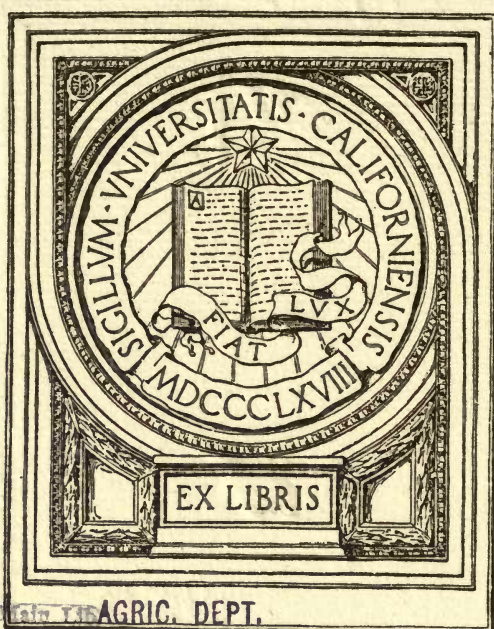


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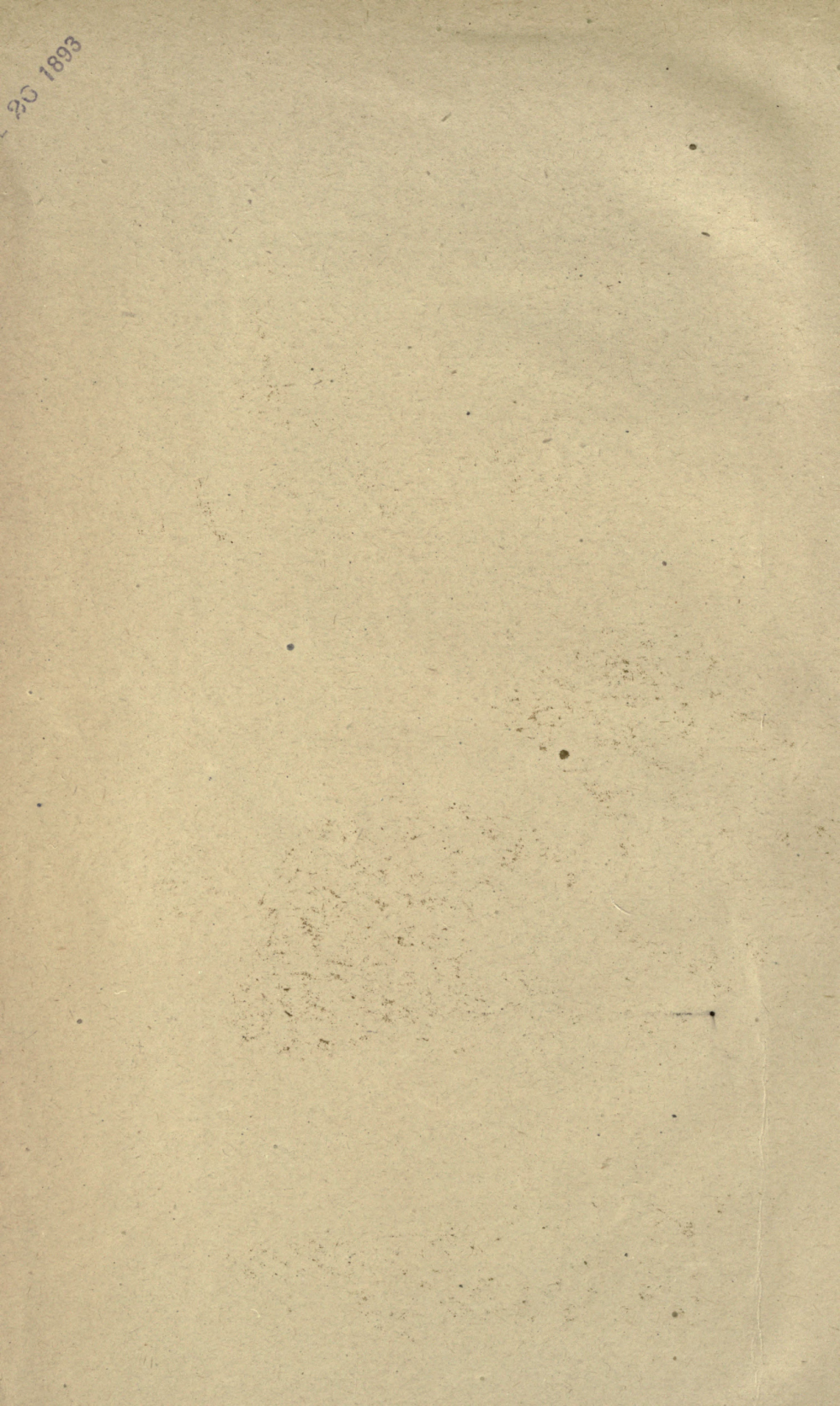
Birds of Michigan



By H. J. Cook . . .



