length, 5 inches; wing, 2.75; tail, 2.10; tarsus, .65.

Habitat, eastern North America to Hudson's Bay; south in winter to Costa Rica.

VIREO GILVUS (VIEILLOT). (627.)**WARBLING VIREO.**

Excepting the Red-eyed, this is the most abundantly represented species of the genus. It arrives about the 10th of May, remaining until late in September, and occasionally October.

Its habits in common with the others of its genus, are such that its presence might escape the attention of the casual observer but for its beautiful warblings which there is no mistaking for any other. It is emphatically *the* domestic representative of the vireos, notably preferring the poplars in which to build its nest, and rear its young. Rather than occupy the other common trees in the vicinity of dwellings, it will go to the small groves and borders of the forest, but is almost never found in the denser timber. It is not a whit behind the Red-eyed Vireo as an insecticide, leaving nothing of the kind living on the trees it specially inhabits and few anywhere very near.

Its song is liquid, fluent, exhilarating, undulating, smooth and melodious as a flute, and remarkably prolonged for a bird of its size and genus. The nearest approximation to any description which I can conceive of is a fairly strong, sweet trill, modulated into symmetrical undulations, with just interruptions enough to keep the vocal cords always up to their best. It sings while skipping from twig to twig amongst the topmost branches of the tree in which its form remains essentially invisible while searching for its special food. The nest is suspended in a very delicate manner from small horizontal twigs where they unite with a larger perpendicular one, around which fibres of bark are wound with much skill to amply secure it. It consists of fine strips of bark and fibres of wood, dried grass, vegetable down, shreds of larval cocoons and fragments of wasp's nests, and is lined with fine bark. It is usually about two inches in depth, but occasionally much more shallow. The characteristics of the vireos are in nothing more marked than in the slim, white eggs sparingly spotted with reddish-black at the larger end. They are generally limited to five in number, and are laid about the first week in June. The nest is placed usually well toward the top of the tree, however tall it may be.

SPECIFIC CHARACTERS.

Third, fourth and fifth quills nearly equal; second and sixth usually about equal, and about .25 of an inch shorter than the third; exposed portion of the spurious quill about one-fourth

that of the third; above greenish-olive, the head and hind neck ashy, the back slightly tinged with the same; lores dusky, a white streak from the base of the upper mandible above, and a little behind the eye; beneath the eye whitish; sides of head pale yellowish-brown; beneath white, tinged with very pale yellow on the breast and sides; no light margins whatever on the outer webs of the wings or the tail; the spurious primary one-fourth the length of the second.

Length, 5.50; wing, 3; tail, 1.80.

Habitat, North America in general.

VIREO FLAVIFRONS (VIEILLOT). (628.)

YELLOW-THROATED VIREO.

Somewhat rare, the Yellow-throated Vireo is still regularly a summer resident, breeding in its characteristic localities in the forests of the middle and southern sections, and without doubt as commonly in the northern. It arrives about May 10th, and builds its nest about the 20th in forks of small branches some distance from the main trunk, and about twenty feet from the ground. This does not differ from that of the Red-eyed Vireo, being perhaps a little more artistic in its external finish, and employing a little more material. Of the general distribution of this species over the State I have been able to learn comparatively little. Dr. Hvoslef has identified him in Fillmore county; once as early as May 10th, and Mr. Lewis, in Hennepin, a little later, and a few have been obtained in the fall migration, early in September.

No writer has ever given the male any flattering credit for his powers of song, indeed rather the opposite, but I must be permitted a different view of his vesper song at least.

It was very near sunset, after a charming day, and I was about to leave the field and return home with my basket well filled with forms embracing several then new to me, when I caught the notes of a new songster, and paused in the growing shadows of the forest long enough to become enchanted by them. Was it the evening song of some familiar species I had failed to hear before, or had I been surprised by the revelations of a new candidate for my vote of admiration? He seemed entirely unconscious of my presence, indeed he was so far above me that I would scarcely expect him to be otherwise, and I therefore had all the opportunity I could desire to assure myself that he was unquestionably the source of the melody so new to me. My field glass enabled me to get an excellent view of him, and after giving him every moment I dared, lest

he might escape me, I asked him in "collector's dialect" to come down, and he responded so quickly that his throat must have been full of notes on his coming.

Any attempt to describe his song by letter, syllables or by words would be idle, but it was a most exquisite, clear, liquid utterance of a rather brief strain, often repeated, the very soul of bird-song. Little pellets of sound transformed into a mystery of song. In every instance in which I have heard it, I have more deeply regretted the impossibility of fixing it in expressible characters. It is eminently a bird of the forest, and so far as I have been able to ascertain, seldom if ever sings except quite early in the morning, or very near sunset at evening.

SPECIFIC CHARACTERS.

No spurious quill; the first and fourth equal. From bill to middle of back, sides of head, neck and fore part of breast olive green; beneath from bill to middle of belly, with a ring around the eye, sulphur yellow, lores dusky; rest of under parts white; of upper ashy blue, tinged with green. Two white bands on the wing; tertiaries edged with white, other quills with greenish; outer tail feathers edged with yellowish white; the outer web of first feather entirely of this color, except near the end.

Length, 6.00; wing, 3.20.

Habitat, eastern United States, south in winter to Costa Rica.

VIREO SOLITARIUS (WILSON). (629.)

BLUE-HEADED VIREO.

Some years the Solitary Vireo is quite common in migration, but there have been others when none were observed after the most careful scrutiny of its favorite migratory haunts.

The first individual that ever fell under my notice was obtained by Mr. George McMullen of Minneapolis, on the 11th of May, 1876. Within five days following I met with many and secured several skins. They remained but a short time when they seemed to move further northward, yet I cannot help thinking a few remained in the forests near by, or did not go much farther northward to breed. I am led to this impression by their conjugal manners while under my observation. They were far from shy or solitary in their habits, indeed were exceptionally tame and unsuspecting. I have found them usually in the tamarack groves near the streams or lakes, and actively engaged in feeding. I know nothing of their

distinctive habits in their summer abiding places. They are said to be exceedingly solitary and retiring, building an elegant, pensile nest hung about seven feet from the ground.

SPECIFIC CHARACTERS.

Spurious primary very small, not one-fourth the second, which is longer than the sixth. Top and sides of the head and upper part of the neck dark bluish ash; rest of upper parts clear olive green. A white ring around the eye, interrupted in the interior canthus by a dusky lore, but the white color extending above this spot to the base of the bill. Under parts white, the sides under the wings greenish yellow. Two bands on the wing coverts, with the edges of the secondaries, greenish white. Outer tail feather with its edge all round, including the whole outer web, whitish.

Length, 5.50; wing, 2.40.

Habitat, eastern United States to the Plains. In winter, south to Mexico and Guatemala.

VIREO NOVEBORACENSIS (GMELIN). (631.)

WHITE-EYED VIREO.

Not an abundant species, arrives about the 25th of April and remains until about the first of October. It is not often seen, and only in low brush, along the borders of swamps, where it builds its nest in June, of much the same material as the other Vireos employ, hung by the edge to the forks of the limb of a bush not far above the ground. The eggs are indistinguishable from those of the Red-eyed Vireo, and are four or five in number. The note has been fairly spelled into "*chip che'weeo, chip, chip, che'weeo*" so far as my own observation has extended, but others have given startling descriptions of its powers of song in other provinces which I have utterly failed to obtain in this. Mr. Burroughs endows him with habits of imitation only second to the Mocking Bird, and a "*rari avis*" indeed on general considerations. It certainly has not been my fortune to witness such exhibitions of his "unique tones." While rejecting the more enthusiastic claims for the melody of its song, Langille is quite as emphatic over the variety and says in his "*Birds in their Haunts*," pp. 254-56: "But in July or August if you are on good terms with the sylvan deities, you may listen to a far more rare and artistic performance. Your first impression will be that that cluster of azaleas, or that clump of swamp huckle-berry, conceals three or four different songsters, each vying with the others to lead the chorus. Such a medley of notes, snatched from half the songsters of the field and forest,

and uttered with the utmost clearness and rapidity, I am sure you cannot hear short of the haunts of the genuine Mocking Bird. If not fully and accurately represented, there are at least suggested the notes of the Robin, Wren, Catbird, High-hole, Goldfinch and Song-sparrow."

SPECIFIC CHARACTERS.

Spurious primary about half the second, which is about equal to the eighth quill. Entire upper parts bright olivaceous-green; space around the eyes and extending to the bill, greenish-yellow, interrupted by a dusky spot from the anterior canthus to the base of the gape; beneath white; sides of breast and body well defined almost gamboge yellow; edges of greater and middle wing coverts (forming two bands) and of inner tertiaries, greenish-yellow-white; iris white.

Length, 5; wing, 2.50.

Habitat, eastern United States, west of the Rocky mountains.

VIREO BELLII (AUDUBON). (633.)

BELL'S VIREO,

I cannot quite understand how a bird which has been fairly common for many years now, could have escaped my collecting basket so effectually for nearly ten years after I became a resident here, yet so it did; but I have in late years found them relatively common during the seasons when the other members of the genus were. They arrive about the 10th of May, and build their nests from the 25th to the 30th of that month in low bushes in the woodlands. The vicinities of our beautiful, sylvan lakes are favorite breeding localities. The nest is much like that of the other vireos, pensile and extremely well built, of strips of bark by which it is secured in the forks of a horizontal limb, and further composed of caterpillars' silk, wasps' nests, spiders' nests, with bits of bark from milkweeds, &c., &c. The structure is basket-form, very firmly woven, embracing in its materials, bits of almost any pliable substances, and is lined with grass, fine strips of grape vine, and bits of leaves. White birch, which abounds about our lakes, is very often prominent. The eggs are pure white, slightly spotted with specks of brownish-black, mostly at the larger end, and four in number. No bird of song is habitually more hidden in its habits of concealment amongst low brush,

The song is not obtrusive like the Red-eyed, but is sweet and very plaintive while far from languid in the earnestness of its delivery. They are not an overly shy bird by any means, for

I have known them to rear their brood within twenty yards of a lake cottage and within a yard of a common pathway. The early frosts hasten them away from our latitudes so unostentatiously, that no one can tell just when they go. Mr. Chas. R. Keyes and H. B. Williams, M. D., of Davenport, Iowa, report this species common in that state. (Annotated Catalogue of the Birds of Iowa, p. 39.)

SPECIFIC CHARACTERS.

Olive-green above, tinged with ashy on the top and sides of the head; a short line from the bill over the eye, and the region around the lower eyelid, white; lores dusky; beneath yellowish-white; sides of the body posteriorly, sulphur-yellow; two faint bars of whitish across the wing coverts; inner tertiaries edged broadly with whitish; third quill longest, the rest successively shorter except the second, which is a little shorter than the seventh; spurious primary about two-fifths the second, and more than one-third of the third.

Length, 4.25; wing, 2.25.

Habitat, middle United States.

Family. MNIOTILTIDÆ.

MNIOTILTA VARIA (L.). (636.)

BLACK AND WHITE WARBLER.

The Black and White Warbler, or Creeper, as it has been so long called, is an abundant species in migration, and is fairly common in nidification in restricted localities. It reaches the extreme southern limits of the State, in the last days of April* and this locality by the 3d to the 5th of May. A large island in the Mississippi, in the centre of our city, has long been a favorite resort of birds in migration, and specially so of this beautiful species, which may be seen at such times as common as Woodpeckers. After ten to twelve days, they move on northward, but not without leaving at least a representation behind, for they have not only been seen occasionally during the summer, but the nest has been found. I have little doubt that it will be found to be fairly common in its favorite haunts during the breeding season when requisite observations have been employed long enough to ascertain with certainty. Its proclivities for the dark forests and shady ravines, and to spend its time principally near the ground, renders its detection somewhat difficult to the hasty investigator, who will scarcely be able to decide just where to look for its nest, as

descriptions vary extremely from on the ground near the root of a decaying tree to a hole in a tree, or a niche in projecting rocks, the drain of a house, and elevated all the way from the first mentioned position, to several feet from the ground. Its composition certainly does not vary so remarkably, for all reports corroborate my own observation that it is formed of coarse fibres of different barks and leaves, with grasses. My specimen embraces little or no grass, but a few bits of thread or strings. The note of this Warbler is very pleasing although humble, and may be described as somewhat resembling the formulation—*pits-ee, pits-ee, pits-ee, pits-ee*, rather monotonously repeated, with brief interruptions while flitting from the trunk or lower limbs of one tree to the roots of another.

They commence to build about the 15th of May, as indicated by the nest obtained on the island alluded to, as observations were maintained from the first, and bring out their brood in 13 days after the female takes finally to her nest. The eggs were four in number, and of a creamy white, speckled irregularly with fine dots of reddish-brown, thickest near the larger end.

They breed extensively in the forests bordering the northern lakes, as Mr. Lewis and others have found. In common with its family, it migrates southward very soon after the earlier frosts. Breeds at Vermilion lake, St. Louis county. (Mr. U. S. Grant's Report.)

SPECIFIC CHARACTERS.

Bill with the upper mandible considerably decurved; the lower one straight, general color of the male black, the feathers broadly edged with white; the head all round black, with a median stripe in the crown and neck above, a superciliary and maxillary stripe of white. Middle of belly, two conspicuous bands on the wings, outer edges of tertials, and inner of all the wing and tail feathers, and a spot on the inner webs of the outer two tail feathers, white. Rump and upper tail coverts black, edged externally with white.

Length, 5; wing, 2.85; tail, 2.25.

Habitat, eastern United States to the Plains,

HELMINTHOPHILA PINUS (L.). (641.)

BLUE-WINGED WARBLER.

What this little warbler has denied it in the force, and melody of its song, is made up to it in the beauty of its colors. It is a thing of beauty and therefore "a joy forever." The eye that having seen it in its freshness of vernal plumage, does not feel a thrill of joy at its return after the long months

of a northern winter have passed away, and permitted the great bird-wave to roll over the resurrected land once more, has no right to see, nor the soul to feel the joy of a thing of beauty.

Notwithstanding this bird has been considered too southern for the latitude, it is annually a Minnesota visitor, coming in sufficient numbers to assure us that it has by no means reached the most northern limits of its migration. About the 10th or 12th of May, it comes with the great bird-throng of the spring, and remains in sufficient numbers for about ten days to make the collection of several for the cabinet in the course of half a day's hunt, a pretty sure thing to the experienced collector.

Although no nests have come under my own eye, nor have any been reported to me as yet, I confidently believe it breeds throughout the State as well as in the British possessions. One individual was obtained about the 3d of September, in its southern migration, and in mature plumage. Since writing the above Mr. Treganowan writes: "I have the nest and eggs of the Blue-winged Warbler, obtained May 22nd, (1877) in Big Stone. It was on the ground in a cluster of hazel brush, in the borders of a grove of forest trees. The locality was near a dwelling, and the nest consisted of strips of bark from dead poplars, and was lined with fine grasses quite artistically adjusted and interwoven. There were five white eggs spattered with dirty brown, darker colored and more numerous at the larger end."

SPECIFIC CHARACTERS.

Upper parts and cheeks olive-green, brightest on the rump; wings, tail and upper coverts in part, bluish-gray; an intensely black patch from the blue-black bill to the eye, continued a short distance behind it; crown, except behind, and the under parts generally rich orange-yellow. Wing with two white bands; two outer tail feathers, with most of the inner web, and third one with a spot at the end, white.

Length, 4.50; wing, 2.40; tail, 2.10.

Habitate, eastern United States.

HELMINTHOPHILA CHRYSOPTERA (L.). (642.)

GOLDEN-WINGED WARBLER.

So far as I have been able to ascertain, this Warbler is not by any means common. Indeed I had lived here seventeen years before I saw one, and that was collected by Mr. T. S. Roberts of this city. Since then few springs have come and gone

without my meeting a few. If any breed here, I have failed to learn the fact. Rumor amongst amateur ornithologists claims that it has been seen in its autumnal migrations; but with warblers on the wing in fall plumage, seeing is not always sufficient reason for believing. This very pretty species, is seen associated with other warblers about the 10th of May. It has been obtained late in August on its southern migration.

SPECIFIC CHARACTERS.

Upper parts uniform bluish-gray; head above and a large patch on the wings, yellow; a broad streak from the bill through and behind the eye, with the chin, throat, and fore part of breast, black; the external edge of the yellow crown continuous with a broad patch on the side of the occiput above the auriculars, a broad maxillary stripe widening on the side of the neck, the under parts generally, with most of the inner webs of the outer three tail feathers, white; sides of body pale ash color.

Length, 5; wing, 2.65; tail, 2.25.

Habitat, eastern United States.

HELMINTHOPHILA RUFICAPILLA (WILSON). (645.)

NASHVILLE WARBLER.

The Nashville Warbler is abundant in the spring migrations from about the 8th to the 15th of May, after which very few are seen until perhaps the 10th to the 15th of September, when although less numerous, they may be said to be fairly common for the season. A remarkable fact concerning this species, which is also true of several others of its family, is that their numbers have steadily increased from year to year for at least two decades. In the case of those birds whose habits associate them with agriculture, a reason for their increase is at once suggested in the development of the country, but that would scarcely be applicable for the wood-warblers. This species undoubtedly breeds here, as it is known to do so in the immediate vicinity south of us, and in the section of the Kandiyohi lakes, it is met with so frequently during the summer as to leave no question of its breeding there at least. A single nest containing four white eggs was found by a little boy on the ground, constructed mostly of dried grass, fine roots, and lined with the finest bits of the same, to which were added a few pine needles and a few horse hairs. The outside was overlaid with green moss, and the whole well concealed in a bunch of brush. The eggs were spattered over with reddish-brown, which formed a sort of ring around the larger end by their multiplication there.

I have never heard its notes under circumstances possible to approximate it in a formula of syllables, but a gentleman perfectly competent to do so informs me that he cannot distinguish the opening notes from these of a Black and White Warbler, but it soon changes into one that suggests the syllables *chip-ee*, *ehip-ee*, *chip-ee*, and *kit-see*, *kit-see*, *kit-see*, with the accent on the last syllable, which is somewhat prolonged. I trust we shall know more of the local history of this bird in the near future, as the number of observers are increasing very rapidly.

Dr. Hvoslef met with them as early as April 29th in 1881, and May 2d 1884. Mr. Washburn reports them common in the Red river valley, in August 1885.

SPECIFIC CHARACTERS.

Head and neck above, and on the sides, ashy-gray; the crown with a patch of concealed dark brownish-orange, hidden by ashy tips to the feathers; upper parts olive-green, brightest on the rump; under parts generally, and the edges of the wing, deep yellow; the anal region paler; sides tinged with olive; a broad yellowish-white ring round the eye; lores yellowish; no superciliary stripe; inner edges of the tail feathers margined with dull white.

Length, 4.65; wing, 2.40; tail, 2.05.

Habitat, eastern North America to the Plains.

HELMINTHOPHILA CELATA (SAY). (646.)

ORANGE-CROWNED WARBLER.

This beautiful member of the Warbler family, arrives in the regions where it comes under my personal observation annually about the 5th of May. Its song is exceedingly delightful, being for its race copious, varied, *piano forte*, and considerably prolonged. I can never forget the first time I heard it sing from the topmost branch of one of the loftiest elms of the dense, dark, deciduous forest on the quiet banks of Lake Harriet, now included within the ambitious limits of the corporation of Minneapolis. The sun of a cloudless day in early May was within an hour of its setting, when the song suddenly burst forth in a strain of melody that floated down through the leafy canopy upon the ear, like distillations of fragrance upon the sense of smell. *Intoxication* only expresses the effect upon the ear, "till pleasure, turning to pain" under the overwhelming conviction that terrible as the sacrifice to sentiment and song must inevitably be, the author of such celestial melody must die in the interests of science. And in a great

deal less time than it takes to write one of these lines, the beautiful, delightful warble lay at my feet. I hear that it has been seen late in August by those who sought to know the bird thoroughly. Mr. Grant did not meet with it at Vermilion lake, but Mr. Lewis did, under circumstances which justify the presumption that it breeds there in company with so many of the warblers.

SPECIFIC CHARACTERS.

Above olive green, rather brighter on the rump; beneath entirely greenish yellow, except a little whitish about the vent; the sides tinged with olivaceous; a concealed patch of brownish-orange on the crown, hidden by the olivaceous tips to the feathers; eyelids and an obscure superciliary line, yellowish, and a dusky, obscure streak, through the eye.

Length, 4.70; wing, 2.25; tail, 2.

Habitat, eastern North America.

HELMINTHOPHILA PEREGRINA (WILSON). (647.)

TENNESSEE WARBLER.

Abundant in the season of its migration, the Tennessee Warbler is a fairly represented summer resident, arriving from the 5th to the 10th of May, and remaining until about the second week in September. They build their nests in, or in the vicinity of forests, on the ground, well concealed by brush and dead leaves. It is composed entirely of fibrous strips of bark outwardly, and of fine grasses interiorly. Five eggs, more or less speckled with brown, especially about the larger end, were found in a nest at Lake Minnetonka, June 5th, 1881. They are a very nervous, active and energetic species, exceedingly difficult to follow with the best eyes or a field-glass, flitting constantly to and fro through the boughs in searching for their food, keeping up a short chirp.

This has been accounted a somewhat northerly species, and not without reason on account of the disproportionate number seen during their migration, but I am satisfied it should not be specialized as such. In the fall, and after the earlier frosts, it is not a very uncommon thing to meet scattering parties of them mingled with other species, making their way towards the south. It is not abundant for its species, except during migration when few other of the warblers are more so. At St. Vincent, Mr. Washburn recorded it in the latter part of July, 1885, as very frequently seen "in scrub willows and trees bordering the Red river." I get similar records from different

representative sections of the province of my survey. I have personally met the bird but once during the summer months, but that they breed within our borders extensively there can be no doubt.

SPECIFIC CHARACTERS.

Top and sides of head and neck ash gray; rest of upper parts olive green, brightest on the rump; beneath dull white, faintly tinged in places, especially on the sides with yellowish olive; eyelids and a stripe over the eye, whitish; a dusky line from the eye to the bill; outer tail feathers with a white spot along the inner edge near the tip.

Length, 4.50; wing, 2.75; tail, 1.85.

Habitat, eastern North America.

COMPSOTHTYPIS AMERICANA (L.). (648.)

PARULA WARBLER.

This is a somewhat common summer resident, but so small and unobtrusive that it eluded my notice for many years after I became a resident of the state except in the season of migration, when a victim found its way into my collecting basket very frequently. It arrives about the 10th of May in this latitude, and builds its nest in the last days of that month. This consists of a common form of lichen ingeniously woven into a sort of ball, with the entrance generally on one side, but sometimes in the top. It is usually on the limbs of maples or ironwoods about twenty to thirty feet from the ground, and contains four white eggs, speckled with reddish-brown, especially around the larger end. Notably this bird mostly avoids damp, dark, swampy localities, and is found on high, dry, and even hilly places in the forest. The song is humble, but finds a most welcome place in the choriistry of the woodlands. In the heat of the day, at a time when a majority of the songsters have ceased to sing, this humblest and smallest of all, begins with its low, feeble note, which resembles, *cheweech, cheweech, cheweech, cheweech*, repeating it several times with increasing force and volume till it suddenly ceases, to be repeated presently again in the same manner. As above suggested, the breeding habits of this bird are easily overlooked, and, as a consequence, few of those who have been collecting observations which are of value to the survey, have been able to give any valuable additions to my knowledge of the local habits of this warbler. By the 10th, and often the 5th, of September they have turned their beautiful little blue and yellow backs upon our latitudes for the sunnier South.

I am credibly informed that the bird has been found nesting in St. Louis county, a statement I am ready to believe from my own knowledge of the habits of the species.

SPECIFIC CHARACTERS.

Above blue, the middle of the back with a patch of yellowish green; beneath yellow anteriorly, white behind; a reddish brown tinge across the breast; lores and space around the eye dusky; a small white spot on either eyelid; sides of head and neck like the crown; two conspicuous white bands on the wings; outer two tail feathers with a conspicuous spot of white.

Length, 4.75; wing, 2.35; tail, 1.90.

Habitat, eastern United States, west to the Plains.

DENDROICA TIGRINA (GMELIN). (650.)

CAPE MAY WARBLER.

This is another species of warbler that is occasionally seen in its autumnal migration, and is quite common for a short time, beginning about the 10th of May and sometimes nearly a week earlier. With so many observations of its migrating habits in this longitude, it is a matter of regret that my notes include no discoveries of its nest up to the present time.

It was somewhat singular that it should have escaped my notice so long as it did, and subsequently have been met with so many times, but such has been the case with many other species. It was first obtained in this locality—Minneapolis—on the 15th of May, 1875, by T. S. Roberts, and in the following year, May 11th, by several collectors. Correspondents from widely severed portions of the State have reported the Cape May Warbler in spring migrations. I have never obtained the nest, but have found this warbler considerably further south than Minneapolis during the month of June, and it has been reported nearly as late in the spring at Lanesboro, thus rendering it assured that they breed with us, notwithstanding the fact that no nests have been discovered.

SPECIFIC CHARACTERS.

Bill very acute, conical and decidedly curved; bill and feet black, upper part of head dull black, some of the feathers faintly margined with light yellowish brown; collar scarcely meeting behind; rump and under parts generally rich yellow; throat, fore part of breast and sides streaked with black; abdomen and lower tail coverts pale yellow, brighter about the vent; ear coverts light reddish chestnut; back part of a yellow line from nostrils over the eye, of this same color; chin and throat also tinged with it; a black line from commissure through

the eye and running into the chestnut of the ear coverts; back, shoulder, edges of the wing and tail yellowish olive, the former spotted with dusky; one row of small coverts and outer bases of the secondary coverts form a large patch of white tinged with pale yellow; tertials rather broadly edged with brownish white; quills and tail dark brown, the three outer feathers of the latter largely marked with white on the inner web; edge of the outer web of the outer feathers white, more perceptible towards the base.

Length, 5.25; wing, 2.85; tail, 2.15.

Habitat, eastern North America, north to Hudson Bay, west to the Plains.

DENDROICA ÆSTIVA (GMELIN). (652.)

YELLOW WARBLER.

Not for its beautiful colors, for they are certainly unostentatious; not for its melodies, for they are not conspicuous in the grand choristry of bird song; nor for its rariety, for its numbers exceed any other species of the warblers, but after the combination of all expressible reasons comes the inexpressible one of its remarkable, inseparable association with the return of full grown, voluptuous spring and summer embraced in one living, throbbing resurrection. Until the unsympathetic, desouled systematologists robbed it of its rightful heritage, it bore the appropriate and expressive name *Summer Warbler*. With this name were inseparably associated the fragrance of flowers, the earlier butterflies, the new born verdure of forest and field, "the smiles and frowns of April showers," with all their golden memories of childhood, youth, and riper, rounder years. *Yellow Warbler?* How little it means. Where is the ring of spring in it? It has nothing sweet nor green in all of its ripened October sought significance.

Late in April this warbler comes amongst us as unheralded as the gentle shower that patters on the roof at daybreak. By the 12th to the 15th of May, they construct one of the most artistic, and substantial nests known as belonging to the warblers. It is either placed in the forks of a bush, or so as to embrace several small branches, about four or five feet above the ground, and consists of bark from weeds, strips of the liber of grapevines, with which the woods abound, into which are ingeniously woven various materials, the special character of which is determined by the immediate surroundings of the locality, embracing bits of wool, down from dead wood and weedstalks, dry grass, and the long hairs from horses and cat-

tle from the pastures. The walls are exceedingly thick, being bound firmly together with fine roots, dry grass, into which are woven the catkins of different willow kinds of timber, and is delicately lined with down of various kinds of vegetation. The location may be in the garden, field, swamp, lawn, forest, or orchard.

The eggs are greenish white, heavily spotted with brown and lilac that occasionally spreads into splotches. The young are often out of the nest by the twenty-fifth of June. I have not yet decided that they do not rear the second brood occasionally. They are common victims of the Cowbird's audacious occupation of their nests with its own larger eggs, over which the Yellow Warbler will sometimes build another, and second story nest.

The distribution of this species in the State, is almost universal, except on the marshes and open prairies. Mr. Grant does not list them for the three counties in which his observations were made, but directly west of them in Cass, Becker and Clay counties they are registered as common. A few only remain later than early September, but isolated instances have occurred when they have lingered into October.

SPECIFIC CHARACTERS.

Bill, lead color; head, all around and under parts generally, bright yellow; rest of upper parts yellow olivaceous, brightest on the rump; back, with obsolete streaks of dusky reddish brown; fore breast and sides of body streaked with brownish red; tail feathers bright yellow; outer webs and tips, with the whole upper surfaces of the innermost one, brown; extreme outer edges of wing and tail feathers olivaceous like the back; the middle and greater coverts and tertials, edged with yellow, forming two bands on the wings.

Length, 5.25; wing, 2.65; tail, 2.25.

Habitat, North America at large.

DENDROICA CERULESCENS (GMELIN.) (654.)

BLACK-THROATED BLUE WARBLER.

On the 10th, 11th, or 12th of May, there comes a sort of Wood-warbler wave, like an unseen tide setting in from the sun, and not the invisible moon. It seems as if every branch of lofty tree or brush, or shrub, was tremulous with flittings of song-bird life half suppressed, half revealed, moving leisurely toward the waiting northland. One catches a glimpse of some ravishing form of varied colors to be instantly changed for an-

other, till the individual is lost in the maze of ceaseless change. He must clothe his heart in armor of remorseless steel, and listening to no siren song of sentiment, see only forms, and hear only the rapidly repeated roar of his own artillery until his receptacle is filled with bloody sacrifices to the altar of science, or the golden opportunities are gone for a whole year at least. Amid the trophies of his unwelcome victories, that embrace seven-tenths of all the warblers, appears the beautiful form and colors of the Black-throated Blue Warbler. If in his zeal he has ceased his warfare for a moment's rest, while in the field, he may have heard some preoccupied insect rubbing his chitinous wings against his harder legs in insect melody, without suspecting the author was a warbler of such proportions, yet it was this same, and no other. Although but few have been seen after the month of May has passed, enough have been brought to basket to make it presumably certain that the Black-throated Blue Warbler breeds in Minnesota, notwithstanding no nests have been secured. Its habits lead it to the uplands of the forests, where it may be seen energetically flitting from the very tip of one lofty tree to that of another close at hand, occasionally dashing out after an insect on the wing, after the manner of the fly-catchers, or descending quietly to the lower portions of the trunk, industriously scanning every crack and crevice in the bark in search of larvæ and wingless forms. Careful observations along the borders of forests in early September will usually be rewarded by the sight of this beautiful bird, in somewhat more sombre plumage. It is on its way to the land where the frosts do not deprive it of its indispensable supplies of insect food during our prolonged and rigorous winter. Mr. Lewis found it fairly common at the Vermilion lakes in June, but discovered no nests, as his stay afforded little opportunity to search for them. From several descriptions of the nests and eggs as found in other localities, it seems that for the most part the location chosen is quite variable, some being "on the horizontal branch of a fir tree, seven or eight feet from the ground," and others "about five inches." Eggs four, white and spotted with brown.

SPECIFIC CHARACTERS.

Above uniform continuous grayish-blue, including the outer edges of the quill and tail feathers; a narrow frontal line, entire sides of head and neck, chin and throat, lustrous black, which color extends in a broad lateral stripe to the tail; rest of under parts including the axillary region white; wings and

tail black above, the former with a conspicuous white patch formed by the bases of all the primaries except the first; inner webs of the secondaries and tertials with similar patches towards the base, and along the inner margin; all the tail feathers except the innermost, with a white patch on the inner web near the end

Length, 5.50; wing, 2.60; tail, 2.25.

Habitat, eastern North America to the Plains.

DENDROICA CORONATA (L.). (655.)

MYRTLE WARBLER.

During their migrations, either in spring or autumn, this is by far the most numerous species of its family, arriving in the southern sections of the State as early as the 5th of April, and reaching Minneapolis and vicinity by the 15th. At first seen often only in comparatively small parties, they soon increase until they seem to be in loose hordes, in search of insects of all kinds found on the trees, or in the air, for no genuine fly-catcher can exceed them in taking insects on the wing.

Their movements are more dignified than those of the other warblers, exhibiting little of the nervous manners characteristic of the family, while tireless in their industry. They pass us entirely by the middle of May, breeding still further to the north.

Mr. Washburn found the young birds at Thief river, one of the tributaries of Red Lake river in Polk county, in August, and Mr. Lewis reports the young common in Itasca and St. Louis counties earlier in the season, from which there can be no further doubt of its local nidification. The autumnal migration has fairly begun from the 15th to the 20th of September, but it is not terminated until the first of November. Their lines of movement, both before and after their breeding, are somewhat restricted, and follow the course of the larger streams and lakes bordered with timber. In the springs of my earliest residence here, I was somewhat of a duck hunter, and visited the principal localities in the vicinity of my residence very frequently, where such game abounded. I think I met with the present species several years the very day they first came, and one of these was on the 31st of March, and another the 2d day of April. On these occasions I was very much interested to observe their feeding. They were not at all shy, but would prosecute their explorations of every limb, branch, twig, and dead leaf of the very tree under and behind which I

was watching the movements of the ducks, thus affording me the amplest opportunities for seeing them, some of them coming within a yard of me at such times. Some of these flocks would amount to more than two hundred, and the least one I ever undertook to estimate, was somewhat more than twenty. The quantities of minute insects and larvæ destroyed by this species alone, must be something simply marvelous. Any winged forms at this early season could scarcely escape them, for while not so nervously active as some of the later warblers, they were unerring in their fly-catcher-like seizure of them in the air. Their movements whether climbing about for larvæ and insects, or flitting out after a winged form, are easy, graceful, and always restful to witness, which is more than can be said of most other warblers and fly-catchers.

NOTE. Since the most of the foregoing was written I have found some nests of the Myrtle Warblers in the northern and northwestern sections of the State, and more of the young, in early August, leaving the question of their breeding within the limits of the area of my inquiries at rest in my own mind. The nest is in a small tree or large bush, about six or seven feet from the ground, and the structure consists of fine roots, grasses, stalks of weeds, and the fibrous bark of different kinds of woods and coarse weeds, and is lined very neatly with fine roots, hair and feathers. It is not quite as bulky as the nests of some other warblers, but is very firm and well built. The eggs are four in number, ashy white, dotted all over with two shades of brown, darkest about the larger end. I cannot think they bring out a second brood. The young of this species were found by Mr. Washburn at the Thief river in August.

SPECIFIC CHARACTERS.

Above, blueish ash, streaked with black; under parts white; forepart of breast and sides black, the feathers mostly edged with white; crown, rump and sides of breast yellow; cheeks and lores black; eyelids and a superciliary stripe, two bands on the wing, and spots on the outer three tail feathers, white.

Length, 5.65; wing, 3; tail, 2.50.

Habitat, eastern North America.

DENDROICA MACULOSA (GMELIN). (657.)

MAGNOLIA WARBLER.

It has always been difficult to explain the circumstance of my obtaining this species in 1869, on the 27th day of April, the habit of the species being almost unexceptionally rather on the other extreme of arrivals. It varies also extremely in the numerical character of its migrations, some years being very

common, while in others it is very rare. I have no positive assurance that it breeds within the State, yet from what I know of the history of this bird, I cannot divest myself of the expectation that before very long we shall find the nests. It is occasionally seen in the last days of August or the first days of September, associated with other species, apparently on its way southward, from which I conclude the breeding localities are not for removed. It has long been observed that the notes of this species very strongly resemble those of the Chestnut-sided Warbler (*D. pensylvanica* (Linn.)) and my own observation accords with it, for I am not entirely sure that I have ever been able to quite distinguish them, if I have really heard those of this finely plumaged species. While with us for about ten days (arriving commonly about the 10th or 12th of May) they are not very difficult to distinguish by their plumage, and have received attention from many observers. Their habits of feeding are very much like those of creepers following the trunks and lower branches of large trees to their extremities in search of insects and larvæ. They invariably visit Nicollet island, in the center of Minneapolis, in their migrations, and as they are not at all timid, I have had repeated opportunities to observe them there for many years at such times. Remarkably gentle, and quietly pre-occupied, they take little notice of the presence of "interviewers," or the impertinence of the police of science or sentiment. Their busy satisfied manners, and soft utterances of their *e-e-a-e-e-a*, as they trace their sinuous way up the trunk and out along the sturdy limb, impress themselves indelibly upon the memory of anyone interested in the life-history of birds. Their nest and eggs have been best described by the great field ornithologist, Mr. C. J. Maynard, as follows: "It was placed on the forked branch of a low spruce, about three feet from the ground on a rising piece of land leading from a wood path. The nest, which contained four eggs, was constructed of dry grass, spruce twigs, roots, etc., and was lined with fine black roots, the whole being a coarse structure for so dainty looking a warbler. The eggs were more spherical than any other warbler's I have ever seen. The ground color is a cream white, blotched sparingly over with large spots of lilac and umber."

NOTE. In one spring I recall the pleasure I had in frequent interviews enjoyed with Mrs. Sara A. Hubbard of Chicago, who was visiting her brother, Col. David Blakely, then editor

and proprietor of The Minneapolis Tribune, and residing on the Island, so that her opportunities were supreme for the observation of many species of the warblers at the full tide of their emigration, not a possible moment of which was neglected. This one in particular she watched for hours at a time, glass in hand, sitting in the shade of the magnificent maples, elms, and lofty oaks abounding there, and capturing alike every note and gesture for her record, which she kindly made as my own in our almost daily interviews about the teeming birds. Her ear for the characteristic notes of species, could never be excelled, and her powers of reproducing them by imitation were not a whit behind the other. I had long practiced writing them upon the musical staff, that I might to a small extent at least, recall them after the singer had gone, but when I listened to her, and realized my own deficiencies, I abandoned all such attempts at once. Since those days she has earned fame as a teacher of ornithology, having before been known in its literature as a writer on The Hummingbirds of the Americas. Why are there so few ladies of such culture interested in the systematic study of this fascinating science.

SPECIFIC CHARACTERS.

Bill dark bluish black, rather lighter beneath; tail dusky, top of head light grayish-blue; front, lore, cheek, and a stripe under the eye, black, running into a large triangular patch on the back, between the wings, which is also black; eyelids and a stripe from the eye along the head, white; upper tail coverts black, some of the feather's tipped with grayish; abdomen and lower tail coverts, white; rump and under parts, except as described, yellow; lower throat, breast, and sides streaked with black, the streaks closer on the lower throat and fore-breast; lesser wing coverts and edges of the wing and tail, bluish-gray, the former spotted with black; quills and tail almost black, the latter with a square patch of white on the inner of all the bands across the wings, (sometimes coalesced into one) formed by the small coverts and secondaries; part of the edge of the inner webs of the quills white; feathers margining the black patch on the back behind, and on the sides tinged with greenish; second and third quill longest, first shorter than fourth; tail rounded, emarginate.

Length, 5; wing, 2.50; tail, 2.25.

Habitat, eastern North America to the base of the Rocky mountains.

DENDROICA CERULEA (WILSON). (658.)

CERULEAN WARBLER.

On the 19th of May, 1869, I obtained this warbler amongst several others, since which time few seasons of their vernal migration have passed without seeing them in rather limited numbers. They come with the warbler wave from the 10th to

the 12th of May, and remain, or rather the species remains represented, some twelve to fifteen days. In some respects it is the counterpart of the last species described, one of which is manifest in its habit of feeding almost exclusively in the tops of the trees. I might enumerate others, but Langille has described them so well that a quotation from his "Birds in their Haunts," pages 25 and 26, serves me quite as well. He says:—"I have had every opportunity of observing its habits; and, as no writer has given it a full record, I bear it a special accountability. It is a bird of the woods, everywhere associated with the beautiful, tall forests of the northern counties of western New York, sometimes found in the open woods of pasture lands and quite partial to hardwood trees. In its flittering motion in search of insect prey, and in the jerking curves of its more prolonged flight, as also in structure, it is a genuine wood warbler, and keeps for the most part to what Thoreau calls 'the upper story' of its sylvan domain. Its song, which is frequent and can be heard some distance, may be imitated by the syllables *rheet, rheet, rheet, rheet, ridi, idi-e-e-e-ee*, beginning with several soft, warbling notes and ending in a rather prolonged but quite musical squeak. The latter and more rapid part of the strain, which is given in the upward slide, approaches an insect quality of tone, which is more or less common to all blue warblers. This song is so common here as to be a universal characteristic of our tall forests. The bird is shy when startled from its nest, and has the sharp, chirping alarm note of the family. The nest is saddled on a horizontal limb of considerable size, some distance from the tree, and some forty or fifty feet from the ground. Small and very neatly and compactly built, somewhat after the style of the redstart, it consists outwardly of fine, dried grasses, bits of wasps' nest, gray lichen, and more especially of old and weathered wood fibers, making it look quite gray and waspy.

"The lining is of fine, dried grasses, or of fine shreds of the wild grapevine, thus giving the inside a rich brown appearance in contrast with the gray exterior. The eggs, four or five, some .60 by .47, are grayish or greenish-white, pretty well spotted or specked, or even blotched, especially about the large end, with brown and deep lilac. They do not possess that delicate appearance common to the eggs of most of the warblers."

SPECIFIC CHARACTERS.

Above bright blue, darkest on the crown, tinged with ashy on the rump; middle of back, scapulars, upper tail coverts and sides of the crown streaked with black; beneath white, a collar across the breast and streaks on the sides, dusky-blue; lores and a line through and behind the eye, (where it is bordered above by whitish) dusky-blue; paler on the cheeks; two white bands on the wings; all the tail feathers except the innermost, with a white patch on the inner web near the end.

Length, 4.25; wing, 2.65; tail, 1.90.

Habitat, eastern United States and southern Canada west to the Plains.

DENDROICA PENNSYLVANICA (L.). (659.)**CHESTNUT-SIDED WARBLER.**

In writing of the warblers there is a great deal of monotony of description, as there are so many species whose habits closely resemble each other, and in none more than the Chestnut-sided, in its time of migration, notes, and even its nesting, but to the loving, attentive student of the birds each species comes to have a decided individuality, as dear to sentiment as valuable to science.

With all that is common to the family this bird is *sui generis* "itself" and no other. The very type of sprightliness, joy and contentment, it floats along on the great bird-billow which reaches Minnesota in the second week of May, to be recognized instantly upon its arrival. Its favorite localities are thickets bordering rather scattering large trees, and not very far above the ground, where about the 25th of May it builds a nest consisting of strips of bark and rather fine grasses, which are woven into compact form with much architectural instinct, and overlaid externally with a sort of stucco with caterpillars' nest-silk and cobwebs, which give the structure considerable firmness. Deeply hollowed it is lined with fine strips of bark and horsehairs, and receives usually four creamy-white eggs, with confluent spots of brown about the larger end. But a single brood has been observed in a season. It is very generally distributed over the State in localities favorable to its distinctive habits, and abundantly represented. I do not notice any special increase in their numbers after 30 years.

Prof. C. L. Herrick, formerly much devoted to the local history of the birds in different parts of the State, found it common in the summer wherever he was. Kennicott found it at the Lake of the Woods, May 31st, and there can be no question of

its breeding quite far to the north of the national line. Associated in families of two generations it is met with frequently in early autumn, but not often later than the 1st of October, indeed that is exceptionally late for them.

Mr. Grant, who accompanied Professor Winchell to Vermilion lake in St. Louis county, on his Geological Survey of that region in 1887, found this species breeding there, apparently fairly represented. Nearly all of my correspondents report it as common in their localities.

SPECIFIC CHARACTERS.

Upper parts streaked with black and pale bluish gray, which becomes nearly white on fore part of back; middle of back glossed with greenish-yellow; crown continuous yellow, bordered by a frontal and superciliary band, and behind by a square spot of white. Loral region black, sending off a line over the eye, and another below it; ear coverts, lower eyelid and entire under parts pure white, a purplish-chestnut stripe starting on each side in a line with the black mustache, and extending back to the thighs. Wing and tail feathers dark-brown edged with bluish-gray, except the secondaries and tertials, which are bordered with light yellowish-green, the shoulders with two greenish-white bands; three outer tail feathers with white patches near the end of the inner webs.

Length. 5; wing, 2.50; tail, 2.20.

Habitat, eastern United States and southern Canada west to the Plains.

DENDROICA CASTANEA (WILSON). (660.)

BAY-BREASTED WARBLER.

This warbler is by no means a common species. Arriving about the beginning of the second week in May it is frequently seen until about the 20th, when those individuals destined to remain and breed in the State seem to disappear with the others, but to build their nests, presumably, for they are seen at intervals in the forests all summer, and with the young with them in the latter part of July and August, but disappear entirely by the 25th of September. It has never been my fortune to secure the nest, but I have several carefully prepared descriptions of it which essentially agree in its construction of fine twigs, stems of grass, or moss, lined with fibrous roots, moss and bits of fur of animals. Three to four blue-green eggs, all over spattered with brown, which becomes confluent at the larger end. Its presence at Red Lake, Mille Lacs and in St. Louis county in several localities, rests on the testimony

of Mr. Lewis. Mr. Washburn mentions seeing but one of them among his identifications in the Red river valley. They may have begun to change localities at that time, and thus have eluded him. Their return to winter habitations is somewhat less precipitous than many others of its genus, as I have found them in the forests along the Mississippi and surrounding some of our lakes as late as the 20th of September, and even into the earliest days of October on one occasion.

SPECIFIC CHARACTERS.

Crown dark reddish-chestnut; forehead and cheeks, including a space above the eye, black; a patch of buff-yellow behind the cheeks; rest of upper parts bluish-gray streaked with black; edges of interscapulars tinged with yellowish, scapulars with olivaceous. Primaries and tail feathers edged externally with bluish-gray, extreme outer one with white; secondaries edged with olivaceous. Two bands on the wing and edges of the tertials, white; under parts whitish, tinged with buff; chin, throat, fore part of breast and sides, chestnut-brown, lighter than the crown; outer tail feathers with a patch of white on the inner web near the end, the others edged internally with the same.

Length, 5; wing, 3.05; tail, 2.40.

Habitat, eastern North America.

DENDROICA STRIATA (FORSTER). (661.)

BLACK-POLL WARBLER.

Although a regularly returning species in considerable numbers during the two migrations, the Black-poll Warbler probably goes beyond our lines to breed. Possibly, when all the corner lots have been sold, and this portion of the new northwest has been effectively plowed and fenced in, some of our æsthetic millionaires may give such a measure of his time to the critical study of the habits of the birds, as here and there a lord or duke has done in Great Britain of the ants, when, amongst the other unfinished labors of love, the breeding habits of this bird shall be definitely settled. Till then we must wait.

The Black-polls ride the very crest of the wave of migration both in spring and in autumn. But they do not remain very long, passing on to the north by the 20th of May, and returning in marked numbers by the 10th to the 15th of September—sometimes a little earlier, and sometimes a little later, according to the special character of the season. Some years they spend a good share of October here, but only exceptionally. They

follow the course of the principal streams, lakes or swamps, along which they may be seen only in the tops of the tallest trees, with no special proclivity towards the conifers, as is the case with some of the warblers. The kind of insects they prefer for food doubtless determines their haunts, as they are disposed to get as much of their repast upon the wing (like the true fly-catchers), as they can. The nest is most likely to be found in the summit branches of the lofty trees they are known to haunt. This it has not been my fortune to have ever yet seen, yet from a recent communication from a gentleman residing at Duluth, (Mr. J. H. De Voe), I feel inclined to think it probable that he has the nest and eggs of this species, obtained near that city on the 30th of May of the present year, (1889). It was found snug up to the trunk, on the lowest limb of a fir balsam, within easy reach of the ground, and contained four eggs, of an ashy-white color, lightly sprayed all over with brown of several shades, more abundantly in a loose band around the bulge of the egg. The nest was built of moss, weeds, dry grass, bits of the fir branches, etc., and was rather loose and bulky.

SPECIFIC CHARACTERS.

Crown, nape and upper half of the head, black; lower half including ear coverts, white, the separating line passing through the middle of the eye; rest of upper parts grayish-ash, tinged with brown and conspicuously streaked with black; wing and tail feathers brown, edged externally (except the inner tail feathers), with dull olive-green; two conspicuous bars of white on the wing coverts, the tertials edged with the same; under parts white, with a narrow line on each side of the throat from the chin to the side of the neck, where it runs into a close patch of black streaks, continued along the breast and side to the root of the tail; outer two tail feathers with an oblique patch on the inner web near the end; the others edged internally with white.