Michigan Agricultural College
Bulletin No. 94



20 1893

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MICHIGAN

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BIRDS OF MICHIGAN

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INTRODUCTION.

Of the several lists of the birds of Michigan, from that of Dr. Abram Sager, published in 1839, to the most recent by Dr. Morris Gibbs, published in the *Ornithologist and Oölogist*, Vol. 10, 1885, not one is accessible to the younger students of ornithology. While some of the lists are quite full and accurate, not one gives the food and nesting habits of our birds. Such a list can but fill a pressing need, and must receive a most hearty welcome. Indeed I have had frequent inquiries for a catalogue by my students and others, and often have been urged to prepare a list.

Owing to my very numerous duties at the college, and my greater interest in the study of entomology I have, previous to this time, been unable to give any time to this work. The past summer the valuable manuscripts of the late Dr. H. A. Atkins came into my hands, and the State Board of Agriculture voted that I should prepare a list, to be sent out as a bulletin by the experiment station.

Having taught ornithology for the past twenty-six years at the Michigan Agricultural College to large classes, in which there were many good observers who had already made some progress in this study, and who represented many sections of the State, and having in the meantime made quite a considerable collection, through the aid of my students, of birds and birds' eggs for our museum, of which I have had the entire charge, I have been able to gather many and some valuable facts regarding the birds of our State.

I have also had in my possession all the manuscripts of the late Dr. H. A. Atkins, of Locke, Michigan, who was for twenty-nine years a most enthusiastic and conscientious student of this branch of natural history. Dr. Atkins kept a careful record of the birds of Locke, Ingham County, Michigan, with the date of the capture of each species, the time of the first appearance and exit, each year, and the full dates of all migrations. This record was very full and accurate, considering the meager literature that Dr. Atkins had at his command. Dr. Atkins visited me quite frequently, and I am assured of his entire devotion to this science, and his earnest effort to secure all possible accuracy in his determination of species and his statements of facts. I have received valuable aid from Dr. Atkins' carefully prepared manuscript, and have starred every bird that he reported from our State. For the dates, nesting habits, number and colors of eggs, I am much indebted to these manuscripts, which, through the kindness of Mrs. Atkins, were put in my possession. Nearly all the birds reported by Dr. Atkins have also been taken here, and so have come under my own personal observation. Dr. Atkins' observations were nearly all made at Locke, and the species starred were all taken at that place, unless special mention is made to the contrary.

I have also received great assistance from Prof. A. W. Butler, of Brookville, Indiana.

I have not only profited from his excellent "Birds of Indiana" (one of our most complete and most admirably arranged list of birds), but he has kindly reviewed my list and offered most valuable suggestions, has loaned me books and papers, and has given me very valuable assistance in the preparation of the bibliography.

I have profited much from the accurate lists of Michigan birds, prepared by Dr. Morris Gibbs of Kalamazoo, Michigan, from his many valuable articles in the several ornithological papers, and additions, corrections and suggestions given me in the preparation of this list. Dr. Gibbs has also helped me very much in the preparation of the bibliography.

The kindness of Professor J. A. Allen, and Drs. Elliott Coues, C. Hart Merriam, A. K. Fisher and Robert Ridgway in reviewing a preliminary list, and suggesting important changes, is most heartily appreciated. I have also received very great aid from the valuable manuals of Drs. Coues, Ridgway and Jordan, the excellent treatises of Samuels and Davie, and the other American works that treat of birds. I have been materially aided by my many students, especially Mr. C. B. Cook and L. Whitney Watkins, and by the many correspondents whose names appear in the text, especially Messrs. A. H. Boies, Hudson; Jerome Trombley, Petersburg; Stewart E. White, Grand Rapids; Profs. J. W. Simmons, Owosso; and James Satterlee, Greenville; Drs. J. B. Steere, Ann Arbor; W. C. Brownwell, Morrice, and Messrs. J. B. Purdy, Plymouth; F. M. Falconer, Hillsdale; E. E. Brewster, Iron Mountain; Ludwig Kumlein, Milton, Wisconsin; E. L. Moseley, Sandusky, Ohio; H. Nehrling, custodian city museum, Milwaukee, Wisconsin; C. S. Osborn, Sault Ste. Marie; M. L. Leach, Traverse City; Dudley E. Waters, Grand Rapids; and L. S. Foster of New York City.