Length, 5.75; wing, 3; tail, 2.25.

Habitat, eastern North America to the Rocky Mountains.

DENDROICA BLACKBURNIE (GMELIN). (662.)

BLACKBURNIAN WARBLER.

Who would see the most beautiful of the whole family of the wood warblers, need not look for him in the common brush and thickets when working his way northward in spring, but must keep to the tall trees of the forest, in shady woods, and preferably along the uplands and ridges. He comes with the

tide, on the 10th, 11th, or 12th of May, in considerable numbers, and should be looked for, neither in the lowest, nor the topmost branches of the trees through which he industriously feeds and flits, but between them. His bright, boldly contrasted colors make him comparatively easy to identify even when on the wing, but he manifests no disposition to extend any special confidence to the good homo who may be earnestly looking for him, even for the brief period of mutual recognition. For many years after I came to know of the annual presence of this bird in migration, I believed they all passed much further to the north to breed, for the reason that their stay seemed so very short, but it has been seen too many times since, in the deep, dense woods, in different localities during summer, for doubt of its breeding in many places in the forest portions of the State. It is almost universally distributed in its migrations, and presumably during the summer, but returns southward early in September, when less frequently, it is seen amongst other species of its family.

They maintain a very pleasant warble while feeding, often changing places in their search for "the food prepared for them," flitting spiritedly through the thicket, or amongst the branches of the forest trees, when glimpses of their unique plumage, like the twilight flashing of the fire-flies in the shadows of the woodlands arrest the eye. They did not pass us without interesting many eyes and ears, the most enthusiastic, and devoted of which were those of my co-ornithologist, so favorably located as she was while visiting her friends on that marvellously beautiful, metropolitan island of our city. Not a note of the resolute song escaped her keen ear, nor a flexion of its beautiful body her eye, but each was seized and treasured to be coined into "apples of gold and pictures of silver" for the instruction and delight of her friends who were thus transformed into grateful pupils who could never forget her or her instructions. Long and familiarly as I had known the bird, I knew more from listening to her thrilling and enthusiastic descriptions. It was born in her, and never acquired.

NOTE. I have found the nest and eggs of this warbler on that very island since the foregoing was written. It was in the fork of a sapling growing in the side of the elevated bank, very near the waters of the Mississippi, near which hundreds of people passed daily. I have been told of the nests of this species having been found in several localities in the Big Woods, but have had no opportunity to very reliably assure

myself of the certainty of the identification. Audubon's description of the Blackburnian Warbler's nest and eggs meet my own observations so perfectly that I quote it. It is as follows: "It was composed externally of different textures, and lined with silky fibers, and then delicate strips of fine bark, over which lay a thick bed of feathers and horsehair. The eggs were small, very conical towards the smaller end; pure white, with a few spots of light red towards the larger end. It was found in a small fork of a tree, five or six feet from the ground, near a brook."

SPECIFIC CHARACTERS.

Upper parts nearly uniform black, with a whitish scapular stripe and a large white patch in the middle of the wing coverts; an oblong patch in the middle of the crown, and the entire side of the head and neck, including a superciliary stripe from the nostrils, the chin, throat, and forepart of the breast, bright orange red; a black stripe from the commissure passing over the lower half of the eye, and including the ear coverts, with, however, an orange crescent in it just below the eye, the extreme lid being black; rest of under parts white, strongly tinged with yellowish-orange on the breast and belly, and streaked with black on the sides; outer three tail feathers and quills almost black.

Length, 5.50; wing, 2.33; tail, 2.25.

Habitat, eastern North America to the Plains.

DENDROICA VIRENS (GMELIN). (667.)

BLACK-THROATED GREEN WARBLER.

There was general rejoicing when this beautiful bird was first obtained. I found him in a thicket of poplars some four miles out in the country, and near a strip of heavy forest timber. He arrives not very unfrequently as early as the 30th of April, once on the 25th of that month, but commonly before the 5th of May. On one or two occasions it has been collected as late as the 5th of October, but as a rule they are gone by the 25th of September. This warbler comes to stay, and breeds in almost every section of the State, but is never represented by large numbers. The earliest nests I have seen have been built after the 5th of June, and they bring out but one brood so far as I have observed. It is generally placed in a small tree, about ten or twelve feet from the ground, and consists of fine strings of bark of some flexible kind, disposed very artistically in circles, and woven in with the flaxen fiber of some kinds of weeds for the main structure, which is lined with feathers, and a

little quantity of horsehairs. Some nests have fine grass in their lining. They lay four flesh-tinted white eggs, spotted at the large end with brown, and dotted with pale-brown and lavender.

Mr. Washburn obtained a beautiful specimen at St. Vincent, in the Red river valley late in August.

SPECIFIC CHARACTERS.

Upper parts exclusive of wing and tail, clear yellow, olive green, the feathers of the back with hidden streaks of black; forehead, sides of head and neck, including a superciliary stripe, bright yellow; a dusky olive line from the bill through the eye, and another below it; chin, throat and fore part of breast, extending some distance along the sides, continuous black; rest of under parts white, tinged with yellow on the breast and flanks; wings and tail feathers dark brown, edged with bluish gray; two white bands on the wing; the greater part of the three outer tail feathers white.

Length, 5; wing, 2.60; tail, 2.30.

Habitat, eastern North America to the Plains.

DENDROICA VIGORSII (AUDUBON). (671.)

PINE WARBLER.

This seems to be a rather uncommon species, first obtained by Mr. Geo. McMullen of Minneapolis, on May 10th, 1876, since which time it has been collected by several different persons who have submitted them to me for examination.

I have found that they arrive much earlier than the date mentioned, having brought them to the basket as early as the 10th of April, although the average should be placed about the 20th.

They breed in the quiet pine forests, their nests being usually on small sized pines, and about twenty feet from the ground. It is not strange that they seem quite rare even though there may be a good many in the country, when their solitary habits in breeding exclude them so effectually from observation, The nests might escape the most vigorous scrutiny, so well is it and both of the birds concealed in the dense evergreen foliage. They consist of strips of bark probably from off the cedar trees, and pine leaves, or needles ingeniously woven, or twisted into each other so as to effect a firm, compact, and tasteful structure. It is delicately lined with mosses and different kinds of hair. Amongst a pretty large collection of nests, those of this species are character-

istic for their architecture and neatness. The eggs, four to five in number, are white with a bluish tinge, dotted with two shades of brown and reddish-pink, with splashes of purple.

A visit to their legitimate haunts in summer, will find them actively searching the limbs and branches of different species of trees for their special food, after the manner of the creepers, ever and anon dashing out after an insect on the wing, like the flycatchers. They leave all parts of the State about the 25th of October. Each successive year brings me additional testimony respecting its numbers and distribution. They breed at Brainerd, where I can find them in June of almost any year. In every instance when I have collected birds of this species in migration, they have been associated with the Palm Warbler. [*D. palmarum* (*Gmelin*)].

SPECIFIC CHARACTERS.

Upper parts nearly uniform clear olive-green, the feathers of the crown with rather darker shafts; under parts generally, except the middle of the belly behind, and under tail coverts (which are white), bright gamboge-yellow, with obsolete streaks of dusky on the sides of the breast and body; sides of head and neck olive green like the back, with a broad superciliary stripe; the eyelids and a spot beneath the eye very obscurely yellow; wings and tail brown; the feathers edged with dirty white, and two bands of the same across the coverts; inner web of the first tail feather with nearly the terminal half of the second with nearly the terminal third, dull inconspicuous white.

Length, 5.50; wing, 3; tail, 2.40.

Habitat, eastern North America to the Plains.

DENDROICA PALMARUM (GMELIN). (672.)

PALM WARBLER.

When, and where to look for the Palm Warblers, are not difficult questions to answer to one who has watched the movements of birds in migration for many years. We shall need our rubber boots to prepare us for circumnavigating thickets in swampy sections, and we shall need to be warmly clothed, for the winter has gone too recently for dry turf, or for the air to have become specially balmy. Although we may commence our search a few days too soon, we cannot afford to have him occupy our territory unobserved, and so on the 10th of April, we go forth. He may have been there already five days according to notes embracing that date, but somehow a natural born ornithologist will seem to know by his actions how long

he has been on the ground. Birds of all species, seem to "give themselves away" by a kind of nervousness in their manner when they have just now arrived. But it is soon at work, busily searching for insects, on the ground, on the bushes, and in the air where it seizes them readily in short excursions on the wing. It clings closely to the vicinity of moist places bordering thickets of low trees, or tall brush. It breeds limitedly in the northern sections of the State.

The nest is quite uniform in structure and in the materials of which it is composed. Always on the ground, and fairly concealed by a bush, or a tussock of grass, with dry leaves to complete the protection, the nest is constructed of weeds and grasses at the bottom, on which are imposed layers of fine roots and finer grass, over which are down, caterpillar's silk, hairs, fine grasses and moss. It is then lined with fine roots, thus constituting a deep nest in which are deposited three eggs of roseate white color, spotted and blotched at the larger end with brown and reddish.

The young are out of the nest by the 25th of June. Individuals of this species are seen in the autumn late in October occasionally, but it is so secluded in its habits that it is difficult to determine its time of departure very accurately. For the same reason, I have obtained less notes from correspondents in different parts of the country embraced in the survey. They are principally found during summer in the northern counties, at least I have had a larger number of reports from that section. I met them in their characteristic haunts late in May in the vicinity of Minneapolis, and Mr. Lewis reports them in Becker county a month later. Others have given them, associated with the young in August in various localities.

SPECIFIC CHARACTERS.

Head above chestnut red; rest of upper parts brownish olive-gray, the feathers with darker centers, the color brightening on the rump, upper tail coverts and outer margins of wing and tail feathers, to greenish-yellow; a streak from nostrils over the eye, and under parts generally, including the tail coverts, bright yellow, paler on the body; maxillary line, breast and sides finely but rather obsoletely streaked with reddish brown; checks brownish, (in highest spring plumage, chestnut like the head); eyelids and a spot under the eye, olive-brown; lores dusky; a white spot on the inner web of the outer two tail feathers at the end.

Length, 5; wing, 2.40; tail, 2.25.

Habitat, eastern United States to the Mississippi river.

SEIURUS AUROCAPILLUS (L.). (674.)

OVEN-BIRD.

For the relative numbers of its species generally, the Oven-bird is very common throughout the State from the 1st of May to the 20th of September, with occasional instances of individuals remaining until far into October. It is only found as a general thing, in the most unfrequented places, near swamps, although I have met them in autumn in dry, densely wooded localities where it appeared very little disturbed by my presence, keeping about its search for insects among the fallen leaves. However, its breeding habits confine it to the moist vicinity of swamps in or near the forests. Why this bird is dubbed with the unsentimental name "Oven-bird," is more than I can understand, for if from the form of its nest, we ought to have Oven-birds in several different genera of widely different families. I am sure that the Golden-crowned Thrush is far more appropriate, the colors, habits and form of the bird being so beautifully recognized by the name.

The first nests of the season are begun by both birds about the 15th of May, others following into the first days of June. It is made of grasses and dry leaves into a very compact mass, with its entrance on the side, and so small as to render it a surprise that the bird can enter it. It is lined with fine, soft grasses and hairs of different kinds. They lay six creamy-white eggs, irregularly spotted or blotched with several shades of reddish-brown. As with so many other species, the larger end of the egg has the markings thickest, running into confluent patches in some instances. The song of the bird is easily recognized by any one who has heard it, especially by its *crescendo*, beginning at a low pitch and increasing to remarkable fullness at its close. It is more nearly expressed by the formula written, *queecha, queechea, queechea, queechea, queechea*, increasing in force and volume to the end.* Samuels says: "I have heard this song in the mating and incubating seasons, at all hours of the night. The bird seems, at that time, to ascend into the air to a considerable height, and utters its notes while hovering and slowly descending. I have noticed the same habit in the Maryland Yellow-throat, and some other birds." I have never had the pleasure of hearing either of these species under such circumstances.

*Birds of New England, p. 219.

The Golden-crowned Thrush lingers as late as the frost leaves it sufficient food, which in 1885 was late in October, but does not generally extend beyond the 25th of September.

SPECIFIC CHARACTERS.

Above, uniform olive-green with a tinge of yellow. Crown with two narrow streaks of black from the bill, enclosing a median and much broader one of brownish-orange. Beneath, white; breast, sides of body, and a maxillary line streaked with black. Wings moderate, about three-quarters of an inch longer than the tail; first quill scarcely shorter than the second. Tail slightly rounded, feathers acuminate. Tarsi about as long as the skull, considerably exceeding the middle toe. Under tail coverts reaching within about half an inch of the end of the tail.

Length, 6; wing, 3; tail, 2.40.

Habitat, eastern North America to the Rocky Mountains.

SEIURUS NOVEBOBACENSIS (GMELIN). (675.)

WATER THRUSH.

The Water Thrush is a rather common resident of most wooded portions of the State, arriving usually between the 25th and 30th of April.

Their song is not very often heard, and when it is, it is difficult to describe it. But having been heard by an interested ear, it will never be forgotten beyond recognition. The notes are clear, strong and impressively sweet, the strain beginning in a high, spirited pitch, and gradually gliding downward in key and volume to the softest before lost to the ear. They are paired when they come, and the song is warbled thereafter at intervals all the day, as long as the female is setting on the nest, but immediately afterwards we hear no more from them during the summer ordinarily. They hide their nests so effectually that I have never been able to find one, but by the aid of an exceedingly persistent lad who is an adept at bird's nest hunting, I am prepared to "speak by the book" in describing it. It was placed by the side of, and well under a very old, decayed log, lying in a dense thicket in a swamp. It consisted entirely of grass, leaves and moss, in such a quantity as to give it quite a bulky appearance after getting down to it.

The entrance was porched over much like the Oven-bird's nest, and the eggs were four in number, flesh colored, spotted over with pale reddish brown, emphasized somewhat about the

larger end. Their habits preclude much familiarity with them, and little more is known of them than when first identified and described. They remain here until about the first week in October.

SPECIFIC CHARACTERS.

Bill from rictus, about the length of the skull. Above olive brown, with a shade of green; beneath pale, sulphur yellow, brightest on the abdomen. Region about the base of the lower mandible, and a superciliary line from the base of the bill to the nape, brownish yellow. A dusky line from the bill through the eye; chin and throat, finely spotted. All the remaining under parts and sides of body except the abdomen, and including the under tail coverts, conspicuously and thickly streaked with olivaceous brown, almost black on the breast.

Length, 6.15; wing, 3.12; tail, 2.40.

Habitat, eastern to arctic America.

NOTE. Neither Mr. Washburn nor Mr. Lewis in the north, nor Dr. Hvoslef in the south part of the State have referred to this species in their correspondence. I have, however, found it to be resident in many localities by the specimens sent me for identification.

GEOTHLYPIS AGILIS (WILSON). (678.)

CONNECTICUT WARBLER.

In June, 1869, in a thicket by the wayside in the suburbs of the city, I collected two birds from the same bush, one of which proved to be of this species and the other was the Mourning Warbler (*G. Philadelphia*). Both were then new to Minnesota ornithology, and of course it was a great find. Since that time I have seen them in both migrations nearly every year, but have only occasionally met with them during the summer, as on that first discovery of them, and then along the Red river near Fargo and Moorhead. *Agilis* seems to be the rarer of the two species, the nest of which I have never yet seen, nor have I been apprised of its discovery by anyone else. Mr. U. S. Grant found several of these warblers in St. Louis county in July, which not only corroborates its breeding habits affirmed, but shows that they are by no means confined to the vicinage of the Red river. Soon after the frosts begin to interfere with their food supply, the migration southward commences, which is not closed for fifteen to twenty days ordinarily. At such times they frequent thickets along continued banks, and sides of the hills, much after the manner of sparrows, but are driven into trees more readily.

They have a simple note which is almost constantly repeated in a subdued tone, which sounds somewhat like *keet*. I am informed that quite a number of local collectors have obtained the species from time to time. Dr. Hvoslef reports them present at Lanesboro, June 1st, 1882.

SPECIFIC CHARACTERS.

Upper parts and sides of the body uniform olive-green, very slightly tinged with ash on the crown, sides of the head ash, tinged with dusky beneath the eye. Chin and throat grayish ash, becoming darker gradually to the upper part of the breast, where it becomes tinged with dark-ash. Sides of the neck, breast, and body, olive like the back; rest of under parts light-yellow. A broad continuous white ring round the eye; wings and tail feathers olive, without any trace of bars or spots. Bill brown above; feet yellow.

Length, 6; wing, 3; tail, 2.25.

Habitat, eastern North America to the Mississippi river and Red river.

GEOTHYLPIS PHILADELPHIA (WILSON). (679.)

MOURNING WARBLER.

This is another species of the tardy genus *Geothlypis*, that has been identified, but whose habits have remained quite obscure. I obtained a single individual in typical plumage, on the first day of June, 1869, very nearly within the city limits. Since then I have met occasionally migrants in autumn, and have a few reports from competent correspondents. Dr. Hvoslef obtained one in high plumage on the 25th of May, 1884. Several local collectors claim to have obtained specimens several years earlier. Mr. Washburn searched but did not find it where Coues found it previously, "breeding abundantly along the Red river." Their early southern movement may explain its absence at the time the former was in that locality. Mr. Trippe had, somewhat earlier, found it breeding prolifically in Minnesota, but failed to find the nest. He "repeatedly saw the old birds feeding the young in the latter part of June and early in July," which makes its local breeding assured. He further says:—"They are similar in their habits to the Maryland Yellowthroat, but are not so exclusively devoted to thickets and underbrush, frequently ascending to the tops of the tamaracks, for which they show a great predilection." It is to be hoped that more facts regarding its local history may ere long be obtained. Coues says:—"The nest is rather slight, but a neat

structure, placed on the ground, composed of various soft, fibrous materials and fine grasses, mostly circularly arranged, lined with fine rootlets."

SPECIFIC CHARACTERS.

Wing but little longer than the tail, reaching but little beyond its base. Head and neck and all around, with throat and forepart of breast ash-gray, paler beneath; feathers of chin, throat, and forebreast in reality black but with narrow ashy margins, more or less concealing the black except on the breast. Lores, and region round the eye, dusky, without any trace of a pale ring; upper parts and sides of the body clear olive-green; under parts bright-yellow; tail feathers uniform olive; first primary, with the outer half of the outer web, nearly white.

Length, 5.50; wing, 2.45; tail, 2.25.

Habitat, eastern North America to the Plains.

GEOTHLYPIS TRICHAS (L.). (681.)

MARYLAND YELLOW-THROAT.

It took a long time to learn all the "*ins and outs*" of this little warbler. If there are any remaining unlearned, they must be hard to find out indeed, for there does not seem to be many places circumstantially adapted to the habits of the species not already occupied by a pair of representatives in their season.

It reaches the vicinity of Minneapolis about the 27th of April, and is reported from nearly every part of the State by the 5th of May. The nests are built and occupied by about the last days of that month. They are constructed of leaves mixed with grasses, and lined with finer grass and hairs. They are placed on the ground close to a bush and are quite bulky. They often have their entrance provided for in one side, after the manner of the Golden-crowned Thrush. They rear two broods, and are gone by the 20th of September usually. Its song is quite strikingly rendered into words by Rev. J. H. Langille in the formula, *weech-a-tee, weech-a-tee, weech-a-tee, weech-a-tee*, in distinct, whistling notes, never to be confounded with those of any other songster. It is delivered rather deliberately, with the accent strongly on the first syllable. Under some circumstanceness, the note is abbreviated by one syllable, leaving it *weech-ee, weech-ee, weech-ee, weech-ee*, with only a faint touch upon the last, when it somewhat resembles the song of another warbler. When they first arrive they must be sought

in the thickets, when they are mostly silent and somewhat suspicious. It is not long, however, before their familiar notes are heard about our houses, in the currant bushes, and in the orchard. In the time of nesting they retire from such familiar places to the borders of woods, near damp, swampy localities, in dense thickets. Contrary to their reputed proclivity to the vicinity of farm houses, in the eastern states, they avoid them during incubation nearly if not quite uniformly. The earliest nests I have discovered were occupied by the 17th of May, although as a general rule, it is a little later. They frequently linger till late in September, and an instance has occurred when a few of them were seen in October. Dr. Hvoslef reports them abundant in his section on the 5th of May. Mr. Washburn found them common in the Red river valley.

SPECIFIC CHARACTERS.

Upper parts olive-green, tinged with brown towards the middle of the crown; chin, throat and breast as far as the middle of the body, and under tail coverts, bright yellow; belly dull whitish buff; sides of body strongly tinged with light olive-brown; under coverts glossed with the same; a band of black on the forehead, (about 0.20 of an inch wide in the middle) passing backward so as to cover the cheek and ear coverts, and extending a little above the eye; this band bordered behind by a suffusion of hoary ash, forming a distinct line above the eye, and widening behind the ear coverts into a large patch with a yellow tinge.

Length, 5.50; wing, 2.40; tail, 2.20.

Habitat. eastern United States to the Mississippi river.

ICTERIA VIRENS. (L.). (683.)

YELLOW-BREASTED CHAT.

This species is a regular summer resident of the southwestern portion of the State, reaching those sections early in May. They are not common, and rarely extend their incursions beyond the lower tier of counties, one or two individuals having been obtained in the valley of the St. Peter's river, and a like number observed in Traverse county. I am familiar with them in their western haunts, and have long hoped to have an opportunity to note their habits here, but I have never met with them personally in my locality. They are reported by Mr. Chas. R. Keyes and Dr. H. S. Williams, of Davenport, Ia., as rather common summer residents of that state. In their catalogue of the Birds of Iowa, they say: "Summer resident,

rather common; arriving the first week in May. Haunts the low, open woodlands and thickets along the streams. Nidification commences about the first week in June. The nest is usually placed four or five feet from the ground, in a thickly foliated bush. It is composed of dry grasses and leaves, and lined with fine grasses and fibers of bark. The eggs number three to five."

SPECIFIC CHARACTERS.

Third and fourth quills the longest; second and fifth little shorter; first nearly equal to sixth. Tail graduated. Upper parts uniform olive green; under parts, including the inside of wing, gamboge yellow as far as nearly half way from the point of the bill to the tip of the tail; rest of under parts white, tinged with brown on the sides; outer side of tibia plumbeous; a slight tinge of orange across the breast. Forehead, and sides of head ash, the lores and region below the eyes, blackish. A white stripe from the nostrils over the eye and involving the upper eyelid; a patch on the lower lid, and a short stripe from the side of the lower mandible, running to a point opposite the hinder border of the eye, white. Bill, black; feet, brown.

Length, 7.40; wing, 3.25; tail, 3.30.

Habitat, eastern United States to the Plains.

NOTE. The above has been written some years, and I take pleasure in stating that Dr. T. S. Roberts verbally reported a specimen he had received from some one within our borders obtained in 1890.

P. L. H.

SYLVANIA MITRATA. (GMELIN.) (684.)

HOODED WARBLER.

It has only been made evident that this species is fairly well represented in restricted localities after many years of careful inquiry. The first individual that came into my hands I secured May 12th, 1869, since which time at different times perhaps a half dozen or more have been received. It has been a surprise to me that my correspondents have not reported it; still its habits of concealment are such that one must be able to give it much time to obtain specimens even where previously known to be moderately well represented. Even the song, though simple and often quite continuously maintained, differs so very much under a change of the time of the day, and the weather that it is only after repeated and the most careful notings that its presence becomes assured by it alone. In western New York where I once lived, it was a common summer resident, but almost as unknown to casual observation as it is in Minnesota. Its habits of eating are like those of the flycatch-

ers. Remaining almost constantly concealed from view in the leaves and fine branches of the undergrowth of border land to denser forests, it flips suddenly up into the air of the open places above the undergrowth, and seizing its insect, disappears as quickly in the thicket again. They come with the great influx of warblers from the 10th to the 12th of May, and are found building their nests from about the 20th to the end of the first week in June, and sometimes bring out two broods. The structure consists of dry leaves and fibrous barks, and is lined with grass and hairs in addition to the fibres mentioned. It is almost proverbially bulky, and placed in the forks of a bush near the ground and usually contains from three to four white eggs, variously speckled with reddish brown. They all disappear during the last week in August.

SPECIFIC CHARACTERS.

Bill black; feet pale yellow. Head and neck all around, and fore part of the breast black; a broad patch on the forehead extending around on the entire cheeks and ear coverts and the under parts bright yellow; upper parts and sides of the body olive-green; greater portion of inner web of the three outer tail feathers, white.

Length, 5; wing, 2.75; tail, 2.55.

Habitat, eastern United States, and west to the Plains.

SYLVANIA CANADENSIS (L.). (686.)

CANADIAN WARBLER.

When this warbler first came under my notice, in 1875, I was confident it was a straggler, but without any resource for information as to the ultimate limits of its migratorial distribution, I did not have to wait very long before his local history began to unfold in fine style, for in a few weeks I bagged his nest, companion, self, eggs and all.

It reaches the lower limits of my province about May 15th, and the larger portion of them pass still further north, nevertheless may remain and breed with us. The nest has been found by Mr. Treganowan and Mr. Lewis, and reputedly by some one else, and always on the ground. (The location has been occasionally given from Audubon to date, as in low trees and bushes). It consists of leaves, roots, and grasses, its lining generally of the same with some hairs and considerable lichens included. Although quite bulky, it is rather shallow, and generally contains four gray-white eggs, tinted with a slight blush of rose and spotted or blotched with lilac and brown especially about the larger end.

I am not a little surprised at the differences in the descriptions of the different writers as to its song. It is quite certain that not only do eyes see differently, but ears hear very much so. To my ear, or rather, to my imagination, Langille has given the best form of words to help recall the song of this bird in the following syllables: *chi-reach-a-dee*, *reach-a-dee*, *reach-a-dee-chi*, nervously and spiritedly delivered.

He speaks of a characteristic ventriloquism in the utterance of its song by which one is often misled as to its nearness, which has often attracted my attention, and used to lead me away on a fool's chase to locate the singer. They raise one brood, and retire from the country by the 15th of September.

SPECIFIC CHARACTERS.

Upper parts bluish-ash; a ring round the eye, with a line running to the nostrils, and the whole under parts (except the tail coverts which are white) bright yellow; centres of the feathers in the anterior half of the crown, the checks, continuous with a line on the side of the neck to the breast, and a series of spots across the fore part of the breast, black; tail feathers unspotted.

Length, 5.35; wing, 2.65; tail, 2.50.

Habitat, eastern United States westward to the Plains.

SETOPHAGA RUTICILLA (L.). (687.)

AMERICAN REDSTART.

A bird of the trees and bushes to such an emphatic degree, that persons of considerable observation have failed to see them altogether for several years in succession. Their habits are eminently calculated to keep them from the eye of the casual observer, for when pursuing their insect food on the wing, he is confident he has caught a glimpse of a flycatcher, and when searching the bark of the trunks and branches of the trees for eggs and larvæ, he calls it a warbler. Much of its time is spent upon the ground, amongst decayed logs and brush, in search of forms of insect life abounding in those localities, where it is a difficult matter to see them.

However, the strongly contrasted colors of the male, and its dashing enthusiasm during the mating time, singing vigorously, and changing its perch from tree to tree in the woods, leads to its identity by those familiar with its habits and song.

Rev. J. H. Langille describes its humble song as resembling the notes of a tin whistle, and says:—"There is not a little variety in its whistling tones, and the theme is always well

modulated. Like all bird songs, it contains immeasurably more than anything to which it can be likened." It is a common summer resident in its favorite localities everywhere within the State.

The collector of skins for his cabinet, finds he has more of that species than he wants to skin, and if a man of true sentiment, enters upon his next slumbers with the shadows of a degree of remorse flitting through his latest memories like bats through the open casement upon a hot night in August.

They arrive in spring with great regularity about the 10th of May, remaining until about the 20th of September. The nest is found usually on a limb all the way from five to twenty feet from the ground, and on a sapling in the larger timber. It consists of strips of different kinds of bark, fine grass and delicate weeds.

These are very artistically arranged into a snug structure, which is made very firm by a secretion from the bird's mouth that glues it solidly together. Down, from vegetable sources, silk from caterpillars' nests, and dry, soft lichens, are glued to the exterior exceedingly neatly, while the nest is lined throughout its deeply hollowed cavity with fine strips of different barks, fine fibrous roots, vegetable down and hairs. They lay four eggs of a cream-white, spattered with spots of reddish-brown and lilac.

They are very common about Otter Tail, Mille Lacs and Big Stone lake, according to reports from different correspondents, and Dr. Hvoslef embraces them in his notes kindly furnished me from Fillmore county.

SPECIFIC CHARACTERS.

Prevailing color black; a central line on the breast, abdomen and under tail coverts, white; some feathers in the latter strongly tinged with dark brown. Bases of all the quills, except the inner and outer, and basal half of all the tail feathers, except the middle one, a patch on each side of the breast, and the axillary region, orange-red, of a vermilion shade, on the breast.

Length, 5.25; wing, 2.50; tail, 2.45.

Habitat, North America.

Family MOTACILLIDÆ.

ANTHUS PENNSYLVANICUS (LATHAM). (697.)

AMERICAN PIPIT.

To any interested observer of the birds the characteristics of the Titlark would become especially so. Only seen in migrations it can scarcely fail of instantaneous recognition. They are very irregular in their distribution in migration, sometimes appearing for two or three successive springs in nearly the same localities, and then absenting themselves several years to return in the same or greater numbers. And I have often observed that a full representation in the spring migration was more likely to be followed by a light one in the autumn. They return by some other route.

I should say, that as a rule, they are more numerous in fall than in spring, yet this rule will have some marked exceptions.

They arrive in the southern part of the State about the 20th of May, and after remaining only a short time, pass on to the further north to breed. About the second week of September they return, and may be seen daily on the plowed fields in large flocks until after the middle of October. It is not unusual to find them associated with the Lapland Longspurs. Their flight is graceful in the extreme, and so characteristic as to point out their identity at considerable distance. Rumor asserts that they breed in the islands of the Lake of the Woods, but it is not yet sufficiently authenticated. They are reported as abundant in their fall migrations in the St. Peter's and Red river valleys, and on the level prairies of Grant and Douglas counties. Dr. Hvoslef gives them full recognition in Fillmore county in their migrations.

SPECIFIC CHARACTERS.

Above olive-brown, each feather slightly darker towards the central portion; beneath pale dull buff, or yellowish-brown, with a maxillary series of dark brown spots and streaks across the breast and along the sides. Ring round the eye and superciliary stripe, yellowish; central tail feathers like the back, the others dark blackish-brown; the external one white, except at the base within; a white spot at the end of the second; primaries edged with whitish; other quills with pale brownish.

Length, 6.50; wing, 3.45; tail, 2.95.

Habitat, North America.

ANTHUS SPRAGUEII (AUDUBON). (700.)

SPRAGUE'S PIPIT.*

It has been a matter of question whether we could give this bird a just place amongst the bird fauna of this State, notwithstanding its occasional capture near the Red river, but it has been so often seen and carefully identified that all doubts are forever removed.

While by no means to be accounted *common* summer residents, they are sufficiently numerous to be considered more than *rare*, in the northern portions of the State to the British Possessions.

I have found them more frequently in Pembina county than otherwheres, but only so, I think it is probable, because my opportunities have been greater to observe them there. In traversing those sections I have employed a buckboard which has made it possible to get a few specimens, and to observe a couple of nests which were occupied by the second brood, presumptively, as it was in June, and Mr. Lewis has since found them as early as April 23d in Clay county.

Occasionally individuals have been secured in the lower belt of counties, yet no nests have been reported from that section. But I have had the pleasure of identifying Sprague's Lark several times in the county in which I live, once within the territory since included in the limits of the city corporation, and breeding here as early as the 25th of March (1870). In June I had the repeated exceptional pleasure of hearing its song while mounting to an altitude of not less than seven, and I think considerably more than eight hundred feet. The first time that this transpired I was riding in company with a friend, and on my way to collect birds, so that I was on the alert. I had an excellent field glass with me, and at the moment in my hand, as I saw the bird spring from the grass within a few feet of my horse, and a little to the left of me. It flew a hundred feet away with a succession of flits of the wings, which lifted it about twenty feet into the air, when it turned and with the same movements of the wings, came indirectly towards me, rising another twenty feet, or thereabouts, when it again turned and began to sing with great enthusiasm, and thus back and forth, each time a little increasing the length of its zigzag undulations, it climbed upward, upward, upward,

* When I wrote the above account of this species, I did not know that Captain Blaikiston had observed it as early as May 4th, 1859, a fact which reached me at page 176 of North American Birds.

until it disappeared from my unaided vision, when I brought the glass to my eye and followed him still, all the while singing, singing, singing as he swung right and left, vaulting into the very blue of the heavens, when suddenly he closed his wings and his song, and head downward came down like an arrow, opening his closed wings only when within a yard of the ground, and within the same distance of the very spot from which he ascended. My desire to make sure of his identity had brought my eye to the barrel of my ready gun, when the thought of hearing the song again, and of securing the nest deterred me. As much time as I could possibly spare on that still, beautiful morning having gone, I drove away with a delightful memory and a good resolution to see the bird again.

That nest, as afterward proved, was near enough to my carriage to have tossed a marble into it, or more probably upon the back of the faithful, devoted female occupying it. The ground had been excavated to the depth of two inches and the cavity lined with a little fine grass, and contained four dull-white, finely speckled eggs which were quite pointed at one end. I cruelly purposed to appropriate both of the parents of the two remaining eggs (after I had taken two) when the young should be old enough to fly, but I only obtained the male.

I have seen no more of this species in this section where I live, but met with them once or twice in Grant county.

A description of its song would be difficult, but it consisted of a succession of notes, beginning at a high pitch and warbled with a deflected "diminuendo," very pleasingly melodious indeed.

SPECIFIC CHARACTERS.

Above wood-brown, all the feathers edged with paler especially on the neck, where there is a brownish-yellow tinge; under parts dull white, with a collar of sharply defined narrow brown streaks across the forepart and along the sides of the breast; lores, and a superciliary line, whitish; tail feathers, except the middle ones, dark brown; outer one white, second white with the inner margin brown; outer primary edged with white, and two dull whitish bands across the wings; bill and feet yellow, the former brown above.

Length, 6; wing, 3.85; tail, 2.50.

Habitat, interior plains of North America.

Family TROGLODYTIDÆ.

GALEOSOPTES CAROLINENSIS (L.). (704.)

CATBIRD.

In a ride of fifteen miles to Lake Minnetonka, I have counted very nearly one hundred birds of this species in a mornings' hour and a half, many a time in the years gone by. And those singly, not exceeding two, or at most three, being in any one locality. The males arrive in parties of five or six, (never many more), about the 25th of April, and are followed in from three to five days by the females similarly associated, after which they are constantly seen, but not much heard for nearly two weeks, when the sexes begin to be moved towards each other by the instincts of reproduction, which arouses the highest energies and activities of their natures to a new measure of bird life. At that season their harsh calls are heard from every thicket along the way, or down by the creek at the border of the woods, through all the hours of the lengthening days. When the building of the nests begins, the conjugal relationships having become settled, a brief period of reticence intervenes, during which they are seldom heard but constantly seen carrying materials for the construction of the nest. However even at this time, the really early riser will hear the almost matchless song of the males as they pour it forth from the topmost twig of some large bush or sapling. Wilson must have been unfortunate in the hours chosen in which to listen to its exquisite notes, for he says: "His notes are more remarkable for singularity than for melody. They consist of short imitations of other birds, and other sounds; but, his pipe being rather deficient in clearness and strength of tone, his imitations fail where these are requisite. Yet he is not easily discouraged, but seems to study certain passages with greater perseverance; uttering them at first low, and as he succeeds, higher and more free, nowise embarrassed by the presence of a spectator, even within a few yards of him. On attentively listening to him for some time, one can perceive considerable variety in his performance, in which he seems to introduce all the old sounds and quaint passages he has been able to collect. Upon the whole, though, we cannot arrange him with the grand leaders of our vernal choristers, he well merits a place among the most agreeable of *general* performers."

Now, I am conscious of, and credited with having, a very critical ear for sound and melody of all sorts of descriptions; and I do not hesitate to say that for clearness, sweetness, richness of tone, and inexpressible variety of modulation, from *piano* to *forte* in volume, he is peerless among American birds. But I thought myself perfectly acquainted with the Catbird for at least twenty-five years before I was permitted to know his full powers of song, and then by the accident of an *early* ride through his most favored haunts while the female was sitting on her eggs. The famous Brown Thrush can be heard further, and I have once detected as many as twenty-two different modifications in a single outpouring of his melodies, yet the other excels him in everything except his volume of sound. Wilson is "away off" in his descriptions and interpretations of this unique songster. There is indisputably a bitter prejudice against the Catbird, originating in his disfavor among farmers, or perhaps I should say gardeners, and unfortunately aggravated by the harshness of his ordinary call and caution note, to which I must add the infelicity of his vernacular name. "There is a great deal in the name." They continue their songs in the early morning, sometimes until after sunrise, and at sunset in the evening, during the entire summer except in a brief period of moulting following the period of nidification.

They build their nests about the 20th of May, unless the season is exceptionally late, although I have found pairs doing so as late as the first week in June occasionally. They are located in bushes, and generally about five feet from the ground. The platform consisting of sticks and twigs. Upon this substructure, firmly secured, rests the somewhat bulky nest proper consisting of bark, twigs, leaves and straws or dried grass, and lined with hairs and fibrous roots, sometimes with fine grass. It is deeply hollowed. There are usually four, occasionally five eggs of a deep emerald-green of a very symmetrical ovate form. The Catbird may thankfully rest on the generous verdict of his true friend Dr. Coues as to his merits and demerits, as given in his *Birds of the Colorado Valley*, pages 56-60. I cannot refrain from repeating a few of the closing paragraphs in his amusing defence of this bird. "Explain him as we may, the Catbird is inseparable from home and homely things. He reflects as he is reflected in domestic life. The associations, it is true, are of an humble sort, but they are just as strong as those which link us with the trusty Robin, the social Swallow,

the delicious Blue Bird or the elegant Oriole. Let it be the humble country home of toil or the luxurious mansion where wealth is lavished on the garden, in either case the Catbird claims the rights of squatter sovereignty. He flirts saucily across the well-worn path that leads to the well and sips the water that collects in the shallow depression upon the flagstone. Down in the tangle of the moist dell, where stands the spring-house with its cool, crisp atmosphere, redolent of buttery savor, where the trickling water is perpetual, he loiters at ease and from the hearts of the greenbrier makes bold advances to the milk-maid who brings the brimming bowls.

‘In the pasture beyond he waits for the boy who comes whistling after the cows, and follows him home by the blackberry road that lies along the zigzag fence, challenging the carelessly thrown stone he has learned to dodge with ease. He joins the berrying party fresh from school, soliciting a game of hide-and-seek, and laughs at the mishap that never fails when children try the brier patch. Along the hedgerow he glides with short easy flights to gain the evergreen coppice that shades a corner of the lawn, where he pauses to watch the old gardener trimming the boxwood, or rolling the gravel walk, or making the flower bed, wondering why some people will take so much trouble when everything is nice enough already.

‘Ever restless and inquisitive he makes for the well known arbor to see what may be going on there. What he discovers is certainly none of his business. The rustic seat is occupied; the old, old play is in rehearsal, and at the sight of the blushing cheeks that respond to passionate words the very roses on the trellis hang their envious heads. The spectacle tickles his fancy. Always ripe for mischief he startles the loving pair with his quick, shrill cry, like a burlesque of the kiss just heard, and chuckles at their little consternation. ‘It is only a Catbird’ they reassuringly say, yet there are times when the slightest jar is a shock, and pledges that hang in a trembling balance may never be redeemed. ‘Only a Catbird’ meanwhile remembers business of his own and is off. The practical question of dining recurs. He means to dine sumptuously, and so like the French philosopher place himself beyond the reach of fate, but nature in the month of May is full of combustible material, and the very atmosphere is quick to carry the torch that was kindled in the arbor. His fate meets him in the only shape that could so far restrain masculine instincts as to postpone a dinner.

“The rest is soon told, or rather it would be could the secrets of the impenetrable dark-green mass of smilax, whither the pair betake themselves, be unclad. The next we see of the bird he is perched upon the topmost spray of yonder pear tree, with quivering wings, brim full of song. He is inspired. For a time, at least, he is lifted above the commonplace. His kinship with the prince of song—with the Mocking Bird himself, is vindicated. He has discovered the poetry of every-day life.”

The Catbird is among the earliest of our morning songsters. Often his notes may be distinctly heard before the dawn is appreciable to human eyes, and if watched afterward he may be seen flitting noiselessly from bush to bush, with a nervous energy that expresses more than almost anything else the deliciousness of the summer morning hours. His melody is scarcely inferior to that of any other member of his melodious family, notwithstanding so great an authority as the careful, attentive Wilson says: “His notes are more remarkable for singularity than for melody.” Perhaps the distinguished ornithologist’s penchant for playing practical jokes upon this very excitable and demonstrative bird deprived him of his best opportunities for taking in the fullest capacities of his song. He says that he sometimes amused himself, in passing through the woods, with imitating the violent chirping or squeaking of young birds, in order to observe what different species were around him, and says, “for such sounds at such a season in the woods are no less alarming to the feathered tenants of the bushes than the cry of fire or murder in the streets is to the inhabitants of a large and prosperous city.

“On such occasions of alarm and consternation, the Catbird is the first to make his appearance, not singly but sometimes half a dozen at a time flying from different quarters to the spot. At this time those who are disposed to play with his feelings may almost throw him into fits, his emotion and agitation are so great at the distressful cry of what he supposes to be his suffering young. Other birds are variously affected, but none show symptoms of such extreme suffering. He hurries backwards and forwards with hanging wings and open mouth, calling out louder and faster, and actually screaming with distress, till he appears hoarse with his exertions. He attempts no offensive means, but bewails, implores, in the most pathetic terms with which nature has supplied him, and with an agony of feeling which is truly affecting. Every feathered neighbor

within hearing hastens to the place, to learn the cause of the alarm, pressing about with looks of consternation and sympathy. At any other season the most perfect imitations have no effect upon him."

His mocking powers are considerable, but I think them overrated, or rather, their intentional employment is less than generally claimed by writers. This variety involves fragments of what a lively imagination may so interpret, but closer observation will find them to be legitimately his own by inheritance, and strung with approximate regularity upon the rosary of his exquisitely varied and beautiful song. If I am unduly prejudiced in his favor I shall be pardoned when I say that after a long life of enthusiastic observations of the birds, I have met no species thought to be so well-known that appears to me to be so little known. His life is a perpetual testimony, tested by a practical experience of his own, that "a little (ornithological?) knowledge is a dangerous thing." He is the victim of a ruthless, unreasonable prejudice that appears to have sprung from his overweening attachment to man which makes him most common, especially in his rural habitations. To this add the fact that generations have slept away the ante-auroral hours of his choicest melodies, and gone to their final rest declaring him devoid of song because, forsooth, they have only heard his harsh calls of warning and caution to his young and recently enlarged family in the proximity of possible danger, or his unassuming, fatherly mew, which has doomed him to his name of Catbird.

His notes from the top of some bush, ten to twenty feet in height, rolled out into the air of the fresh dewy gray dawn, are not as loud, nor his strains quite as systematically varied as those of the Thrasher, but they are in individual cases at least, much sweeter and astonishingly refined in every quality. I have never yet engaged the companionship of a connoisseur in listening to this despised bird who has not shared to the utmost my rapturous delight while acknowledging his patent prejudice.

I do not quite agree with Wilson in his explanation of the causes which have generated so much dislike to this species, yet accept them as sharing in them.

The Catbirds mostly disappear about the first week in October, although I have occasionally seen stragglers as late as November. There is no considerable portion of the timbered or the brushland regions of the State but what harbor them in considerable numbers.

SPECIFIC CHARACTERS.

Third quill longest; first shorter than the sixth; the prevailing color dark plumbeous; tail greenish-black; the lateral feathers obscurely tipped with plumbeous; the under tail coverts dark brownish-chestnut.

Length, 8.85; wing, 3.65; tail, 4; tarsus, 1.05.

Habitat, eastern United States and British Provinces, including Rocky Mountains.

HARPORHYNCHUS RUFUS (L.). (705.)**BROWN THRASHER.**

The Brown Thrush like the Robin, must have arrived during exceedingly rough weather if he escapes the instantaneous recognition of the waiting, vigilant observer of the migration of the birds. Under all ordinary circumstances, he will announce his presence unmistakably by mounting the top-most limb of some isolated tree, and pouring forth his clear, strong, liquid song in a prolonged strain, embracing twenty or more elementary modulations, rearranging their order at each voluble repetition. The air seems literally burdened with his melody.

All creation is summoned to witness his joy that he has once more reached the very spot in all the earth wherein he would spend the golden summer in rearing a new family of his own. There is however considerable difference in the strength and sweetness of different birds of the species, a fact as patent to other species of wild bird warblers as to domestic songsters. This delightful bird is one of the most welcome of all the hosts which return to us in spring, but he is seldom heard after incubation has been completed, except by those whose ears are earliest open to the songs of birds in the mornings. About the third week in May they build their nests of twigs, leaves, strips of bark, and fibrous roots, and line them with fine roots and hair. The nests are deeply hollowed, and variously placed on the ground, or in a bush, a low evergreen, a brier patch, &c, but usually not more than four feet above the ground.

They lay five eggs, of a pale-bluish color, thickly spattered with fine dots of reddish-brown. Two broods are successively brought out in a season as a rule, the latter of which is the first to leave us in the autumn.

The parent birds are the last to depart, about the first week in October, yet a resolute few linger in occasional years a week or two later.

Their food consists chiefly of worms, caterpillars, beetles, spiders, and various species of fruit and berries. Their more characteristic haunts are thick, low brush along the fences, which embrace an occasional isolated tree or sapling, brier patches, thickets of alders, sumach, &c, in flying from one to another of which, we catch glimpses of their long, ferruginous tails, spread broadly as they dash nervously out of sight, like culprits just escaped from some merited punishment. The note of caution, and of alarm in the presence of supposed danger, is a short, staccato *chuck*, repeated more or less frequently according to the measure of apprehensions awakened.

They are popularly known in different sections of the country by various names amongst which are; Thrasher, Brown Thrasher, Brown thrush, and the French Mocking Bird, which readily suggest the use of scientific names for all natural objects, selected from dead, and therefore unchangable languages, common to all nations for scientific nomenclature.

Wilson says of this favorite bird: "The Thrasher is a welcome visitant in spring to every lover of rural scenery and rural song. In the months of April and May, when our woods, hedges, orchards, and cherry trees are one profusion of blossom; when every object around conveys the sweet sensations of joy, and Heavens' abundance is, as it were, showering about us, the grateful heart beats in unison with the varying, elevated strains of this bird. We listen to its notes with a kind of devotional ecstasy, as a morning hymn to the great, and most adorable Creator of all. The human being who, amidst such scenes, and in such seasons of rural serenity and delight, can pass them with cold indifference, and even contempt, I sincerely pity, for abject must be that heart, and callous those feelings, and depraved that taste, which neither the charms of nature, nor the melody of innocence, nor the voice of gratitude or devotion can reach."

The Brown Thrush has a very wide distribution within our boundaries, where the conditions are suitable to their habits, but they have their limitations, so that I have visited considerable sections in which they were unrepresented. Mr. Washburn found them common at Mille Lacs in July and August, but rare in the Red river valley a little later. All of my correspondence reports them essentially common and breeding abundantly.

SPECIFIC CHARACTERS.

Fifth quill longest; third, fourth, and sixth, little shorter; second equal to ninth; exposed portion of the bill shorter than the head; outline of lower mandible straight; above, light cinnamon-red; beneath, pale rufous, white with longitudinal streaks of dark-brown, excepting on the chin, throat, middle of belly, and under tail coverts; these spots anteriorly are reddish-brown in their terminal portion; the inner surface of the wing, and the inner edges of the primaries, cinnamon; concealed portions of quills otherwise, dark-brown; median and greater wing coverts, blackish-brown towards the end, followed by white, thus producing two conspicuous bands; tail feathers all rufous, the external ones obscurely tipped with whitish the shafts of the same color as the vanes.

Length, 11.50; wing, 4.15; tail, 5.20; tarsus, 1.30.

Habitat, eastern United States and west to the Rocky Mountains.

THRYOTHORUS LUDOVICIANUS (LATHAM). (718.)

CAROLINA WREN.