The admirable illustrations were received through the kindness of Messrs. Estes and Lauriat, and are the same that are used by Dr. Coues to illustrate his valuable Manual of North American Birds. The illustration for the European Sparrow was received through the courtesy of Dr. Edwin Willits of the *Department of Agriculture*.

I have adopted the arrangement of the American Ornithological Union, and so give after the serial number of each species the number of the species as it occurs in the Union list. I have also appended in parenthesis, the number of the species as given in Coues' Key and Check List. This is for the convenience of beginners, who have or should have this valuable manual.

These numbers will prove of great convenience in correspondence and in making exchanges. Although I strongly recommend every student of birds and every would be student to procure Coues' Key to the Birds of North America, I have not used his arrangement or nomenclature, as they are not what he would use were he preparing his work today; but as I have given his numbers, there would be no difficulty in using this list and his invaluable book, which I regard as near perfection as any work of the kind which I have ever seen in any line of science. This list will enable any student to correct Coues' nomenclature according to the accepted nomenclature of the Ornithological Union, which was prepared by a committee of which Dr. Coues was himself a member. In the back part of the last edition of Dr. Coues' Key will be found the two nomenclatures side by side.

PECULIARITIES OF OUR MICHIGAN BIRD FAUNA.

Our bird fauna, like our entire fauna, owing to the protection given by the great lakes, which nearly surround us, is very interesting. As Dr. C. Hart Merriam has shown by a colored map, issued by the *Department of Agriculture* in March, 1892, we have

three distinct faunæ represented in our State: The Boreal in the north, which includes our Northern Peninsula and the northern part of the Southern Peninsula; the Transition, which occupies nearly all of the Southern Peninsula and reaches slightly into Indiana and Ohio; and the Upper Sonoran, which though mostly to the south of us, reaches into the southeastern and southwestern corners of the State. Thus we meet in Michigan many birds peculiar to the far north, and others that dwell for the most part in the states and countries south of us, even reaching to or beyond the gulf. The first are illustrated in the Bohemian Wax-wing, the Spruce Partridge, the Canada Jay and the Pine Grosbeak; while the Summer Red Bird, the Mocking Bird and the Cardinal Red Bird illustrate the second group. The large lakes attract to us many birds that are usually maritime, like the gulls and the terns; while in southern Michigan, with its prairies and woodlands both widely distributed, we get the prairie fauna, illustrated in the Pinnated Grouse, as well as those birds which are most at home in the forests of wooded areas, like most of the thrushes and the warblers. This accounts for the very large list of woodland warblers which we find in our state.

The following birds have been reported from Michigan, but after as full inquiry as I am able to make, I do not feel warranted in admitting them to this list: *Sula bassana*, *Anhinga anhinga*, *Camptolaimus labradorius*, *Somateria mollissima boreallis*, *Ardea cœrulea*, *Nycticorax violaceus*, *Rallus longirostris crepitans*, *Tringa maritima*, *Pavoncella pugnax*, *Hæmatopus palliatus*, *Jacana spinosa*, *Dendragapus franklinii*, *Sayornis saya*, *Quiscalus quiscula*, *Acanthis hornemaniai exilipes*, *Milvulus tyrannus*, *Ammodramus leconteii*, *Dendroica dominica*, *Sitta pusilla*, *Parus carolinensis*, and *Sialia arctica*. There are a few more that seem to be of very doubtful occurrence in our State, but I do not feel warranted in excluding them, but have expressed doubt as to their belonging to our Michigan fauna in the text.

I have appended to this introduction, not only as complete a bibliography as my time and resources would permit, but also our "Michigan Bird Laws," which are usually excellent, and very wholesome in their influence.

In the text I have recorded such facts regarding the food habits of our birds as will enable every one to judge of the economic importance of the various species. Where possible, as it is in most cases, I have given the food habits of the entire family and omitted a mention of them in speaking of the separate species.

It will be observed that I have secured records from the southern part of the state from Messrs. Boies, Trombley and Simmons; from the southern central from Messrs. Purdy, Steere and Gibbs; from the central, from Messrs. Atkins, Brownell, White, Moseley, etc.; from the north central, from Professor Satterlee and others; from the northern extremity of the southern peninsula, from Messrs. Leach, White, Boise, Osborn, etc., and from the northern peninsula, from Messrs. White, Boise, Brewster, Kumlein, Kneeland and others. Thus the observations, most of them continued for a long series of years, and made by trained observers have covered pretty thoroughly the entire State.

PROTECTION OF GAME.

ACT 276, OF THE LAWS OF 1889.

2215h. SEC. 8. No person or persons shall kill or destroy, by any means whatever, or attempt to take or destroy, any wild turkey at any time except in the months of October and November of each year.

2215i. SEC. 9. No person or persons shall kill or destroy, by any means whatever, any woodcock or any partridge or ruffed grouse, save only from the first day of September in each year to the first day of January following.

2215j. SEC. 10. No person or persons shall kill or destroy, by any means whatever, any wild duck, wild goose, or other wild water fowl or snipe, save only from the first day of September in each year to the first day of January in the year following: *Provided, however,* That it shall be lawful to hunt and kill jack-snipe, red-headed, blue-bill, canvas-back, widgeon, pin-tail ducks and wild geese, between the first day of September in each year and the first day of May next following.

2215k. SEC. 11. The taking, carrying, or sending by any means whatever into or through any county of this state, any of the game or animals which have been killed or captured contrary to the provisions of this act, or the hide of such animals, shall be illegal, and is declared to be an offense against the provisions of this act, in any county in or through which such game, animals, or hides may be taken.

2215l. SEC. 12. No person shall kill, capture, or destroy, or attempt to kill, capture, or destroy any colin or quail, sometimes called Virginia Partridge, before the first day of November, 1894, and thereafter only during the months of November and December of each year.

2215m. SEC. 13. No person shall kill or attempt to kill any pinnated grouse or prairie chicken until the first day of September, 1894, and thereafter only in the months of September and October in each year.

2215n. SEC. 14. No person or persons shall at any time take or capture or attempt to take or capture any turkeys, partridge, prairie chicken, pigeon, wild duck, wild goose or quail by means of nets, snares, pits, pitfalls, or cages: *Provided,* That it shall be lawful to trap quail and take them alive for the purpose of keeping them alive through the winter and for no other purpose whatever. Said quail are not to be transported to other places, but must be again liberated in the same place where they were caught when the weather is suitable in the spring.

2215o. SEC. 15. No person shall, at any time, make use of a swivel or punt gun for the purpose of killing, or attempting to kill, any wild duck or other wild fowl.

2215p. SEC. 16. No person shall, at any time, in any manner, rob, or destroy, or

injure the nest of any wild duck or other wild fowl, nor in any manner kill or molest the same at night or at any other time on their nesting places.

2215q. SEC. 17. No person or persons shall sell or expose for sale, or have in his possession for the purpose of selling or exposing for sale, any of the kinds or species of birds or animals protected by this act after the expiration of eight days next succeeding the times limited and prescribed for the killing of any such birds or animals: *Provided, however,* That it shall be lawful to expose for sale and to sell any live quail for the purpose of preserving the same alive through the winter. And it shall also be lawful for any person to take alive, on his own premises, at any time and in any manner, any wood duck, teal duck, or mallard duck, or wild turkey, for the sole purpose of domestication or for scientific or breeding purposes, and possession and transportation alive of such wild fowl, so taken on one's own premises, may be had for any such purpose: *Provided,* That in any prosecution for violation of any of the provisions of this act, the person claiming the benefit of this section shall prove on the hearing or trial that in good faith he so took alive such wild fowl or fowls for one of the purposes specified in this section, and if prosecuted for transporting them, that he is in good faith transporting them alive for such purpose; and it shall not be necessary for the prosecution to aver or prove that the taking alive of any such wild fowl or fowls was not done for domestication or for scientific or for breeding purposes.

2215r. SEC. 18. Any person or persons violating any of the foregoing provisions of this act, shall be deemed guilty of a misdemeanor, and shall likewise be liable to a penalty of fifty dollars for each offense, and shall, on conviction thereof, stand committed to the common jail of the county until such penalty is paid: *Provided,* That such imprisonment shall not exceed thirty days.

2215s. SEC. 19. Any person who shall, at any time, within this state, kill any robin, nighthawk, whippoorwill, finch, thrush, lark, swallow, yellow bird, blue bird, brown thrasher, wren, martin, oriole, woodpecker, bobolink, or any song bird, or rob the nests of such birds, shall be deemed guilty of a misdemeanor, and on conviction thereof, shall be fined five dollars for each bird so killed, and for each nest so robbed, or confined in the county jail for ten days, or both such fine and imprisonment, in the discretion of the court.

2215t. SEC. 20. That any railroad, express company, or other common carriers, or any of their agents or servants or other persons having any of the above named birds or animals in their possession for transportation, or shall transport the same after the expiration of five days next succeeding the time limited and prescribed for the killing of such birds and animals, shall be punished by fine not less than ten dollars nor more than one hundred dollars: *Provided,* That no such penalty shall apply to the transportation of live quail which are to be kept alive throughout the winter, or to the transportation of such birds or animals in transit through the state from other states where it is lawful to kill such birds or animals at the time of such transportation.