I had no expectation of ever seeing this bird in Minnesota, but it is well identified now, although exceedingly rare. My first was obtained in the immediate vicinity as far back as 1868, since when it has been taken in several remote localities, but I have no knowledge of its breeding here. That it does scarcely admits of a doubt, for its observation embraces all the months from May to August, arriving about the 12th of the former month and retiring about the 25th of the latter. Mr. Holsinger reports it as obtained at Dodge Centre, and is in his list of birds of Winona county. Mr. Lewis reports it from Big Stone lake, and several others have been sent to the local taxidermists from different sections for mounting. Yet it must be still held as very rare, although not quite a straggler.

SPECIFIC CHARACTERS]

Exposed portion of the bill shorter than the head. Above reddish-brown, most vivid on the rump; a whitish streak over the eye, bordered above with dark-brown; throat whitish, rest of under parts pale-yellow rusty, darkest toward the under tail coverts, which are conspicuously barred with black. Exposed surface of the wings and tail (including the upper coverts) barred throughout with brown outer edges of the tail feathers and quills showing series of alternating whitish and dusky spots. Legs flesh colored.

Length, 6; wing, 2.60; tail, 2.45.

Habitat, eastern United States, west to the Plains.

THRYOTHORUS BEWICKII (AUDUBON). (719.)**BEWICK'S WREN.**

Arrives in Minnesota generally about the 20th of April, but varies materially with the seasons. It is a very sweet singer, although not equal to the House or the Carolina Wren.

About the 20th of May, but not infrequently somewhat earlier, they build their nests in stumps, knot holes in the trees, hollow logs, etc., of the same materials as the other wrens employ, and lay from five to seven white eggs, speckled with light shades of brown, which are most numerous about the larger end. While this species occasionally visits our shrubbery and berry bushes of our gardeners, it is essentially a denizen of the forest, especially the brushland borders, in the vicinity of streams of water and lakes. Of the identity of this species there is not the shadow of a question, but of its relative representation there is considerable. As far back as 1874, it was not unusual in my experience to bag two or three of them in a few hours general collection, and subsequently in company with Mr. W. L. Tiffany (to whom I have elsewhere referred) spend several hours in extensive comparisons. Few of my correspondents report this wren, and I cannot regard it as quite as common as I believed it would be found. It is, however, a well represented and fairly distributed species in many of the timbered sections. They retire southward by the 10th of September in ordinary seasons.

SPECIFIC CHARACTERS.

Bill shorter than head; tail longer than wings, much graduated; upper parts rufous brown, beneath plumbeous white; a white streak over the eye, the feathers edged above with brown; exposed surface of wings and innermost tail feathers closely barred with dusky; remaining tail feathers mostly black, barred or blotched with white at tips, and on the whole outer web of the exterior feather and under tail coverts.

Length, 5.50; wing, 2.25; tail, 2.50.

Habitat, eastern United States to Plains.

TROGLODYTES AËDON VIEILLOT. (721.)**HOUSE WREN.**

Notwithstanding the tendency of the systematists in the literature of American Ornithology to keep the typical House Wren restricted to more eastern limits, I am able to assure them that it is a regular summer resident of Minnesota. I have so

reported it long since, and am unable to understand the reasons why they persist in thus restricting it. I cheerfully concede that the variety *parkmanii* (if well made, which I seriously question) is the more abundant, but judged by all the shades and measurements upon which it is maintained, the two grade completely into each other oftentimes, in a half dozen individuals comprised in the collections of a morning's basket. Birds, eggs and nests, obtained within a few feet of each other, and within the present city limits, have thrown all pre-conceived distinctions out, not once only, but repeatedly. Still I have thought best to follow the decrees, and record my observations accordingly.

The House Wren is first seen in spring about the 25th of April, but he is generally *heard* first. Having long kept a record of his first appearance, which puts me on the alert for his sudden denouement, he could scarcely escape my notice, for some of them at least never fail to resort to the roof of a dwelling which if not my own, is not beyond the reach of my ear, when the matchless little torrent of melody once breaks its reservoir, and inundates the entire vicinity. I have been favored by its ultimate selection of my own premises, within the boundaries of which to construct its nest, and rear its young. This is begun as early as the 10th of May in favorable seasons. Almost uniformly it is located about the eaves, or gables of the house, or barn, as almost any other situation would expose it to the maraudings of the numberless metropolitan cats, that I am sorry to say are making bird rearing in the trees and shrubbery of the city almost impossible. Of the structure of the nests, or the appearance of the eggs, I have no occasion to speak, so very familiar are they to those who will be likely to ever read this report.

I am sure of their rearing two broods uniformly, and three frequently. Neither variety is found in all parts of the State, but abundant in some. In the larger bodies of timber, and their immediate vicinities, they are common about the dwellings and outhouses. Mr. Washburn found them "abundant at St. Vincent" and other places in the Red river valley. Dr. Hvoslef also reports them in Fillmore county, during the summer. They are reported common in the region about Duluth. Mr. Grant does not include it amongst the birds observed at Vermillion lake in St. Louis county, however.

They do not all leave the State until well on towards October.

SPECIFIC CHARACTERS.

Tail and wings about equal; bill shorter than head; above reddish brown, darker towards the head, brighter on the rump. Feathers everywhere except on head and neck, barred with dusky; obscurely so on the back and still less on the rump. All the tail feathers barred from the base, the contrast more vivid on the exterior ones; beneath pale fulvous-white, tinged with light brownish across the breast; posterior parts rather dark brown, obscurely banded; under tail coverts whitish with dusky bars; an indistinct line over the eye, eyelids, and loreal region, whitish; cheeks brown streaked with whitish.

Length, 4.90; wing, 2.08; tail, 2.

Habitat, eastern United States and west to Minnesota.

TROGLODYTES AEDON PARKMANII (AUDUBON). (721a.)

PARKMAN'S WREN.

Accepting the differential characteristics, this variety is a little the more numerous. At least it is so within my own opportunities to measure fresh subjects. I am very familiar with them as found on the Pacific coast from San Francisco to San Diego, and the colors have apparently about the same relative difference which is found in nearly all species living under like differences of humidity and sunshine. Ours are manifestly darker, and consequently exhibit more rufous on the lower back and rump. As to measures, I must see more specimens in the flesh than I have yet seen to convince me fully of the permanent and definable differences upon which the variety has been instituted. As to the differences in the songs, I can only say that there might be some which I could not retain in my memory long enough to bring them home, and keep them until the next year to compare them with birds here, although in the case of several other species, I have succeeded in doing so because I could write them on a musical staff. My skill never reached the measure of reproducing the song of the House Wren. The dates of their migrations in either spring or fall are the same as those of the other variety. I have seen them still abundant till near the middle of September, and then on the advent of a severe frost, disappear entirely in a single night. I think that like many other species, they fly under such circumstances at night at an elevation above the forests. When passing the electric light mast in our city, 260 feet in height, small birds may be seen in a state of confusion, flitting back and forth before resuming their course. Indeed birds of all sizes including Pelicans, Geese

and Ducks, have done this, but the smaller ones, amongst which are the wrens, occasionally become disabled and have been secured. I have found a few in very open, genial autumns, remaining until after the 15th of October.

Presumptively, these constitute a considerable portion of those reported to me as belonging to the type species.

They are reported as abundant in every wooded section heard from and very common in the cities of St. Paul and Minneapolis as I have myself observed them. Mr. Washburn found them abundant everywhere in the Red river valley, as Dr. Hvoslef also gives them at Lanesboro.

SPECIFIC CHARACTERS.

Similar in size to *T. aëdon*, with a light line over the eye, &c.; the colors however grayer, the upper parts dark brown, the lower grayish white, with little or none of the rufous tinge of particular regions, as seen in the other.

Length, 5; wing 2.10; tail, 2.

Habitat, western North America eastward to Manitoba, Minnesota, &c.

TROGLODYTES HIEMALIS VIEILLOT. (722.)

WINTER WREN.

A regular winter visitant, reaching this latitude where I reside variously from the 20th of December to the middle of January. It is never abundant, but it is not very unfrequently seen in winter. Occasionally obtained in the logging camps during the severest weather, and I have found it within three hours ride of the city on several occasions, one of which was in December, and another in February. It has also been taken by several persons in the southern part of the State, making it presumptive that it extends its migrations much further south. Dr. Hvoslef has seen and obtained it in Fillmore county during successive winters. I believe they all leave by or before the first of March.

SPECIFIC CHARACTERS.

Bill very straight, slender; conical, and shorter than the head. Tail considerably shorter than the wings which reach to its middle. Upper parts reddish brown, becoming brighter to the rump and tail; transverse bars of dusky, and of lighter everywhere except on the head and upper part of the back; scapulars and wing coverts with spots of white; beneath pale reddish-brown, barred on the posterior half of the body with

dusky and whitish, and spotted with white more anteriorly; outer web of primaries similarly spotted with pale brownish-white. An indistinct pale line over the eye.

Length, 4; wing, 1.66; tail, 1.26.

Habitat, eastern North America.

CISTOTHORUS STELLARIS (LICHTENSTEIN.) (724.)

SHORT BILLED MARSH WREN.

The meadows and willow swamps to which the Marsh Wrens at once resort upon their arrival, preclude the probabilities of knowing just when that takes place, but from a comparison of observations of several local observers it is not much removed from the first of May. They are so exceedingly shy, and hide in the reeds and grass so effectually that they are apparently rare, yet from personal observations I cannot quite think they are. When I have made special search for them I have generally been unsuccessful, either from too great haste, or from putting myself too directly in their way, but when entirely alone and I have waited in complete ambush for some time, I have generally been rewarded with the sight of several, and the pleasure of obtaining one or two. I have found several nests quite near each other, with eggs in by the 25th of May. They are constructed in such a manner as to look like a loose ball of grass hanging in a tussock of coarser grass or reeds, about a foot above the ground. The whole is usually well within a field of reeds or wild rice, where few persons would be likely to go except to retrieve a duck, unless specially in search of the nest. By the weaving of fine grasses ingeniously in with the coarse, the exterior of the nest is compacted to imperviousness, while the inner nest is composed of fine grass, and lined with soft down from the bark and blossoms of vegetables. The eggs, variously from six to ten, are pure white, and exceedingly thin-shelled. The entrance to the nest is very small and in some scarcely appreciable. They are widely distributed.

Prof. Herrick found it breeding at Lake Shatek "in considerable numbers."

Mr. Washburn, in his report to me of his explorations in the Red river valley, says of the Short-billed Marsh Wren, it is "common in the marshes throughout the valley; breeding in colonies in the tall grass. A most interesting bird, as bold, saucy and inquisitive as his cousin, the Long-billed Marsh Wren. In a large marsh near Ada, I found a colony of these

wrens, which by my presence was thrown into most excitable activity. They are at a disadvantage when on the wing, these appendages seeming scarcely able to support their obese bodies, for they fly as though weighted like a bee returning to a hive heavily laden. Instinctively they fly toward the friendly support of some tall weed where, as if feeling more secure on their feet than in the air, they resume their antics, hanging their heads downward, twirling their tails, jumping from one reed to another, and each bird apparently communicating its restlessness to its neighbor until the whole colony is in a state of ferment. They do not alight gracefully like most birds, but seem to tumble into the weeds." This would seem to indicate that the Short-billed Marsh Wrens are more abundant in the Red river country than almost anywhere else in our special field of investigations.

SPECIFIC CHARACTERS.

Bill very short, scarcely half the head; wings and tail about equal; hinder part of the crown, scapular, and interscapular region of the back and rump, almost black, streaked with white; tail dusky, the feathers barred throughout with brown; upper parts, with the exceptions mentioned, reddish brown.

Length, 4.50; wing, 1.75; tail, 1.75.

Habitat, eastern United States, west to the Plains.

CISTOTHORUS PALUSTRIS (WILSON). (725.)

LONG-BILLED MARSH WREN.

From every section of the State not personally visited, I have the uniform testimony of the abundance of this species. The migrations are indeterminately synchronous with the Short-bills, and their haunts and breeding places the same in both species, except that the nests of this is found nearer the edges of the marsh. If anything, it is also a little the larger of the two, and is suspended on the coarse, strong reeds, fairly above all dangers from high waters overflowing the banks of sluggish streams that meander the swamps and marshes. In the exterior construction, rushes and coarse grass are closely interwoven, and the interstices neatly filled with mud, giving it a very artistic, compact appearance, in size nearly six inches in diameter. About one-third below the top a small hole for entrance is left, overhung by a projection or canopy to exclude the rain. Internally the nest is lined with fine grass, feathers and vegetable down. They rear two broods in a season, forming a new nest for each brood. From six to ten eggs is about

the range of numbers, and they are somewhat variable in the intensity of the color between light ash and brown, being so thickly blotched as to give it those colors, although the general hue without the blotching would be white. Their song is a poor representative of bird-melody, consisting of little more than an indistinct rasping, or grating sounds, not unlike the sound of a sliver on a fence rail vibrating in the wind. They feed principally upon tiny mollusks, and aquatic insects of various kinds.

It is a very difficult matter to find just the time when they habitually return to the South, but I think that as a general thing it is by the 1st to the 5th of September, with occasional exceptions in either direction.

My collector Mr. F. L. Washburn, who visited the valley of the Red river in the interests of the survey, found this species like the other, abundant, breeding in large colonies. He calls it "a noisy chatterer, pre-eminently inquisitive; and as nimble as a mouse. Standing among reeds, up to my waist in water, and watching the movements of a flock of ducks several yards in front of me, the noise of my movements attracted about me countless numbers of these birds. Chattering angrily at my intrusion, they came toward me from every side, scrambling from reed to reed, head downward and peering at me with the brightest of black eyes, seeming to demand of me by what right I had trespassed on the lawful territory of the Lilliputians. Its song is monotonous and squeaky."

Mr. J. M. Holzinger, Curator of the Normal School Museum, at Winona, says it is "abundant around Lake Winona." That it is generally distributed over the entire State there can be no doubt.

SPECIFIC CHARACTERS.

Bill about as long as head; tail and wing nearly equal. Upper parts dull reddish-brown, except on the crown, interscapular region, outer surface of tertials, and tail feathers, which are almost black; the first with a median patch like the ground color, the second with short streaks of white extending round on the sides of the neck; the third indented with brown; the fourth barred with whitish, decreasing in amount from the outer feather, which is marked from the base to the fifth, where it is confined to the tips; the two middle feathers like the back, and barred throughout with dusky. Beneath rather pure white, the sides and under tail coverts of a lighter shade of brown than the back; a white streak over the eye

Length, 5.50; wing, 2.08; tail, 2.

Habitat, United States, abundant in reedy swamps.

Family **CERTHIIDÆ**.**CERTHIA FAMILIARIS AMERICANA** (BONAPARTE). (726.)

BROWN CREEPER.

The Brown Creeper is a nervous, restless little fellow, who comes so near being a permanent resident, that he only goes barely far enough away in winter to be amongst us again very early in the spring, an occasional individual lingering through that inclement and vigorous season. Recorded observations here give its arrivals in spring, between the first and tenth of April, and the departures between the first and tenth of December, but as already intimated, there are wide exceptions from these dates and in the more southern counties it has been observed early in March.

Its habits have been so beautifully described by Wilson, that I repeat some passages referring to them. When describing its proclivity to follow the Hairy Woodpecker, nuthatches, and Chickadee through the woods, "gleaning up those insects which their more powerful bills had alarmed and exposed," he says: "As the party advances from tree to tree our little gleaner seems to observe a good deal of regularity in his proceedings; for I have almost always observed that he alights on the body near the root of the tree, and directs his course with great nimbleness upward to the higher branches, sometimes spirally, often in a direct line, moving rapidly and uniformly along with his tail bent to the tree, and not in the hopping manner of the Woodpecker, whom he far surpasses in dexterity of climbing, running along the lower side of the horizontal branches with surprising ease. If any person be near when he alights, he is sure to take the opposite side of the tree, moving around as he moves, so as to prevent him from getting more than a transient glimpse of him.

The best method for outwitting him, if you are alone, is, as soon as he alights and disappears behind the trunk, take your stand behind an adjoining one, and keep a sharp lookout, twenty or thirty feet up the body of the tree he is upon, for he generally mounts very regularly to a considerable height, examining the whole way as he advances. In a minute or two, hearing all still, he will make his appearance on one side or the other of the tree and give you an opportunity of observing him."

The food consists chiefly of coleopterous insects, with an occasional seed intermixed. He builds his nest much after the manner of the wrens, in any available place like a hollow limb or trunk of a tree—in the hollow of a tall stub—or beneath a depending piece of bark on the side of a dead tree.

Five or six roseate-white eggs, delicately marked with brown, are laid about the 20th of May.

This species is rather common a short time during migration, and a few remain all summer, but they mainly go beyond the limits of our territory to breed. In a very carefully prepared list of birds observed at Vermilion lake by U. S. Grant, who accompanied Prof. Winchell in his geological explorations of St. Louis county, he saw but one individual, but at a season which justifies the presumption of its breeding in that region. In most wooded sections an occasional individual has been seen at a time when it is entirely reasonable to suppose them summer residents.

Mr. Washburn believes it "rare in Otter Tail county." Its habits are such that they may easily be overlooked, and I still cherish the opinion that it has not yet received its proper credit.

SPECIFIC CHARACTERS.

Bill about length of head. Above dark-brown with a slight rufous shade, each feather streaked centrally but not abruptly with whitish; rump rusty; beneath almost silky white; under tail coverts with a faint rusty tinge; a white streak over the eye; ear coverts streaked with whitish. Tail feathers brown centrally, the edges pale yellowish-brown; wings with a transverse bar of pale reddish-white across both webs.

Length, 5.50; wing, 2.60; tail, 2.90.

Habitat, North America generally.

Family PARIDÆ.

SITTA CAROLINENSIS LATHAM. (727.)

WHITE-BREASTED NUTHATCH.

The White-bellied Nuthatch is a permanent resident of Minnesota, breeding, frequently, within the limits of the city as well as in forests remote from dwellings. The nests are usually found in cavities in trees much after the manner of woodpeckers, and consist of fine grasses, feathers and hairs which are lightly disposed in the bottom of the cavity selected. They almost uniformly lay six eggs which are white with a faint roseate tint, spattered with dots and splashes of pale reddish-brown.

After a long period of crisping cold days has softened into one less rigorous "Nuttie," and his cousin will put in a joint appearance. Then his monotonous *cha-cha-cha-cha* will sound as cheery as more varied notes in the sunny season of song would, but his visits are not frequent in winter in this latitude; nor are they prolonged, for when he has dropped, head downwards, onto the trunk of the leafless tree, and begun his search for larvae and insects, it is not long before every considerable portion of the tree has been searched, and he has bounded away to another. It rarely lights on the ground, and then it remains but a few moments at most.

In proportion to its size, it is capable of vieing with the woodpeckers in the use of its bill to excavate a hole in a tree for its nest, which is sometimes sunken 14 to 18 inches below the point of entrance. It lays 5 eggs usually, of a pearly-white color, touched sparingly with dark-greenish, or dirty yellow. The young are brought out early in June. I have not met with more than one brood to a pair in the same season, and from the uniformity of the development of the young in the early autumn, I believe it to be their local habit to rear but the one, whatever may have been observed otherwheres. Under what circumstances they brave the severity of the winters in Minnesota can only be conjectured, but, presumably, in holes of trees in the swamps where evergreens afford protection from the winds.

For the species, they may be regarded as abundant in nearly all wooded portions of the State, and much more frequently seen in spring and fall than during either summer or winter. Mr. Grant found them in St. Louis county during the summer, Dr. Hvoslef at Lanesboro in March, Kennicott at Lake of the Woods on May 31st, and Mr. Washburn everywhere in the Red river region in both summer and autumn in abundance.

SPECIFIC CHARACTERS.

Above, ashy-blue; top of head and neck black. Underparts and sides of head to a short distance above the eye, white. Under tail coverts and tibial feathers, brown; concealed primaries, white. Bill subulate, acutely pointed, compressed, long as head; tarsi stout.

Length, 6; wing, 3.75; tail, 0.90.

Habitat, eastern United States to the Rocky Mountains.

SITTA CANADENSIS (L.). (728.)**RED-BREASTED NUTHATCH.**

This little cousin of the White-bellied Nuthatch, in no way a whit behind his bigger relative in interest, has its history obscured by the shadow of the other to such an extent, that his record begins and ends about where Audubon began and ended it.

While quite similar in its habits to the other species, its note is so much higher-keyed, and more rapidly repeated, that there is little danger of the careful observer being misled as to its identity. It feeds precisely like the other in every particular, beginning upon the trunk or a larger branch, it moves forwards or backwards with equal facility, and uniformly in a spiral direction. If on the trunk, the prevalent attitude is with the head downward, in which attitude it will frequently pause for a moment, and with the bill at right angles to its perch, listen to other notes and sounds, and then resume its search for insects and larvæ, constantly repeating its note resembling *'each, each, each each,'* rapidly repeated until it opens its wings for a short flight to another tree already preoccupied possibly by the large species, the Hairy Woodpecker, and the Chickadee. In this manner the party proceeds "regularly from tree to tree through the woods like a corps of pioneers." Mr. Grant reports them as fairly represented about Vermilion lake and vicinity during the summers he was there.

Messrs. Lewis, Treganowan and Washburn, each report this species fairly represented in all the timbered sections visited by them in the northwestern portions, and the latter mentions them in the following words: "Young and old birds observed at St. Vincent, common, and apparently finding there its southern limit. I did not find it south of that place. One individual, shot at St. Vincent Aug. 26th, measured 4.25; 2.50; 1.50; and another, 4.25; 2.75; 1.50."

There is no doubt that the Red-breasted Nuthatch breeds extensively in the northern portion of Minnesota, but I have never discovered their nests in the others. Mr. Lewis, (who gave the habits of this species as much if not more attention than any other observer whose kindly aid I have received,) says: "The nest is in an excavation in a stump, or a stub, from three to four feet from the ground, and occasionally somewhat higher, but never as elevated as that of the White-breasted. It consists of moss, bark, hair and down, rather

loosely disposed, but with considerable claims to nesting ingenuity. There are four or five pearly-white eggs, with occasional touches of dingy-greenish at the larger end."

SPECIFIC CHARACTERS.

Bill pointed, subulate, compressed, stout, about as long as head; culmen and commissure nearly straight; nostrils covered by a tuft of bristles directed forwards; tarsi stout, tail very short, broad and nearly even; wings reaching nearly to the end of the tail. Above ashy blue; top of head black; a white line above, and a black one through the eye; chin, white rest of under parts brownish rusty.

Length, 4.50; wing, 2.65; tail, 0.85.

Habitat, North America at large.

PARUS BICOLOR (L.). (731.)

TUFTED TITMOUSE.

This is rather a rare species in Minnesota. Only occasionally obtained, and then only in the extreme southern counties, but at such times as they are presumably breeding. I place them in my records on the assurances of Mr. Lewis who obtained the skin and four eggs from a lad in Nobles county.

I knew the bird very well in his established haunts, and have seen persons who have collected them occasionally in the vicinity of Cedar Falls, Iowa.

SPECIFIC CHARACTERS.

Above ashy black. A frontal band of dark sooty brown. Bill, black; feet lead color. Beneath dull whitish; sides brownish chestnut, of more or less intensity.

Length, 6.25; wing, 3.20

Habitat, eastern United States to the Plains.

PARUS ATRICAPILLUS (L.). (735.)

CHICKADEE.

The Chickadee is a common, permanent resident of Minnesota, scarcely any portion of which yet visited, where there is timber found, which does not have a fair representation of them. But they are met with more frequently in the autumn and early spring when they come out from the denser woodlands and seek the cultivated sections, where the sun has made its food more attainable. At all times during winter, however

severe the weather, it may be seen peering about the freshly fallen pines in the vicinity of the lumber camps and in the evergreen thickets of the same regions. Noisy, restless, cheery, he is soon a favorite of the woodsman.

The earliest nests I have met were built about the last week in April and were in holes in trees like those of the nuthatches and woodpeckers. It is somewhat enlarged as it extends down into the decayed tree or stump for eight or ten inches and is lined with soft flexible mosses and animal hairs of different kinds. Sometimes it appropriates a few birds' feathers and always weaves them nicely into a smooth warm receptacle for from six to ten nearly pure white eggs with a slightly reddish tint, and spotted thickly at the larger end with reddish brown. These are nearly spherical and measure about .62x.52. They generally have two broods in the season.