2215u. SEC. 21. No person or persons shall use any gun or guns, or fire-arms to maim, kill or destroy any wild pigeon or pigeons, at or within five miles of the place or places where they are gathered in bodies for the purpose of brooding their young, known as pigeon nestings; and no person or persons shall use any gun or guns, or fire-arms, to maim, kill, or destroy, any wild pigeon or pigeons within their roostings, anywhere within the limits of this state; and no person or persons shall, with trap, snare, or net, or in any other manner, take, or attempt to take, kill or destroy, or attempt to kill or destroy, any wild pigeon or pigeons, at or within two miles of such nesting place

at any time from the beginning of the nesting until after the last hatching of such nesting, anywhere within the limits of this state; and every person offending against the provisions of this section, or any part thereof, shall be subject to a penalty of fifty dollars with costs of suit.

2215v. SEC. 22. A prosecution may be brought by any person in the name of the people of the state of Michigan, against any person or persons violating any of the provisions of this act before any justice of the peace of the county in which such violation is alleged to have taken place, or before any court of competent jurisdiction; and it is made the duty of all prosecuting attorneys in this state to see that the provisions of this act are enforced in their respective counties, and they shall prosecute all offenders, on receiving information of the violation of any of the provisions of this act; and it is made the duty of sheriffs, under sheriffs, deputy sheriffs, constables and police officers, to inform against and prosecute all persons who there is probable cause to believe are guilty of violating any of the provisions of this act.

2215w. SEC. 23. The state game and fish warden is hereby authorized to issue permits for the hunting and killing any kind of bird out of season, said bird being sought exclusively as specimens for scientific purposes.

2215x. SEC. 24. All prosecutions under the provisions of this act shall be commenced within one year from the time such offense was committed.

2215y. SEC. 25. All acts and parts of acts in conflict with the provisions of this act are hereby repealed.

DESTRUCTION OF ENGLISH SPARROWS.

2259a. 1885, p. 4, Feb. 17, act 4. SECTION 1. *The People of the State of Michigan enact*, That it shall be lawful to kill the birds commonly called "English sparrows."

SEC. 2. All acts heretofore passed, contrary to the provisions of the preceding section, are hereby repealed.

2259b. 1887, p. 29, Mar. 15, Act 29; Am. 1889, p. 171, June 17, Act 152. SECTION 1. *The People of the State of Michigan enact*, That every person, being an inhabitant of this state, who shall kill an English sparrow in any organized township, village or city in this state shall be entitled to receive a bounty of three cents for each sparrow thus killed, to be allowed and paid in the manner hereinafter provided.

2259c. Am. *Ib.* 1889. SEC. 2 Every person applying for such bounty shall take such sparrow, or the head thereof, in lots of not less than ten, to the clerk of the township, village or city within which such sparrow shall have been killed, who shall thereupon decide upon such application, and if satisfied of the correctness of such claim, shall issue a certificate stating the amount of bounty to which such applicant is entitled and deliver the same to said applicant, and shall destroy the heads of such sparrows.

2250d. Am. *Ib.* 1889. SEC. 3. Such certificate may be presented by the claimant or his agent to the county clerk of the county in which such sparrow or sparrows have been killed, who shall thereupon draw a warrant for the amount on the treasurer of said county, and said treasurer shall, upon presentation of said warrant, pay the same from the general or contingent fund of said county.

GAME AND FISH WARDEN.

2197r. 1887, p. 27, Mar. 15, Act. 28. SECTION 1. *The People of the State of Michigan enact*, That it shall be the duty of the Governor to appoint some person, a resident of this state, game and fish warden. Said warden shall hold his office for four years, or until his successor has been appointed and qualified, unless removed for cause by the Governor; he shall receive a salary of twelve hundred dollars per annum, payable monthly, and shall also be reimbursed his actual expenses necessarily incurred by him while engaged in the performance of his duties, to be paid on the warrant of the auditor general, monthly, on the approval of his vouchers therefor.

2197s. SEC. 2. It shall be the duty of the said game and fish warden to enforce the statutes of this state for the preservation of moose, wapiti, deer, birds and fish, and to enforce all other laws of this state for the protection and propagation of birds, game and fish, now in force, or hereinafter enacted, and to bring or cause to be brought actions and proceedings in the name of the people of this state to punish any parties for the violation of said statutes and laws. Such actions and proceedings may be brought in the name of the people, in the like cases, in the same courts, and under the same circumstances as they may now or at any time hereafter be brought by any individual or by the prosecuting attorneys of the several counties under and by virtue of any laws now existing or hereafter enacted.

2197t. SEC. 3. Said warden may make complaint and cause proceedings to be commenced against any person for the violation of any of the laws for the protection or propagation of game or fish without the sanction of the prosecuting attorney of the county in which such proceedings are commenced, and in such case he shall not be obliged to furnish security for cost.

2197u. SEC. 4. Said game and fish warden shall have the same power to serve criminal process as sheriffs, and shall have the same right as sheriffs, to require aid in executing such process. Said warden may arrest, without warrant, any person caught by him in the act of violating any of the aforesaid laws for the protection or propagation of birds, game or fish, and take such person forthwith before a justice of the peace, or other magistrate having jurisdiction, who shall proceed without delay to hear, try and determine the matter, and the same proceedings shall be had as near as may be, as in other criminal matters triable before a justice of the peace, or other magistrate having jurisdiction. Such arrests may be made on Sunday, in which case the person arrested shall be taken before a justice of the peace, or other magistrate having jurisdiction, and proceeded against as soon as may be, on a week day following the arrest.

2197v. SEC. 5. Said warden shall, in the month of December in each year, file in the office of the auditor general, an account in writing, stating the days and parts of days spent in the discharge of his duty, the kind of service rendered and the places where rendered, and the expenses paid or incurred in the time of the discharge of such duties, which account shall be verified by the oath of said warden stating that the same is correct and true in every particular.

2197w. SEC. 6. Said warden shall, at the close of each calendar month, file with the secretary of state a report in writing, and in detail, stating the service performed by him during the last preceding month, including an account of the suits commenced at his instance, as herein provided for, the disposition made of the same, the result of any brought to trial, and the condition of any undisposed of, and any other particulars he may think proper, and no payment for services performed or expenses paid by said warden shall be made until he shall present to the auditor general, in addition to the usual oath of performance and payment, a certificate from the said secretary that he has made the report required by this act. The secretary of state shall cause the monthly reports of said warden, or so much thereof as may be of interest to the public, to be transmitted annually to the legislature when in session.

2197x. SEC. 7. The said game and fish warden shall have power to appoint a deputy or deputies, not exceeding three, in each county, who shall be residents thereof; said deputies shall have the same powers in their respective counties as herein provided for the warden himself, subject to the supervision and control of the warden. Said deputy warden or wardens shall receive such compensation as the board of supervisors of the counties in which such deputy warden or wardens reside may allow and provide for, except in the county of Wayne, where such compensation shall be fixed by the board of county auditors.

GENERAL LITERATURE.

Coues, Dr. Elliott, 1890—Key to North American Birds. Very fully illustrated. This work is very complete and admirable, an excellent manual in my judgment, for either the beginner or advanced student. The complete anatomy, full descriptions, excellent artificial key, and admirable illustrations, make it indispensable to every student of ornithology. The nomenclature and arrangement are not the latest, but an appendix corrects this, in a manner that is very convenient and desirable. Price \$7.50. Estes & Lauriat, Boston, Mass.

Ridgway, Robert, 1889—Manual of North American Birds. This is simply a manual, and is very excellent for one who wishes simply to study systematic ornithology. The nomenclature and arrangement are recent. Price \$7.50. J. B. Lippencott, Philadelphia, Pa.

Jordan, Dr. David Starr, 1888—Manual of the Vertebrates of the Northern United States. This is very brief, but valuable to every zoölogist. This succinct key helps us to identify all vertebrate animals, from fish to mammals, inclusive. It is very satisfactory, considering its size. All three of the above works refer more or less to Michigan birds. Price \$2.50. Jasen McClurg & Co., Chicago, Ill.

Davie, Oliver, 1889—Nests and Eggs of North American Birds. A few illustrations. This work is very full and accurate, and very valuable to one wishing to study the nesting habits of birds. There are many references to Michigan species. Price \$1.75. Hann & Adair, Columbus, Ohio.

Standard Natural History of the United States, Vol. IV. This large work is almost indispensable to the working naturalist. It is to be regretted that its size and cost place it beyond the reach of many. It is fully illustrated and embraces the ornithology of the whole world. It also treats of all other classes of animals, and is very complete. S. E. Cassino & Co., Boston, Mass.

The Auk. A very excellent monthly magazine, devoted to ornithology; the organ of the American Ornithologists' Union and the successor to the Bulletin of the Nuttall Ornithological Club. Its editors and contributors are among the ablest ornithologists in the country or the world. The magazine is a credit to our science and literature. Price \$3.00 a year. L. S. Foster, 35 Pine St., New York City.

The Ornithologist and Oölogist. This is a much less pretentious journal than the Auk, but is very interesting and valuable to the student of birds. Like the last mentioned, this contains much regarding our Michigan birds. It is especially valuable to the young ornithologist. Price \$1.00. Frank Blake Webster Co., Hyde Park, Mass.