The most noteworthy habit I have recognized in this species which has so many times been omitted in descriptions of it is its almost invariable association with the nuthatches, which if not exactly with it are not far away. Next to this their proclivity to approach so near to one when seated in the deep woods. Its notes are too familiar to need description, formulating so remarkably the words *chweek-a-dee-dee-dee*, *chweek-a-dee-dee-dee* in a clear, distinct and really sweet tone. Its flight is not unlike the woodpecker from tree to tree in its search for food, and like that species is undulating, and gliding when higher in the air.

As I have been often called upon for my opinion of its habits of destroying the buds of fruit trees in blossom, I am cheerful to say that I believe no buds ever suffer which have not first been made worthless by containing a grub which is destined to destroy it. An examination of these buds afterward uniformly reveals a burrow which his faithful bill has just emptied. This to my mind fully substantiates his claim to friendship and protection. He makes no mistakes which sacrifice the perfect buds. Endowed also in common with birds in general as he is with eyes so constructed as to permit their microscopic as well as telescopic use, he is prepared to examine with unerring certainty not only the buds but the bark where eggs as well as the hatched vermin are hidden.

“The eggs of the moth of the destructive leaf-rolling caterpillar—the canker worm, the apple-tree moth, and others of these well-known plagues are greedily eaten by it, and this in the inclement winter when most of our other birds have aban-

done us for a more genial climate. In the summer time the Chick-a-dee's labors are more easily noticed; and as he raises a large brood of young, the female laying six or eight eggs as a litter, he is very busy through the whole day in capturing vast quantities of caterpillars, flies and grubs. It has been calculated that a single pair of these birds destroy, on the average, not less than five hundred of these pests daily, a labor which could hardly be surpassed by a man, even if he gave his whole time to the task." The author just quoted—E. A. Samuels in his *Birds of New England*, p. 185—says: "In some observations of this and other birds of Paris, it was found that the Titmouse destroys at the lowest computation, over two hundred thousand eggs of noxious insects annually. Does not this appeal to the good sense of the farmer to protect the *whole class* that should not be forgotten?"

SPECIFIC CHARACTERS.

Second quill as long as the secondaries; tail very slightly rounded, lateral feathers about ten one hundredths of an inch shorter than the middle ones; back brownish ashy; top of head and throat, black, sides of head between them white; beneath whitish; brownish-white on the sides; outer tail feathers, some of the primaries and secondaries conspicuously margined with white.

Length, 5; wing, 2.50; tail, 2.50.

Habitat, eastern North America.

PARUS ATRICAPILLUS SEPTENTRIONALIS (HARRIS). (735a.)

LONG TAILED CHICKADEE.

For several years after my local observation of the birds began, I found considerable variation in the length of the specimens of this species which came under my observation, without believing that I had "septentrionalis" occasionally, but it proved to be that beyond a question, and I reported it in a list published in 1874 as "rare" but it has been seen since that time a good many times.

Its habits do not differ from the Black-capped except in breeding time, when the "soft, long-drawn note" of Coues is decidedly characteristic. However, the measurements grade into those of the other variety so often as to leave a doubt which we have, except in the case of those of completest characteristics.

SPECIFIC CHARACTERS.

Head above and below black, separated by white on the sides of the head; back brownish-ash; beneath white, tinged with pale brownish-white on the sides; outer tail feathers, primaries and secondaries broadly edged with white, involving nearly the whole outer web of the outer tail feathers; tail much graduated; the outer feather about thirty hundredths of an inch shorter than the middle; second quill about as long as the secondaries.

Length, about 5.50; wing, 2.70; tail, about 3 inches.

Family SYLVIIDÆ.

REGULUS SATRAPA LICHTENSTEIN. (748.)

GOLDEN-CROWNED KINGLET.

This species appears simultaneously with the other Kinglet and differs from it very little in its habits. Not quite as numerous as the other, nor quite as active perhaps, it is not as easily obtained. It rarely sings in migration, and then in a very soft, musing tone which is very monotonous. The nearest description of the note which I can give is expressed in a single word, *t'eeet*, and a single strain consists of about a half-dozen repetitions. Amid the grand chorus of bird-song it is easy to fail to detect it, but when heard is decidedly pleasing. It leaves for the farther north a little earlier than the Ruby-crowned does. I know nothing of its breeding habits within my province, but think it not improbable that its nests may yet be found in the northeastern portions of the State. It is believed to be a more northern bird than its cousin.

Mr. Herrick found it present still in Southern Minnesota as late as October in the fall migration.

Their patient industry in gathering their tiny insect food, monotonously repeating their "t'eeet, t'eeet, t'eeet, t'eeet, t'eeet, t'eeet," softly and rather rapidly, interrupted by a frequent poise upon their fluttering wings while feeding upon some dainty forms at the very extremity of the tremulous leaves is a marvellous exhibition of contentment with their lot. They have a habit of exposing their concealed, golden feathers of the crown, by suddenly opening and shutting the overlapping feathers on the parts adjoining them, by which they make good their claims to royalty, and from which they have obtained the common name of Golden-crowned Kinglets. Most of them have passed further north by the end of the second

week in April, some of them to breed in the rough, hill country in the vicinity of Lake Superior, where Mr. Lewis found quite a number of them in June and July, but failed to secure any nests of eggs. But they mostly go much beyond us to spend their summers in an alien land.

SPECIFIC CHARACTERS.

Above olive green, brightest on the outer edges of the wing; tail feathers tinged with brownish-gray towards the head; forehead, a line over the eye, and a space beneath it, white. Exterior of the crown before and laterally, black, embracing a central patch of orange red, encircled by gamboge yellow. A dusky space round the eye. Wing coverts with two yellowish white bands, the posterior covering a similar band on the quills, succeeded by a broad dusky one; under parts dull whitish.

Length, under 4; wing, 2.25; tail, 1.80.

Habitat, North America generally.

REGULUS CALENDULA (L.). (749.)

RUBY-CROWNED KINGLET.

But a little larger than the Hummingbird, this remarkable, vigorous species reaches us the first week in April in parties of twenty to forty perhaps, a minority of which are sometimes found to be Golden-crowns. They follow the wooded banks of the Mississippi and other large streams of water running north and south, "working" each tree over successively if undisturbed, and one at a time, flitting to the next northward. Active to the highest tension, and vigilant in their exhaustive search for the eggs and larvæ of insects which are only found in the crevices of the bark of the trees, they are exceedingly difficult to follow. I have hoped that it might be my good fortune to hear them sing, but beyond a soft twitter, or "whistle and work" song, I have failed altogether.

Dr. Coues says: "One of the most remarkable things about the Ruby-crown is its extraordinary power of song. It is really surprising that such a tiny creature should be capable of the strong and sustained notes it utters when in full song. The lower larynx, the sound producing organ, is not much bigger than a good sized pin's head, and the muscles that move it are almost microscopic shreds of flesh. If the strength of the human voice were in the same proportion to the size of the larynx, we could converse with ease at a distance of a mile or more. The Kinglets' vocalization defies description;

we can only speak in general terms of the power, purity and volume of the notes, their faultless modulation and long continuance."

That this species breeds about the head waters of the Mississippi and the head of Lake Superior there can be little doubt, as it may be seen there as late as July according to observations of parties visiting those regions who claim to know the bird well.

The coloration of the sexes is essentially alike, neither having the concealed patch of scarlet feathers on the crown until the second year. It is common in migration and no species visiting the State has contributed greater numbers to the gun of the collector for scientific purposes, through mistaken identity, yet each individual which escapes is too busy to recognize the disaster further than to get away for the moment from the noise of the gun that has slain his equally industrious comrade.

Their autumnal migration brings them to us about the last week in September, when they are somewhat promiscuously mixed with *Satrapa* and several other species, remaining sometimes until the latter part of October.

SPECIFIC CHARACTERS.

Above dark greenish-olive, passing into bright olive-green on the rump and outer edges of the wings and tail; crown with a large concealed patch of scarlet feathers which are white at the base; the under parts are grayish-white tinged with pale olive yellow, especially behind; a ring round the eye, two bands on the wing coverts, and the exterior of the inner tertials, white.

Length, 4.50; wing, 2.35; tail, 1.85.

Habitat, North America.

POLIOPTILA CERULEA (L.). (751.)

BLUE-GRAY GNATCATCHER.

Long believed to be a summer resident, no bird has been more diligently sought after here than this. My friend W. L. Tiffany, a collector with large experience at Cape May, and otherwheres, called my attention to the general history of this species in 1874. In all the many most delightful explorations about the vicinity of Minneapolis which we had together we both kept it constantly in mind, and not in vain, although at that time unsuccessful, for since then several have been obtained by different collectors. Dr. Coues says in his 'Birds of

the Colorado Valley," that it does not visit this State, in which at this date, he is almost but not quite right. My collections embrace the months of May, June and July.

At what precise time it has been observed to arrive in Minnesota I cannot state except that two have been obtained before the 20th of May. If any nests have been collected, the fact has not been communicated to me up to this time. It is a species with which I became quite familiar in California when collecting in the southern portion of that state. The *P. melanura* or Black-tail was a more common species, resembling it so much in appearance and manners that with difficulty I learned to separate them without shooting them first, unless near enough to distinguish the dark tail and black crown of the latter.

Mr. R. S. Williams of this city obtained the first specimen of the Blue-gray Gnatcatcher on the 19th of May, 1877. It was a male. Quite remarkably this bird was also first observed in in Massachusetts, November, 1876. (Bulletin Nuttall Club, Vol. 3, No. 1, p. 46).

SPECIFIC CHARACTERS.

Above grayish-blue, gradually becoming bright blue on the crown; a narrow frontal band of black extending backward over the eye; under parts and lores bluish-white, tinged with lead color on the sides; first and second tail feathers white except at the extreme base which is black, the color extending obliquely forward on the inner web; third and fourth black with white tips, very slight on the latter; fifth and sixth entirely black; upper tail coverts blackish-plumbeous; quills edged externally with pale bluish-gray, which is much broader, and nearly white on the tertials.

Length, 4.80; wing, 2.15; tail, 2.25.

Habitat, middle and southern portions of the United States.

Family TURDIDÆ.

TURDUS MUSTELINUS GMELIN. (755.)

WOOD THRUSH.

This peerless songster arrives about the 5th to the 10th of May, the latest record I have of my own, or any of my correspondents for many years being May 12th. The males arrive a little in advance of the females, but only a little, for they are silent until the arrival of the others, and not more than three or four days after the earliest are known to have come, their songs begin to be heard.

The first noticed are either single or in small, loose parties, but so silent and unobtrusive, as to elude all but practiced observation. Its favorite haunts, so well known to be the low, thickly shaded borders of the forest, along the banks of running waters, overhung with wild vines, are now exchanged for those less secluded places, seeking its food in the open fields, or wherever it is most plentiful, which is quite near barns, sheds, and dwellings in many instances. In bright days this range is likely to be confined to the early morning, but when the sky is clouded, he will often remain about the garden all day, particularly when a little rainy also. My residence is very centrally located, and beside an arboreal lawn of my own, I have neighbors who have them also on either side of me, in any and all of which the Wood Thrush may often be seen at this season, under the conditions mentioned

A lady friend* of rare culture, who is a critical observer of the habits of birds, has a rear yard, or garden, only twenty-four by sixty feet, surrounded by a high fence, along which are planted bushes and shrubs, and in the centre, one or two fruit trees.

The buildings are built in solid blocks from street to street, with no lawns, but she counts upon the visits of many species of the birds regularly in their migrations, and this one in particular in which she is seldom dissatisfied. Being perfectly familiar with the habits of all the common thrushes, and employing a field-glass at such short range, she could not confound the species.

Immediately upon the arrival of the closely following females unless the weather is exceptionally bad, the males will be heard early in the morning warbling their liquid, bell-toned notes from the top-most limb of a tree, surrounded by others inferior in height, and all embraced in a compact thicket in the woodlands.

* Mrs. Sarah A. Hubbard author of the most charming Monograph on "The Humming Birds of the two Americas" published a few years since in Harper's Monthly. In one of her warbling letters, written May 5th. 1883, she says, when speaking of birds;—"And they have come, * * * Day before yesterday, a Wood Thrush, a Hermit Thrush, and a Swainson's Thrush, spent the morning with me. I sit in a window looking right down upon them, and with my opera-glass it is almost as good as having them in my hand. The Wood Thrush, with his tawny head and erect crest, flapping its wings and keeping a fierce, truculent demeanor; The Hermit Thrush with olive head and back, and tawny tail; and the Swainson's with pure olive on the upper parts, were easily distinguished at a glance. The Hermit came first, April 4th, and has been here ever since, sometimes visiting me in companies of three and four, but more often in solitary state.

I notice that when a bird comes, it is apt to stay all day, owing I think to the quiet seclusion of the place, with its high walls and abundant vines and shrubbery."

About the 20th of May they begin to build their nests in a rather low bush, in their secluded haunts in deeply shaded hollows in the woodlands near either a lake, or stream of running water. I have found them occupying the northern slope of dry, brushy hillsides, yet this is exceptional. It is constructed of weeds, grass, leaves, &c, compactly, and somewhat artistically arranged outwardly with mud and grass, and lined with moss, fibrous roots and flexible, soft, fine grass. The eggs are usually four in number of a uniform light blue color, without spots and have a faint shade of green. They are credited with but one brood in New England, but they do better in Minnesota, bringing out two as a rule. Their food varies somewhat with the season, but embraces various kinds of berries, beetles, spiders, caterpillars, and a few varieties of lichens. They retire southward about the middle of September.

Less observed than most birds of striking song because of its secluded breeding habits, it is nevertheless a common summer resident in its wonted localities throughout the entire State yet explored.

SPECIFIC CHARACTERS.

Above clear cinnamon brown, on the top of the head becoming more rufous, on the rump and tail, olivaceous. Under parts clear white, sometimes tinged with buff on the breast or anteriorly, and thickly marked beneath, except on the chin and throat, and about the vent and tail coverts, with subtriangular, sharply defined spots of blackish. Sides of head dark brown, streaked with white, and there is also a maxillary series of streaks on each side of the throat, the central portion of which sometimes has indications of small spots.

Length, 8.10; wing, 4.25; tail, 3.05; tarsus, 1.26.

Habitat, eastern United States to Plains.

TURDUS FUSCESCENS STEPHENS. (756.)

WILSON'S THRUSH.

Wilson's Thrush makes its appearance in the State about the beginning of the second week in May; the males preceding the females only a few days. Pairing follows in due time, but not until "many a knight has drawn his sword" and some fierce battles have been fought in the presence of the most indifferent of dulcinas.

It builds its nest about the last week in May, occasionally somewhat earlier. In speaking of this charming thrush I will not deny myself the privilege of quoting from the inimitable

pen of that master of words in the expression of science or sentiment, Dr. Elliott Coues in his *Birds of the Colorado Valley*, page 41: "The heavy growth of timber that fringes the streams including many nooks and dells, and broken ravines overgrown with thick shrubbery from out the masses of which the tall trees tower as if stretching forth their strong arms in kindly caressing of the humbler and weaker vegetation, their offspring.

"In such safe retreats, where the sombre shade is brightened here and there with stray beams of sunlight, in the warmth of which myriads of insects bathe their wings and flutter away their little span of life, humming a quaint refrain to the gurgle of the rivulet, the Veery meets its mate—the song rises—the wood is won—the home is made. Should we force our unwelcome presence upon the bird who is brooding her newly-found treasures with the tenderest solicitude, she will nestle closer still, in hope of our passing by, till we might almost touch her, when, without a word of remonstrance or reproach, she takes a little flight, and settles a few yards away in silent appeal. If the time, the place, the scene, suffice not for our forbearance, with what poor words of hers may we then be moved?"

Whoever would try it after seeking such a spot as the above picture points out, as true to science as it is to sentiment, will find the nest either resting directly upon the ground amongst leaves, or a little above it. There is no remarkable exhibition of skill manifested in its structure, but on the other hand, it looks rather clumsy and bulky, yet it is fairly well finished within. It consists outwardly of leaves, and bark, weeds and grasses within, with no special lining. The cavity is slight compared with the excavation of some of the other Thrushes. The eggs are greenish-blue without any markings usually, and four to five in number. Occasionally obsolete specks may be detected on the larger end. The song of this interesting species is quite remarkable, the notes being metallic and bell-like, very distinct and resonant. The quivering *t'rill*, *t'rill*, *t'rill*, *t'rill* graduated from a high key downward, increasing in volume with each *t'rill* in the four repetitions, giving it a wild and delicious sadness, impossible to describe, but always felt when heard. The song is not unfrequently prolonged until between eleven and twelve o'clock in the evenings of warm, cloudy weather. Often when delayed, I have been riding through the dark woodlands bordering the lake, at that late

hour, when several in different directions could be heard in successive responses, and more weird melody I never heard. Sometimes seemingly almost over my head, and sometimes so far away as to seem to come from another world.

Nothing in bird life ever so appealed to what hovers upon the borderland of superstition in my own experience. The Great Horned Owl's melancholic hootings awaken other sensations, perhaps a little cowardice withal, for they suggest memories of fallen Babylon and spirits lost, while these delightful, though mystic melodies seemed more like the vesper bells of invisible wood nymphs summoning one to prayer."

The Veery Bird, as this is often called, is a fairly common species here, and is apparently widely distributed over the State. My correspondents have uniformly given it as common in their locality.

Mr. Washburn found it so in the valley of the Red river, and and at Mille Lacs, as did Dr. Hvoslef in southern Minnesota. Mr. Grant makes no mention of this, or any other of the Thrushes in his list of birds observed in northern Minnesota.

NOTE. Few, if any other of the Thrushes, have elicited more popular interest than this so far as my own observation extends. One of my early friends, who was a close observer of nature, used to tell me much about a bird whose song had made a deep impression on his memory in his boyhood while residing in Sherburne, Chenango Co., N. Y., which he had not heard sing in forty years. While visiting me at Minneapolis, we were riding near Lake Calhoun, when upon hearing this bird he exclaimed: "There is the *Wilderness Bird* again!" He had never known it but by its song, but had heard it called by that local name. As far back as 1865, Colonel J. B. Clough (afterwards assistant engineer who located much of the Northern Pacific railroad) used to describe, or try to describe, the song of a bird familiar to him (by its song only) in Massachusetts, desiring me to find it here, as he had heard it himself in this locality. Descriptions by their songs is a very uncertain method of extending the knowledge of ornithology. But I found several years later that this was the bird, to his own and my delight.

SPECIFIC CHARACTERS.

Third quill longest; fourth a little shorter; second nearly a quarter of an inch longer than fifth. Above and on side of head and neck, nearly uniform light reddish-brown, with a faint tendency to orange on the crown and tail. Beneath white; forepart of throat and breast (paler on chin) tinged pale brownish yellow; sides of throat and forepart of breast marked with small triangular spots of light brownish; a few obsolete blotches

on sides of breast pale olivaceous; sides of body tinged same; tibiæ white; lower mandible brownish at tip; lores ashy.

Length, 7.50; wing, 4.25; tail, 3.20; tarsus, 1.20.

Habitat, eastern United States to Plains.

TURDUS ALICIE (BAIRD). (757.)

GRAY-CHEEKED THRUSH.

This comparatively new species, or newly individualized species, is occasionally met with in migration, and may possibly yet be proved to be a summer resident in some localities.* It arrives about the 10th of May and apparently disappears by the 20th, at least that is the latest record I have of one obtained almost within the city limits during May of the present year. It may be much more common than my opportunities for knowing indicate, for it is an exceedingly shy bird, confining itself while here to thickets, along the borders of groves, and forests of hardwood. I have never been able to assure myself that I have heard its song, notwithstanding its unmistakable character as given by modern writers. The downwardness of the scale of its song as described by those who are familiar with the species in New England as contrasted with that of *T. Palasi*, has met my ear on several occasions without being confident of its source. Its observation at so many proximate places in adjoining states seems to justify the expectation that the species will yet be found to be fairly represented in portions of Minnesota. I have had only a single individual in my hands by my own gun yet.

SPECIFIC CHARACTERS.

Third quill longest; fourth nearly equal; second slightly longer than fifth. Above nearly pure dark olive-green; sides of head, ashy-gray; chin, throat, under parts and ring around eye, white, purest behind. Sides of throat and across the breast with arrow-shaped spots of dark plumbeous-brown; sides of body and axillaries, dull grayish-olivaceous; tibiæ, plumbeous; legs brown.

Length, 8; wing, 4.20; tail, 3.20; tarsus, 1.15.

Habitat, eastern North America west to the Plains.

*Mr. T. S. Roberts, Mr. J. Angstrum, and a promising young naturalist by the name of H. McCoy, of Merriam Park, have each given me verbal reports of having collected this species in this vicinity.

TURDUS USTULATUS SWAINSONII (CABANIS). (758a.)

OLIVE-BACKED THRUSH.

The uniform shade of the upper parts, somewhat emphasized on the rump and tail, distinguishes this species amongst the Thrushes.

Arriving here late in April, or in the early part of May, it is abundant for a short time, but moves northward then, only a few comparatively remaining to breed, and those principally in the northern counties of the State. Its favorite places for nesting here seem to be the edges of heavy timbered tracts, which are bordered with brushland, or thickets of oaks. They build their nests about the 20th to the 25th of May, on a horizontal limb, which is usually five to seven feet from the ground. It is very compactly built of such material as the locality affords including strips of bark, leaves, lichens, moss, &c. The eggs, usually four or five in number, are light greenish-blue, speckled with several shades of reddish-brown.

The song of this species does honor to its melodious group, having about as much variety as those of the other thrushes, and more nearly resembles that of the Hermit. For many years Swainson's Thrush was seldom seen except in migration, but since the country has been more extensively settled, and fires have ceased to destroy the brushlands and timber, it has been increasing in the numbers of individuals that remain during the summer. I have seldom found it feeding on the ground after the manner of most of the same genus but on the trees and brush, and unlike any of them, dashing out after insects essentially like a warbler or a flycatcher.

One specimen of this species obtained in July was building a new nest, which must be exceptional, for although rearing two broods they appear usually to build but one. Perhaps it had been molested. The autumnal migration takes place simultaneously with that of most of the other thrushes, except the Robin.

As to their distribution throughout the State during migration, there seems to be great uniformity where the conditions for its food are present. Lists for May are sent me annually from nearly every characteristic section of the survey, and a good number for the entire summer. They wander to considerable distance from the forests for food, but only in the thickety, brushland localities.

Dr. Hvoslef, Mr. Washburn, and Mr. Lewis, each corroborate my former estimate of its distribution as being less frequently seen in the northern portions of the State, which is further negatively endorsed by its notable absence from Mr. Grant's northeastern list.

SPECIFIC CHARACTERS.

Third quill longest; second and fourth but little shorter, and much longer than the fifth, (0.35). Upper parts uniform olivaceous with a decided shade of green. Fore parts of breast, throat and chin, pale brownish yellow; rest of lower parts white; sides washed with brownish olive. Sides of throat and fore part of breast with subrounded spots of well defined brown, darker than the back; rest of breast, except medially, with rather less distinct spots that are more olivaceous. Tibiæ yellowish brown; broad ring around the eye; loreal region, and a general tinge on the side of the head, clear reddish-buff.

Length, 7.00; wing, 4.15; tail, 3.10; tarsus, 1.10.

Habitat, eastern North America, westward to Columbia.

TURDUS AONALASCHKE PALLASII (CABANIS). (759b.)

HERMIT THRUSH.

The plumage of the Hermit Thrush in spring has long confounded it with Swainson's, or perhaps better, Swainson's with the Hermit, but their feeding habits, as well as the song, separate them widely as species. While the former is mostly confined to the branches of the trees for its food, the latter feeds almost exclusively on the ground. The notes of the former are more prolonged, regular, and ascend more gradually, while the latter beginning low, rises rapidly into its highest tinkling melodies, and terminates the strain abruptly. A number of the Hermits may often be found within a short distance of each other, but still not together when feeding. Silently they search amongst the half-decayed leaves in the thickets bordering swampy, partially overflowed tracts, not infrequently venturing into the open fields where larvæ and insects abound, with little of the shyness of the Olive-backed Thrush.

My earliest personal observation of the time of its arrival in the vicinity of where I reside was April 5, 1875. This is a little earlier than any which has been reported to me. Other observers corroborate my own records in making the general date from the 15th to the 20th of April. It seldom sings immediately after its arrival, but in due time those which remain

to build nests overflow with the ebullition of fervid melodies. I have often listened to the delicious notes which to my ear are in no way inferior to those of the Wood Thrush. I am not surprised that those who have heard him for the first time should be ready to exalt him higher than the other in the scale of song, when I remember the associations amid which they found him. The silence, the delicious solitude of his choristry underneath the shadows of the grand, leaf-canopied forest, awaken feelings, sentiments and inspirations eminently calculated to lend enchantment to his liquid, silvery, bell-toned notes which as they cease are instantly repeated by another, responding from the uncertain shadows in the distances beyond. His beautiful *crescendo*, begun so low and soft as to seem far away, and swelling upward progressively and evenly into its rounded sweetness and fullness, till he seems to be near enough to touch, yet all the time unseen, may well secure an appreciation of his powers to one for comparisons. This characteristic is a keynote to his identity while yet undiscovered, as the song of the Wood Thrush is diametrically opposite in being an equally perfect *diminuendo*.

This thrush cannot be said to be common in the middle and southern portions of the State except in its migrations, yet numbers enough remain through the summer to make it no difficult matter to find a nest with due patience, when its habits are well understood.

I have found them within the limits of the corporation of Minneapolis and in the vicinity of Minnetonka in the "Big Woods," a large belt of deciduous forest stretching diagonally from northeast to southwest through the State. I recall the discovery of one in the dark forest about a mile west of the Falls of Minnehaha. The Rev. J. A. Laurie, formerly residing at Duluth, informed me many years since of its presence near that city. He was a careful observer and has on many occasions contributed to me facts of interest in this department of natural history. It does not build its nest till near the first of June, which is uniformly directly on the ground, and under low thick brushes bordering, but not in the dense woods.

It is generally quite near swampy localities. It is composed of coarse grass, twiggs, moss and leaves externally, without mud, and internally of soft, pliable grasses, fine roots, and a few lichens quite artistically arranged. It is rather deeply hollowed.

The eggs, from three to four in number, are a light-blue, with a faint shade of green, one of which is occasionally thinly spotted with rusty-brown. I do not know of their having more than one brood in a season. They become quite common again during September, by the general migration southward, individuals not infrequently being seen as late as the first of November in open autumns.

NOTE. When conversing with Professor S. F. Peckham, formerly on the faculty of the Minnesota State University, and of late connected with the Smithsonian Institution, he spoke of the nest of this species having come under his notice once in Rhode Island, in open ground, and subsequently gave me a written statement as follows: "The nest was on the ground without protection, in a piece of old chestnut woods without underbrush. Eggs, four in number, about two-thirds the size of the Robin's, somewhat thicker in shape, and of a darker green color."

I had the pleasure of learning from him that he had given the birds of New England much study in the years gone by, and was therefore speaking by the book. It was certainly a very remarkable freak for the Hermit Thrush to build in such a place. But most rules have their remarkable exceptions, for they are of finite formulation while the Infinite fills all the spans in the great viaduct of materialized truth.

SPECIFIC CHARACTERS.

Fourth quill longest; third and fourth a little shorter; second about equal to sixth; about thirty hundredths of an inch shorter than the longest. Tail slightly emarginate. Above light olive brown, with a scarcely perceptible shade of reddish, passing however into decided rufous on the rump, upper tail coverts, and tail to a less degree on the outer surface of the wings. Beneath white, with a scarcely appreciable shade of pale buff across the forepart of the breast, and sometimes on the throat; sides of throat and forepart of breast with rather sharply defined subtriangular spots of dark olive brown; sides of breast with paler and less distinct spots of the same. Sides of body under the wings of a paler shade than the back; a whitish ring around the eye; ear coverts very obscurely streaked with paler.

Length, 7.50; wing, 3.85; tail, 3.25; tarsus, 1.15.

Habitat, eastern North America.

MERULA MIGRATORIA (L.). (761.)

AMERICAN ROBIN.

Who that has watched the departure of the Robin from autumn to autumn through successive years, and felt the relentless touch of arctic frosts follow them so soon with their drift-

ing snows and piercing winds, will understand the joy which comes back with their return to this beautiful north-land in the spring.

Not only do they come to meet a thousand times a thousand welcomes for their own sake, but to proclaim that the winter is gone.

Lingering drifts of dingy snow may still cower under the covert of outbuildings and fences, and the winds may still be chilly at times, but the grass has formed green patches on the lawns, while the bloodroots and liverworts have begun to peer through the moist carpet of decaying leaves in the budding woodlands. The males arrive several days in advance of the females, and always in the morning.

If sunny and warm for the season, their familiar notes from the loftiest tree that borders the forest, or the tallest spire of the city will proclaim their presence in a flood of continuous song that will challenge the ear of the dullest. On the other hand, should it be windy, cloudy and chilly, the closest observation will be required to make the longing hope assured, by finding small parties fitting from bush to bush along the borders of brushy woods, or streams fringed with alders and willows in characteristic silence. This transpires between the 25th of March and the 5th of April.* After about a week, the songless females have come, as quietly as the first flakes of the autumn's snow, when the small parties of males—the bachelor's clubs of the species disappear. Each has soon wooed and won a female companion with whom to share the joys and cares of the summer, and hence they will only be seen in pairs until the autumn. I am confident that with few exceptions, the same individuals are reunited in each pair amongst the older birds; and that the sanguineous conflicts, and the gentler ones for the mastery of song, are among the young males of the previous year. True, there doubtless may be some widowers there, some perhaps who have been thrice married, and if so, the first display of chivalric strife will be sure to prove their prowess.

The reinstalment of the Robins in our midst has more to do with human happiness than many a philosopher has yet found out.

*On March 11th, 1878, I saw three Robins (presumably females) and on February 7th, 1880 I saw one in the suburbs of the city. Dr. Hvoslef's report gives dates as follows: "February 19th, 1881 saw a flock, March 23, 1883, and at the same date, 1884."

Their nests have in a few instances been found as early as the 15th of April,* but usually in the different parts of this State from the 25th of April to the 10th of May. The range of conditions under which they build their nests is difficult to define, so characteristic is their proclivity to get the nearest safe proximity to man and his works. Sometimes it is very near the ground in an oleander recently taken from its winter quarters in a greenhouse, or a lilac bush near the door steps, on a low, horizontal oak limb near a window through which the bird could see plainly the transpirations within. In a few instances it is found in the very highest part of a tree. Evergreen shrubbery is a favorite place. Several instances have come under my notice in which the nest has been in such a preposterous place as under a railroad bridge, in a saw mill, and even in a steam boiler shop.

They lay four to five dark bluish-green eggs without spots. In general the nest consists outside of shavings, roots, strings, bits of rags, etc., when near dwellings, then a stratum of leaves, grass and moss cemented with mud and lastly lined with soft, well arranged dry grass. The song is not greatly varied but is loud, clear, liquid and remarkably sweet at a little distance. Although more commonly heard in spring it is not discontinued but confined to the earlier morning until nearly time to migrate southward in autumn. This occurs from about the 15th of October to the 5th of November. Occasionally a number of males are seen still later. The young of the year almost uniformly go first, followed shortly by the females and lastly by the males. I am satisfied from reported observations that in these movements those in the rear occasionally overtake and mingle with the females, and possibly the young.**

Their food embraces too great a range for very definite statement; worms and insects in the early season, and fruits

*One nest was found at Lanesboro on the 5th of May, 1884.

**A reliable gentleman of observing habit, assures me that the Robin occasionally remains in the woods along the Turkey river all winter. The latest date of my own notes gives November 20th. Mr. Washburn found them at Dead lake in Otter Tail county, November 9th, 1885, "as if to stay."

The question of the longevity of the Robins has often been raised and is difficult to answer for the obvious reason that in their wild state consecutive observation is impossible. But I have gathered some facts respecting them in captivity which lead me to believe that under favorable circumstances, in their wild condition they should reach at least an age of twenty years, and possibly twenty-five. The oldest one which has come to my knowledge, was somewhat less than that but the most reliable record I have is one given me by Mr. Geo. B. Sennett, whose name has become familiar to all the friends of bird lore by his famous Collection of Texas Birds, in the National Museum at Washington. It was obtained seven miles from Erie, Pa., and was sixteen years and nine months old when it died.

and berries later. Indeed there is little which they can swallow that does not, under special circumstances, become food for them. Of berries they oftentimes eat to downright gluttony. Indeed when they are abundant the male Robins will remain often in small numbers until driven away by the keener frosts of the middle of November. A few have, in a few instances, braved the entire winter subsisting chiefly upon juniper berries which abound along the borders of lakes in the vicinity of springy swamps. I do not remember of an instance in which the Robin has approached the habitations of man at this rigorous season in this latitude and longitude.

SPECIFIC CHARACTERS.

Third and fourth quills about equal; fifth a little shorter, second longer than sixth; tail slightly rounded; above olive-gray; top and sides of the head black; chin and throat white, streaked with black; eyelids and a spot above the eye anteriorly, white; under parts and insides of wings, chestnut-brown; under tail coverts and anal region with tibiæ white, showing the plumbeous inner portions of the feathers; wings dark-brown, the feathers all edged more or less with pale-ash; tail still darker, the extreme feathers tipped with white; bill yellow, dusky along the ridge and at the tip.

Length, 9.75; wing, 5.45; tail, 4.75; tarsus, 1.25.

Habitat, eastern North America to the Rocky Mountains.

(I have seen the largest numbers of individuals of this species in flocks on the eastern foothill of the Santa Cruz division of the Coast Range of Mountains in Santa Clara county, California, which I have ever seen anywhere in my life time.)

MERULA MIGRATORIA PROPINQUA RINGWAY. 761a.)

WESTERN ROBIN.

This species is introduced because a single individual has been reliably identified in the northwestern part of the State, and others credibly reported as found on the Missouri river. Several visits to the Pacific coast, in one of which I spent about two years within the bounds of California, gave me a rare opportunity to observe the birds at different seasons and in a great variety of localities. I first met this species in the month of February, 1870, along the thinly timbered banks of the Cosumnes river about twenty miles southeast of Sacramento. Its peculiar call-notes arrested my ear at some little distance from me, which, as it was frequently repeated, enabled me to find the bird. It was perched upon one of the higher branches of a

live oak, and apparently alone. Listening I soon heard the semi-distant answer, and desiring to secure both male and female, I deferred securing it till it flew, which although disappointing me for the time, gave me my first opportunity to see its flight. I patiently but cautiously followed them until rewarded by securing them. They were shy and nervous but not remarkably so. I was a little too anxious to get so rare a species to make all the observations I otherwise would have made, but other occasions gave me ample opportunity to do so. Although shy at this season their manner did not impress me with the idea that in summer at breeding time they would be so, and hence I was not dissatisfied at Dr. Cooper's subsequent report of their coming about dwellings in cold weather as well as Dr. Suckly's statement that in Washington Territory after a fall of snow they become approachable enough "for any ordinary shot to obtain a dozen specimens in a forenoon." I think that while by no means a dull bird they are less pronounced in vigor and style of action than our Eastern Robin. They leave California in the latter part of March and migrate northward to breed. I cannot doubt that some of them seek by elevation in the proximate mountains what the principal part do by latitude, notwithstanding that Dr. Cooper failed to find any in the Sierra Nevada summits in September in a latitude but little north of San Francisco. They return to the valleys of California in October and November, frequently in company with the Eastern Robin, when they are most easily obtained. Their flight does not differ materially from the kindred species, only a little less of the "here I am" boldness of the other.

SPECIFIC CHARACTERS.

Fourth quill longest; third and fifth a little shorter; second much longer than sixth; tail nearly even, the lateral feather shorter; above, rather dark bluish-slate; axillaries plumbeous, with white at base, and under wing coverts plumbeous, broadly tipped with white parts generally, a patch on the upper eyelids continuous with a stripe behind it along the side of the head and neck, the lower eyelids, two bands across the wing coverts and the edges of the quills in part, rufous orange-brown; middle of belly white; sides of the head and neck continuous with a broad pectoral transverse band, black; most of the tail feathers with a terminal patch of brownish-white; bill black; feet yellow.

Female more olivaceous above; the white of the abdomen more extended; the brown beneath paler; the pectoral band obsolete.

Length, about 10 inches; wing, 5; tail, nearly 4; tarsus, 1.25.

Habitat, Pacific coast of North America.

SIALIA SIALIS (L.). (766.)**BLUEBIRD.**

There is an unmingled pleasure in giving this beautiful and highly civilized bird a welcome to Minnesota after the long and comparatively birdless winter, coming, too, so often almost exactly at the same time as the Robin, and like him, though with less ostentation, at once proclaiming its arrival by its familiar song. It is ordinarily to be looked for about the 25th of March. In 1868 it came to Minneapolis on March 20th; 1869, March 29th; 1870, April 1st; 1875, March 29th; 1876, April 7th. In 1878 several were credibly reported from the immediate vicinity on January 26th, after a prolonged interval of high temperature. On the tenth of March following I found them here to stay. In 1880 I found them near the city on the 4th of February, but none more until March 23d. The variety of these dates seems to indicate that his winter quarters are probably not as far removed from this latitude as are those of the Robins. (I do not believe with Wilson that he comes from very far.) The males precede the females a little, and mating does not usually take place until about the fourth week in April.

Bartram is quoted by Wilson as saying: "When he first begins his amours it is pleasing to behold his courtship, his solicitude to please and to secure the favor of his beloved female.

He uses the tenderest expressions, sits close beside her, caresses and sings to her in most endearing warblings. When seated together if he spies an insect delicious to her taste, he takes it up, flies with it to her, spreads his wing over her, and puts it in her mouth." The last named author continues "if a rival makes his appearance—for they are ardent in their love—he quits her in a moment, attacks and pursues the intruder as he shifts from place to place, in tones that bespeak the jealousy of his affections, conducts him with many reproofs beyond the extremities of his territory, and returns to warble out his transports of triumph beside his beloved mate. The preliminaries being thus settled, and the spot fixed on, they begin to clean out the old nest and the rubbish of the former year to prepare for the reception of their future offspring." The nest is likely to be in a hole in the top of a rotten-hearted stump, a like opening in the end of a fence rail, a knot-hole in a fence post, or in a Martin's box. The materials for its con-

struction generally consist of soft grasses, feathers and wool, carelessly disposed, but adapted to warmth in the early season of the year in which the first brood is brought forth.

Five eggs are the common number laid, sometimes six and sometimes only four, colored light blue with a faint tinge of greenish. Two and three broods are usually reared in the season. Their food consists of large beetles, spiders and other common insects during summer, and berries, fruits and seeds later in the year. I need not attempt to describe its pleasing song or special habits which are so very well known, for it is a recognized favorite everywhere it goes. The Bluebird begins to be less frequently seen about the middle of October but is not usually without some representative during the remainder of the month and exceptionally into November.

Its distribution is universal wherever there is timber, except perhaps the denser portions of the sunless forests. It is never as abundant as the Robin, but only less so in most localities.

Mr. Washburn thought it rather sparingly represented in autumn in the valley of the Red river.

SPECIFIC CHARACTERS.

Entire upper parts including wings and tail continuous and uniform azure blue; the cheeks of a duller tint of the same; beneath reddish-brown; the abdomen, anal region and under tail coverts, white; bill and feet, black; shafts of the quills and tail feathers black. Female with the blue lighter and tinged with brown on the head and back.

Length, 6.75; wing, 4.00; tail, 2.91.

Habitat, eastern North America north to latitude 48°; west to western Kansas and lower Missouri regions.

SIALIA MEXICANA SWAINSON. (767.)

WESTERN BLUEBIRD.

I was not aware that this bird had been identified amongst the rare visitors of Iowa, until after placing it in my list of the birds of Minnesota, in October, 1880, as a straggler undoubtedly. I am very familiar with the bird on the Pacific coast where I met it constantly from latitude forty-five, southward to San Diego. I could see no marked difference in its habits from the eastern bluebird. It chose the same kind of places for its nest and the same kinds of food for nourishment. I never saw any such marked proclivity to build in the immediate vicinities of dwellings and outhouses, but attributed this to its inferior powers of song failing to enlist the interest of families to invite

them by special provisions for their nesting in boxes, as is done so much for the eastern bird. Several instances occurred where notwithstanding its neglect it placed its nest as near to dwellings as does the other. Those found in this State were near the southwestern and western borders, and remote from improvments. Like its double cousin it clings to wooded sections. Dr. Cooper says in his Land Birds of California "at Santa Cruz this bird is even more confiding than the eastern species which rarely frequents such large towns. In the spring from February 20th to April many pairs could be seen daily seeking places for their nest, even in the noisiest streets, inspecting closely every new building that was being erected, as if they supposed it to be for their special benefit. Some few pairs found nesting-places under porches, in knot-holes, etc, though the inhabitants provided them with no special homes." This eminent observer is excellent authority. I think however when he says that our eastern bluebird rarely frequents such large towns as Santa Cruz, his long residence in that sunny land of flowers and birds may have made him forgetful, for so far from this it is very common in towns in Minnesota much larger than the one he mentions.

SPECIFIC CHARACTERS.

Rich azure-blue including the head and neck all around; a patch of purplish-chestnut on the middle of the back; breast and sides rich chestnut; belly and vent dull-blue or bluish-gray; bill and feet black; measurements same as the eastern species.

A LIST OF THE PRINCIPAL POPULAR SYNONYMS OF THE BIRDS OF MINNESOTA.

COMPILED AND ARRANGED BY HENRY F. NACHTRIEB.

This list is intended primarily for the convenience of those who have learned to know our birds by popular names that once had current value but that have been discarded by the American Ornithologists, Union, and that are more or less rapidly becoming obsolete.

The popular name adopted by the American Ornithologists' Union immediately follows the number after the scientific name, and is printed in bolder type than the synonyms, which are enclosed within parentheses.

The number between the scientific name and the popular name refers to the page of the "Notes."

All those interested in our birds ought to (for excellent reasons that cannot be given here) adopt the popular names of the American Ornithologists' Union Check-list as given here and in the "Notes."

1. *Acanthis linaria*, 299. - - - - **Redpoll.**
(Common Redpoll. Redpoll Linnet.)
2. *Accipiter atricapillus*, 183. - **American Goshawk.**
(Blue Hen Hawk (when mature). Chicken Hawk (when young). Goshawk).
3. *Accipiter cooperi*, 181. - - - **Coopers' Hawk.**
(Chicken Hawk.)
4. *Accipiter velox*, 180. - - **Sharp-shinned Hawk.**
(“Pigeon Hawk.”)
5. *Actitis macularia*, 144. - - **Spotted Sandpiper.**
(Tip-up. Teeter-tail.)
6. *Æchmophorus occidentalis*, 4. - - **Western Grebe.**
7. *Ægialitis semipalmata*, 152. - **Semipalmated Plover.**
(Ring Plover. Ring-neck. Ring-neck Plover.)
8. *Ægialitis vocifera*, 151. - - - - **Killdeer.**
(Killdeer Plover.)
9. *Agelaius phoeniceus*, 277. - **Red-winged Blackbird.**
(Blackbird. Marsh Blackbird. Red-and-buff-shouldered Marsh Blackbird. Swamp Blackbird.)
10. *Aix sponsa*, 51. - - - - - **Wood Duck.**
(Summer Duck. “The Bride.”)

11. **Alaudidæ, 258-260.** - - - - - **Larks.**
12. **Alcedinidæ, 223-224.** - - - - - **Kingfisher.**
13. **Ammodramus bairdii, 313.** - - - **Baird's Sparrow.**
(Baird's Savanna Sparrow.)
14. **Ammodramus caudacutus, 318.** **Sharp-Tailed Sparrow.**
(Sharp-tailed Finch.)
15. **Ammodramus leconteii, 315.** - **Leconte's Sparrow.**
(Leconte's Grasshopper Sparrow. Leconte's Bunting.)
16. **Ammodramus sandwichensis savanna, 311.**
(Common Savanna Sparrow.) **Savanna Sparrow.**
17. **Ammodramus savannarum passerinus, 313,**
Grasshopper Sparrow.
(Yellow-winged Sparrow. Quail Sparrow.)
18. **Ampelidæ, 356-360.** - - - - - **Chatterers.**
19. **Ampelis cedrorum, 358.** - - - **Cedar Waxwing.**
(Carolina Waxwing. Cedar-bird. Cherry-bird.)
20. **Ampelis garrulus, 356.** - - - **Bohemian Waxwing.**
(Northern Waxwing.)
21. **Anas americana, 43.** - - - - - **Baldpate.**
(American Widgeon.)
22. **Anas boschas, 38.** - - - - - **Mallard.**
(Mallard-Duck. Tame Duck. Wild or Domestic Duck.
Green-head.)
23. **Anas carolinensis, 44.** - - - **Green-winged Teal.**
(American Green-winged Teal.)
24. **Anas cyanoptera, 47.** - - - **Cinnamon Teal.**
25. **Anas discors, 45.** - - - **Blue-winged Teal.**
26. **Anas obscura, 40.** - - - - - **Black Duck.**
(Dusky Duck.)
27. **Anas strepera, 41.** - - - - - **Gadwall.**
(Gray Duck.)
28. **Anatidæ, 34-84.** - - - **Ducks, Geese, and Swans.**
29. **Anser albifrons gambeli, 75.**
American White-fronted Goose.
(White-fronted Goose. Speckle-bill. Speckle-belly.)
30. **Anseres, 34-84.** - - - **Ducks, Geese, and Swans.**
31. **Anthus pensilvanicus, 405.** - - - **American Pipit.**
(Louisiana Pipit. American Titlark. Brown Lark. Wagtail.
Pipit.)
32. **Anthus spragueii, 406.** - - - **Sprague's Pipit.**
(Missouri Titlark. Missouri Skylark.)
33. **Antrostomus vociferus, 237.** - - - **Whip-poor-will.**
(Night-jar.)
34. **Aphrizidæ, 153-154.** - - - - - **Surf-birds.**
35. **Aquila chrysaetos, 195.** - - - **Golden Eagle.**
(Ring-tailed Eagle.)

36. *Archibuteo ferrugineus*, 194. **Ferruginous Rough-leg.**
(Ferruginous Rough-legged Buzzard. California Squirrel Hawk.)
37. *Archibuteo lagopus sancti-johannis*, 192. **American Rough-legged Hawk.**
(American Rough-legged Buzzard. "Black Hawk.")
38. *Ardea candidissima*, 92. - - - **Snowy Heron.**
(Snowy Egret. White "Crane." Little White Egret.)
39. *Ardea egretta*, 91. - - - **American Egret.**
(Great White Egret. White Heron.)
40. *Ardea herodias*, 89. - - - **Great Blue Heron.**
41. *Ardea virescens*, 93. - - - **Green Heron.**
42. *Ardeidæ*, 85-97. - - ; - - - **Hérons.**
43. *Arenaria interpres*, 153. - - - **Turnstone.**
(Brant Bird. Calico Back.)
44. *Asio accipitrinus*, 208, - - - **Short-eared Owl.**
(Marsh Owl.)
45. *Asio wilsonianus*, 207. - **American Long-eared Owl.**
(Long-eared Owl.)
46. *Aythya affinis*, 60. - - - **Lesser Scaup Duck.**
(Little Black-head.)
47. *Aythya americana*, 55. - - - **Redhead.**
(Pochard. American Pochard.)
48. *Aythya collaris*, 62. - - - **Ring-necked Duck.**
(Ring-neck Duck.)
49. *Aythya marila nearctica*, 58. **American Scaup Duck.**
(Big Scaup Duck. Blue Bill. Raft Duck. Flocking Fowl.
Greater Scaup Duck. Big Black-head. Shuffler.)
50. *Aythya vallisneria*, 57. - - - **Canvas-back.**
51. *Bartramia longicauda*, 141. **Bartramian Sandpiper.**
(Bartram's Tattler. Upland Plover. Field Plover. Grass
Plover. Prairie Pigeon. Upland Sandpiper.)
52. *Branta bernicla*, 81. - - - **Brant.**
(Brant Goose. Barnacle Goose.)
53. *Branta canadensis*, 77. - - - **Canada Goose.**
(Wild Goose. Common Wild Goose.)
54. *Branta canadensis hutchinsii*, 80. **Hutchins's Goose.**
55. *Branta nigricans*, 82. - - - **Black Brant.**
56. *Bonasa umbellus*, 160. - - - **Ruffed Grouse.**
(“Partridge,” in New England. “Pheasant,” in the Middle
and Southern States.)
57. *Botaurus exilis*, 87. - - - **Least Bittern.**
58. *Botaurus lentiginosus*, 85. - **American Bittern.**
(Bittern. Indian Hen. Stake Driver. Bog-bull.)
59. *Bubonidæ*, 207-219. - - - **Owls.**
60. *Bubo virginianus*, 215. - - **Great Horned Owl.**
(Hoot Owl. Cat Owl.)