Forest and Stream. This weekly journal is more of a sportsman's paper, but contains much that is helpful to the scientist. Several excellent lists of Michigan birds have appeared in this journal. Price \$4.00 per year. Forest and Stream Publishing Co., 318 Broadway, New York City.

The Oölogist. This valuable journal has already passed to its tenth volume. It is more than its name implies as it treats of general ornithology as much as of eggs. It has, like all of the above, many able contributors from Michigan. Price 50c per year. Frank H. Lattin, Albion, N. Y.

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Allen, J. A., 1879. "Gibbs' List of Birds of Michigan," review of, *Bull. Nutt. Orn. Club*, Vol. V, p. 110.

Allen, J. A., 1880. "Steere's Birds of Ann Arbor," review of, *Bull. Nutt. Orn. Club*, Vol. VI, p. 46.

Anonymous, 1880. "Wild Pigeons in Michigan," *Scientific American*, Vol. 42, pp. 343-344. Notes on breeding and migrations, copied from the *Detroit Post*.

Anonymous, 1887. "The Evening Grosbeak at Saginaw, Michigan," *Forest and Stream*, Vol. XXXIV, p. 143.

Anonymous, 1892. "Capture of a Pelican near Grand Rapids," *Ornithologist and Oölogist*, Vol. XVII, p. 143. Copied from Grand Rapids paper. The bird was exhibited by G. K. Hurlburt.

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*A few of these references I have not been able to verify, and so there may be an occasional error.

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Cupidonia cupido," *ibid.*, March 24, 1871. The following species were also described by Mr. Hughes in the Free Press for 1871, special date unknown: The American Quail, Field Sparrow, the smaller Thrushes, Brown Thrush, Wilson's Snipe, American Woodcock, Wood Thrush, and Song Sparrow. This whole series of articles is very excellent.

Hughes, D. Darwin, 1870. "The Wild Turkey, Its Origin and Habits," *The Moderator* (Michigan school paper, published at Grand Rapids). Vol. IV, No. 19, p. 373. This is a reprint of article in Free Press for Jan. 24, 1870.

Hughes, D. Darwin, 1872. "Michigan Birds, Their Relation to Agriculture," Report of the Michigan Pomological Society, 1872, p. 442. This discusses our bird friends and includes the Hawks and others which are often condemned.

Hughes, Walter H, 1871. "Arrival and Departure of the Snow Bunting, *Plectrophanes nivalis* (Linn.) Meyers, from 1867 to 1871," *Naturalist and Fancier* (Grand Rapids), Vol. 1, No. 11, 1877. Extract from the notes of his father, Hon. D. D. Hughes; "*Chrysomitris tristis*" Bp., *ibid.*, Vol. II, No. 1, 1878; "The Michigan Plover," *ibid.*, Vol. II, No. 3, 1878, a reprint of an article by Hon. D. D. Hughes.

Hughes, Walter H., 1878. "Birds of Michigan," *Valley Naturalist* (St. Louis, Mo.), Vol. I, 1878, pp. 11, 14, 15, 34 and 35. This is an annotated list.

Judson, R. F., 1892. "Brief Notes," *Ornithologist and Oölogist*, Vol. XVII, p. 9. Notes Golden Eagle taken in Kalamazoo, Michigan, Jan. 1, 1892.

K. D. H., 1886. "The Bald Eagle at Sturgis, Michigan," *Ornithologist and Oölogist* Vol. IX, p. 75.

Kneeland, Dr. S. Jr., 1857. "Birds of Keweenaw Point," *Boston Society of Natural History*. Vol. VI, 1857, pp. 231 to 241 inclusive. This list was made as the result of one year's study during a residence at Portage Lake and is undoubtedly very accurate and reliable. It includes 147 species.

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Lawrence, Robt. B. "Brant in Michigan," *Forest and Stream*, Vol. 32, p. 316.

Lockwood, E. A., 1891. "Snowy Owls and Swans taken at South Haven." Ten owls and two swans taken in December. *American Field*, Vol. XXVII.

Lucius, E. Torrey, 1883. "The English Sparrow," *Agricultural World*, Grand Rapids, Vol. IX, No. 4.

McBride, Herbert W., 1893. Letter, *Ornithologist and Oölogist*, Vol. XXIII, 1893, p. 47. Notes breeding of Rose-breasted Grosbeak in Berrien county, Mich.

Maris, Willard L., 1891. "The Rose-breasted Grosbeak in Washtenaw county, Oölogist, Vol. XVI, p. 106.

Merriam, Dr. C. Hart, 1883. "Kirtland's Warbler from the Straits of Mackinaw," *The Auk*, Vol. I, p. 376. Mentions several birds received from Wm. Marshall, keeper of lighthouse at Spectacle Reef, Michigan, killed night of May 21, 1883. Among them was a male, Kirtland's Warbler.