61. *Buteo borealis*, 185. - - - Red-tailed Hawk.
(Red-tailed Buzzard. "Hen Hawk.")
62. *Buteo borealis calurus*, 187. - Western Red-tail.
(Black Red-tail.)
63. *Buteo borealis kriderii*, 186. - - Krider's Hawk.
(Krider's Red-tail.)
64. *Buteo latissimus*, 190. - - Broad-winged Hawk
(Broad-winged Buzzard.)
65. *Buteo lineatus*, 188. - - Red-shouldered Hawk.
(Red-shouldered Buzzard. Winter Hawk. "Chicken Hawk.")
66. *Buteo swainsoni*, 189. - - Swainson's Hawk.
(Common American Buzzard. Swainson's Buzzard.)
67. *Calamospiza melanocorys*, 346. - - Lark Bunting.
(White-winged Black-bird.)
68. *Calcarius lapponicus*, 306. - - Lapland Longspur.
69. *Calcarius ornatus*, 308. - Chestnut-collared Longspur.
(Black-shouldered Longspur. White-tailed Longspur.)
70. *Calcarius pictus*, 307. - - - Smith's Longspur.
(Painted Longspur.)
71. *Calidris arenaria*, 129. - - - - Sanderling.
(Ruddy "Plover.")
72. *Caprimulgidae*, 237-240. - - - - Goatsuckers.
73. *Cardinalis cardinalis*, 339. - - - - Cardinal.
(Cardinal Grosbeak. Cardinal Red-bird. Virginia Night-
ingale. Red-bird.)
74. *Carpodacus purpureus*, 294. - - Purple Finch.
75. *Cathartes aura*, 174. - - - Turkey Vulture.
(Turkey Buzzard.)
76. *Cathartidae*, 174-175. - - - American Vultures.
77. *Chætura pelagica*, 240. - - - Chimney Swift.
(Chimney Swallow.)
78. *Charadriidae*, 148-153. - - - - Plovers.
79. *Charadrius dominicus*, 149 American Golden Plover.
(Field Plover. Bull-head Plover. Bull-head. Golden Plover.
Frost-bird.)
80. *Charadrius squatarola*, 148. - Black-bellied Plover.
(Swiss Plover. Bull-head Plover. Whistling Field Plover.
Ox-eye.)
81. *Charitonetta albeola*, 66. - - - Buffle-head.
(Dipper. Butter-ball. Spirit Duck.)
82. *Clangula hyemalis*, 67. - - - - Old-squaw.
(South-southerly. Long-tailed Duck. Old-wife.)
83. *Ceophloeus pileatus*, 232. - Pileated Wood-pecker.
(Logcock.)
84. *Certhia familiaris americana*, 423. Brown Creeper.
85. *Certhiidae*, 423-424. - - - - Creepers.

- 86. *Ceryle alcyon*, 223.** - - - **Belted Kingfisher.**
87. *Chelidon erythrogaster*, 352. - - **Barn Swallow.**
88. *Chen hyperborea* 73. - - - **Lesser Snow Goose.**
 (Snow Goose.)
89. *Chen hyperborea nivalis*, 75. - **Greater Snow Goose.**
 (Snow Goose. White Brant.)
90. *Circus hudsonius*, 178. - - - **Marsh Hawk.**
 (American Marsh Hawk. American Marsh Harrier. Marsh
 Harrier. Blue Hawk.)
91. *Cistothorus palustris*, 421. **Long-billed Marsh Wren.**
92. *Cistothorus stellaris*, 420. **Short-billed Marsh Wren.**
93. *Clivicola riparia*, 355. - - - **Bank Swallow.**
 (Sand Martin.)
94. *Coccothraustes vespertina*, 291. **Evening Grosbeak.**
95. *Coccyges*, 220-224, - - - **Cuckoo-like Birds.**
96. *Coccyzus americanus*, 220. - **Yellow-billed Cuckoo.**
 ("Rain Crow.")
97. *Coccyzus erythrophthalmus*, 221. **Black-billed Cuckoo.**
98. *Colaptes auratus*, 235. - - - **Flicker.**
 (Golden-winged Woodpecker. Pigeon Woodpecker. Yucker.
 High-holder. Yellow-hammer.)
99. *Colinus virginianus*, 155. - - - **Bob-white.**
 (Virginia Partridge. Virginia "Quail." "Quail.")
100. Columbæ, 171-173, - - **Columbine Birds. Doves.**
101. Columbidae 171-173, - - - **Pigeons.**
102. *Colymbus auritus*, 6. - - - **Horned Grebe.**
103. *Colymbus holboellii*, 5, - - - **Red-necked Grebe.**
 (American Red-necked Grebe.)
104. *Colymbus nigricollis californicus*, 8. **American Eared Grebe.**
105. *Compsothlypis americana*, 376. - **Parula Warbler.**
 (Blue Yellow-backed Warbler.)
106. *Contopus borealis*, 248. - **Olive-sided Flycatcher**
107. *Contopus virens*, 250. - - - **Wood Pewee.**
108. Corvidæ, 260-271. - - - **Crows and Jays.**
109. *Corvus americanus*, 267. - - - **American Crow.**
 (Common American Crow. Crow.)
110. *Corvus corax sinuatus*, 266. - - **American Raven.**
 (Raven.)
111. *Corvus ossifragus*, 270. - - - **Fish Crow.**
 (South-eastern Fish Crow.)
112. *Chondestes grammacus*, 318. - - **Lark Sparrow.**
 (Lark Finch.)
113. *Chordeiles virginianus*, 238, - - - **Nighthawk.**
 (Bull-bat.)
114. Cuculidæ, 220-222. - - - **Cuckoos.**

- 115. *Cyanocitta cristata*, 262.** - - - - - **Blue Jay.**
116. *Crymophilus fulicarius*, 112. - - **Red Phalarope.**
 (Coot-footed Tringa. Gray Phalarope.)
117. *Dafila acuta*, 49. - - - - - **Pintail.**
 (Spring-tail. Pin-tail Duck.)
118. *Dandragapus canadensis*, 158. **Canada Grouse.**
 (Spotted Grouse. Spruce Grouse. Spruce "Partridge.")
119. *Dendroica æstiva*, 378. - - **Yellow Warbler.**
 (Summer Warbler. Summer Yellow-bird. Blue-eyed
 Yellow Warbler. Golden Warbler.)
120. *Dendroica blackburniæ*, 389. **Blackburnian Warbler.**
 (Blackburn's Warbler. Prometheus. Orange-throated
 Warbler.)
121. *Dendroica cærulea*, 384. - - **Cerulean Warbler.**
 (Azure Warbler.)
122. *Dendroica cærulescens*, 379. **Black-throated Blue Warbler.**
123. *Dendroica castanea*, 387. **Bay-breasted Warbler.**
 (Autumn Warbler.)
124. *Dendroica coronata*, 381. - - **Myrtle Warbler.**
 (Yellow-rumped Warbler. Yellow-crowned Warbler.
 Myrtle-bird.)
125. *Dendroica maculosa*, 382. - **Magnolia Warbler.**
 (Black-and-yellow Warbler. Magnolia.)
126. *Dendroica palmarum*, 393. - - **Palm Warbler.**
 (Yellow Red-poll Warbler. Red-poll Warbler.)
127. *Dendroica pensylvanica*, 386. **Chestnut-sided Warbler.**
128. *Dendroica striata*, 388. - - **Black-poll Warbler.**
129. *Dendroica tigrina*, 377. - - **Cape May Warbler**
130. *Dendroica vigorsii*, 392. - - **Pine Warbler.**
 (Pine-creeping Warbler.)
131. *Dendroica virens*, 391. **Black-throated Green Warbler.**
132. *Dolichonyx oryzivorus*, 271. - - **Bobolink.**
 (Meadow-wink. Skunk Blackbird (of Northern States).
 Reed-bird (of Middle States). Rice-bird (of Southern
 States).)
133. *Dryobates pubescens*, 227. - **Downy Woodpecker.**
 (Little sapsucker.)
134. *Dryobates villosus*, 225. - - **Hairy Woodpecker.**
 (Big Sapsucker.)
135. *Ectopistes migratorius*, 171. - **Passenger Pigeon.**
 (Wild Pigeon.)
136. *Elanoides forficatus*, 176. - **Swallow-tailed Kite.**
137. *Empidonax acadicus*, 253. - **Acadian Flycatcher.**
 (Small Green-crested Flycatcher.)
138. *Empidonax flaviventris*, 252. **Yellow-bellied Flycatcher.**

- 139. *Empidonax minimus*, 256.** - - **Least Flycatcher.**
140. *Empidonax pusillus traillii*, 255. - - **Traill's Flycatcher.**
141. *Ereunetes pusillus*, 128. - - **Semipalmated Sandpiper.**
 (Peep. Sand-peep.)
142. *Erismatura rubida*, 71. - - **Ruddy Duck.**
143. *Falco columbarius*, 200. - - **Pigeon Hawk.**
 (American Merlin.)
144. *Falco peregrinus anatum*, 199. - - **Duck Hawk.**
 (Peregrine Falcon. Great-footed Hawk.)
145. *Falco richardsonii*, 201. - - **Richardson's Merlin.**
 (Richardson's Pigeon Hawk. American Merlin.)
146. *Falco rusticolus gyrfalco*, 198. - - **Gyrfalcon.**
 (American Continental Gyrfalcon. Gray Gyrfalcon.)
147. *Falco sparverius*, 202. - **American Sparrow Hawk.**
 (Rusty-crowned Falcon. Sparrow Hawk.)
148. Falconidae, 176-205. - **Falcons, Hawks, and Eagles,**
149. Fringillidae, 291-347, - - - **Finches.**
150. *Fulica americana*, 109. - - **American Coot.**
 (White-billed Mud-hen. Crow Duck.)
151. *Galeoscoptes carolinensis*, 408. - - - **Catbird.**
152. Gallinae, 155-170. - **Gallinaeous Birds.** - **Fowls.**
153. *Gallinago delicata*, 120. - - **Wilson's Snipe.**
 (American Snipe. Jack Snipe. "English" Snipe.)
154. *Gallinula galeata*, 108. - - **Florida Gallinule.**
 (Common Gallinule. Red-bellied Mud-hen.)
155. *Glaucionetta clangula americana*, 64.
 (Garrot. Golden-eye. Whistler.) **American Golden-eye.**
156. *Glaucionetta islandica*, 65. - **Barrow's Golden-eye.**
 (Rocky Mountain Garrot.)
157. *Geothlypis agilis*, 397. - - **Connecticut Warbler.**
158. *Geothlypis philadelphia*, 398. - **Mourning Warbler.**
159. *Geothlypis trichas*, 399. - **Maryland Yellow-throat.**
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- 297. *Spizella pallida*, 327.** . - - **Clay-colored Sparrow.**
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- 305. *Scolopacidae*, 117-148.** - - - - **Snipe.**
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- 308. *Sturnella magna*, 278.** - - - **Meadowlark.**
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- 309. *Sturnella magna neglecta*, 280.** **Western Meadowlark.**
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- 321. *Tringa maculata*, 125.** - - - **Pectoral Sandpiper.**
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- 323. Totanus flavipes, 135.** - - - - **Yellow-legs.**
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- 324. Totanus melanoleucus, 133.** - **Greater Yellow-legs.**
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- 335. Turdus fuscescens, 435.** - - - **Wilson's Thrush.**
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- 360. Zonotrichia querula, 320.** - - **Harris's Sparrow.**
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PRINCIPAL ERRATA.

- Page 40, line 20, read Black Duck for Black.
Page 51, line 19, read Wood Duck for Wood.
Page 55, line 30, read Redhead for Red Head.
Page 58, line 2, read American for Greater.
Page 64, line 7, read Bonaparte for Bonap.
Page 102, line 20, read Rallus for Ralaus.
Page 163, line 7, read *Pediacætes* for *Fediocætes*.
Page 221, 6th line from bottom, read *Coccyzus* for *Coycczus*.
Page 259, line 2, read 474b for 4746.
Page 280, line 2, read Meadowlark for Meadow Lark.
Page 396, line 17, read *Noveboracensis* for *Novebobacensis*.
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NOTE.

Throughout the "Notes" Linnaeus is abbreviated to L., and on page 64 Bonaparte is (accidentally) abbreviated to Bonap. Dr. Hatch had throughout adopted the abbreviations of the A. O. U. check-list, but for several reasons it was decided to go beyond the restrictions noted in the prefatory statement, and (with the exception of Linnaeus) write the names in full.

H. F. N.



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Prepared by the State Zoölogist.

NOTE.—The numbers in the first column refer to the pages of the "Notes"; those in the second, to the numbers of the list of popular synonyms, beginning on page 450.

The scientific names are entered only under the genus, but the popular names consisting of two or more terms are entered twice, and in a few cases three times.

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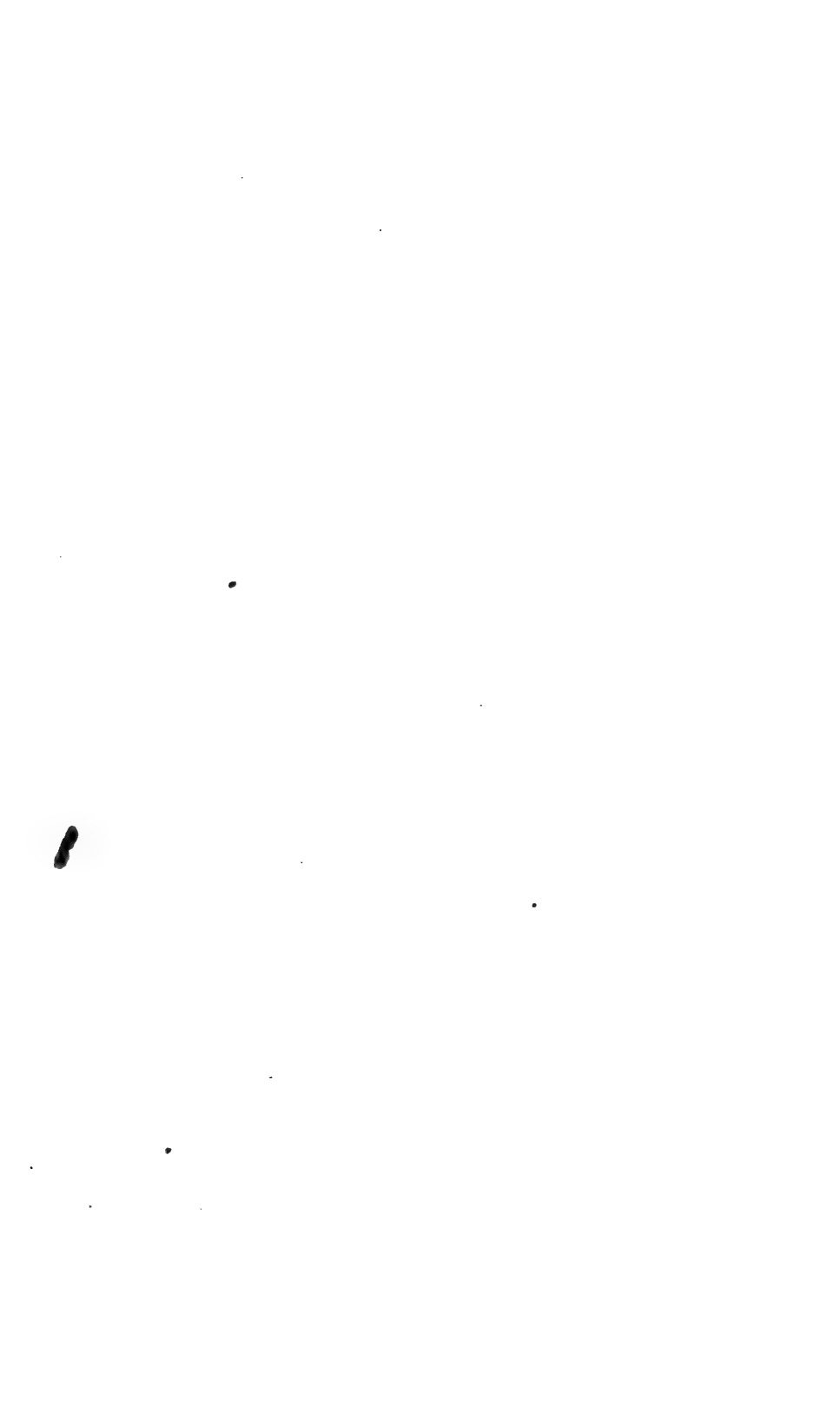
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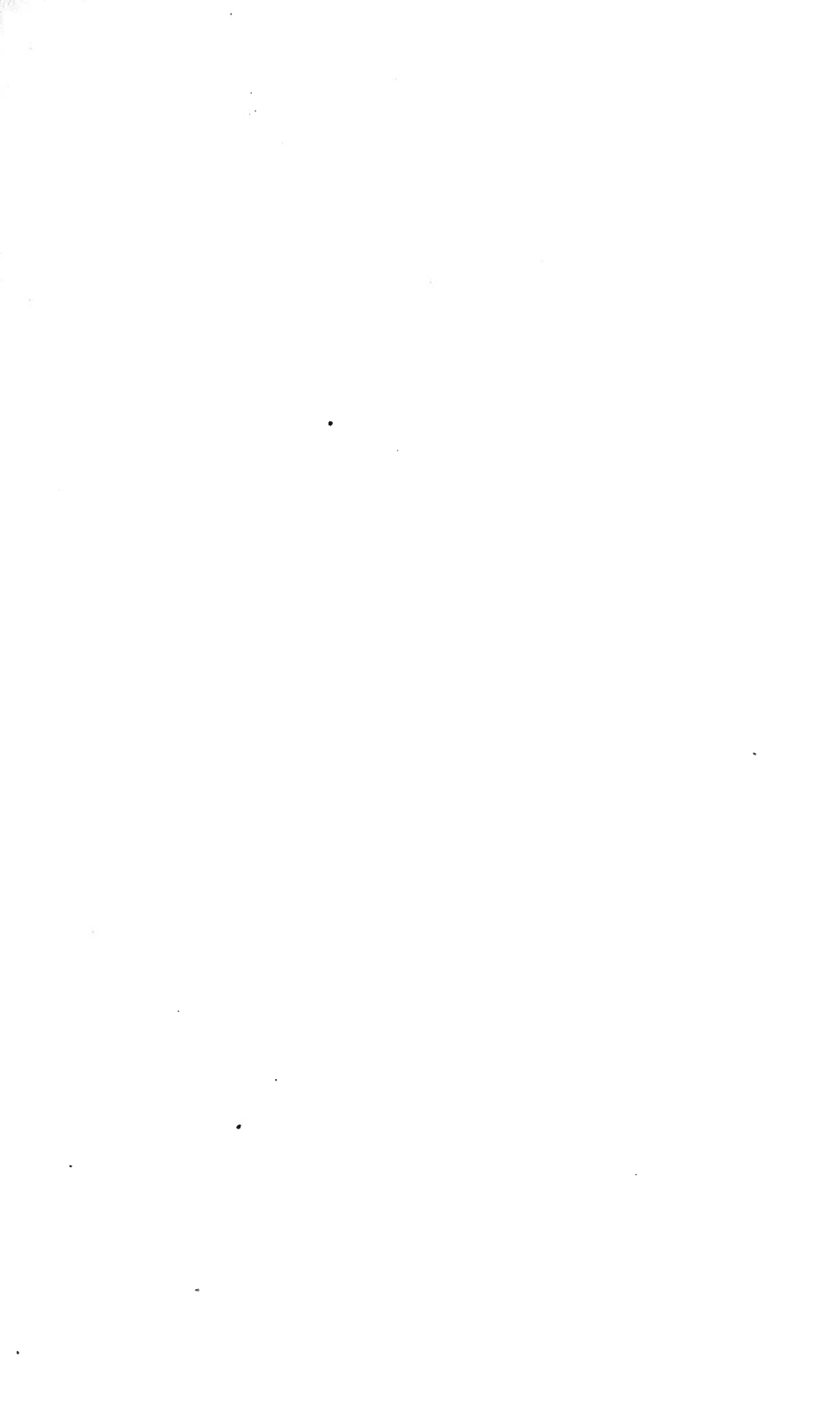
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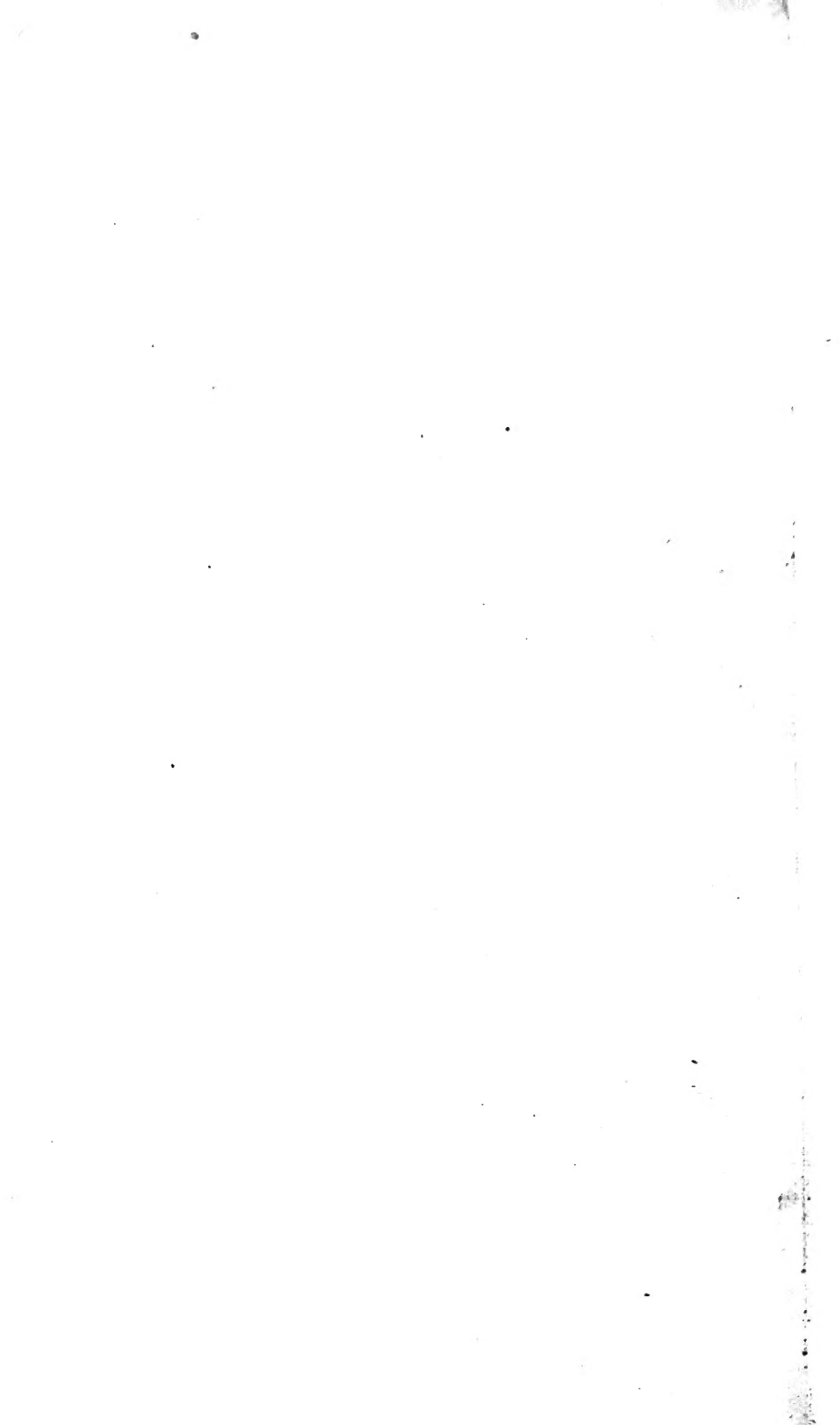
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