Miles, Dr. M., 1861. "Catalogue of Birds of Michigan," *Geological Survey of Michi-*

gan, pp. 222 to 232 inclusive. There are 203 species embraced in this list, which illustrates the characteristic accuracy of its author.

Milliken, W. E., 1892. "Nesting of a Chimney Swift in a Freight Car," *Ornithologist and Oölogist*, Vol. XVII, p. 159; "The Rose-breasted Grosbeak in Michigan," Vol. XVII, p. 152. Reported quite common in Kent county.

Mills, M. B., 1891. Set of ten eggs from White-breasted Nuthatch, taken at Macon, Michigan," *Ornithologist and Oölogist*, Vol. XVI, p. 157.

M., 1867. "Nesting of Pigeons at Shelby, Michigan," *Forest and Stream*, Vol. XIV, pp. 231-232. Describes a pigeon roost.

Moseley, E. L., 1881. "Notes on Winter Birds of Michigan," *Forest and Stream*, Vol. XXVIII, p. 4. Six species are mentioned.

Moseley, E. L., 1885. "Winter Woodpeckers of Michigan," *Forest and Stream*, Vol. XXXII, p. 63.

Moseley, E. L., 1887. "List of Michigan Birds in the Museum of the Kent Scientific Institute, Grand Rapids, Michigan." This list embraces 231 species, but not all are Michigan birds. This is a pamphlet of 32 pages and was published by the Democrat Company of Grand Rapids.

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Oldfield, W. A., 1891. "Breeding of Rose-breasted Grosbeak and Red-backed Sandpiper in Sanilac County, Michigan," *Ornithologist and Oölogist*, Vol. XVI, p. 144.

Purdie, H. A., 1879. "Record and Additional Specimens of the White-throated Warbler," *Bull. Nutt. Orn. Club*, Vol. IV, No. 3, 1879; "Another Kirtland's Warbler, *Dendroica kirtlandi*." Mentions two of the nine specimens then known as from Michigan, having been taken by Adolphe B. Covert, *ibid.*, p. 105.

Purdy, J. B., 1889. "Nesting of the Barred Owl and Great Horned Owl at Plymouth, Michigan," *Ornithologist and Oölogist*, Vol. XIV, p. 54; "Curious Nesting Traits of Birds," *ibid.*, p. 92; "Nests that Perished in the Storm," *ibid.*, p. 110.

Purdy, J. B., 1890. "Horned or Prairie Horned Lark, Which is it?" *Ornithologist and Oölogist*, Vol. XV, pp. 138 and 139.

Purdy, J. B., 1891. "Late Nesting of the Wood Pewee," *Ornithologist and Oölogist*, Vol. XVI, p. 28; "Nesting of the Bob White, August 30, 1891," *ibid.*, p. 157.

Purdy, J. B., 1892. "Late Nesting of the Great Horned Owl," *Ornithologist and Oölogist*, Vol. XVII, p. 57. Nest found March 20, 1892.

Purdy, James B., 1893. "Domestication of the Canada Goose," *Ornithologist and Oölogist*, Vol. XVIII, 1893, pp. 4-5.

Raeder, S., 1891. "Correspondence from *Ornithologist and Oölogist*," Vol. XVI, p. 64. Records taking 21 sets of eggs of Cardinal in Ohio, in 1885; also notes food habits of the crow. A crow darted down and carried off a young chicken.

Reed, Leon, 1886. "Supposed Breeding of the Barred Owl at White Pigeon, Michigan," *Ornithologist and Oölogist*, Vol. XI, p. 100.

Ridgway, Robt., 1879. "Note on *Helminthophaga gunnii* Gibbs," *Bull. Nutt. Orn.*, Vol. IV, No. 4, 1879.

Ridgway, Dr. Robert, 1883. "*Helminthophila leucobronchialis*," *The Auk*, Vol. I, pp. 359 and 363. Notes a specimen taken by Gunn, Ottawa county, May 25, 1879; "Another Kirtland's Warbler from Michigan," *ibid.*, p. 389. Specimen from collection of N. Y. Greene, Battle Creek, Michigan, May 11, 1883.

Ridgway, Dr. Robert, 1889. "Natural History Survey of Illinois," *State Laboratory*

of Natural History, S. A. Forbes, director; Descriptive Catalogue, Springfield, Ill., 1889, illustrated. Refers to many Michigan birds.

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Satterlee, Prof. James, 1886. "The Cherry Bird Condemned," State Horticultural Society, 1886, p. 97.

Saunders, Prof. Wm., 1883. "Condemns the Robin, Cherry Bird and English Sparrow," Report of Michigan Horticultural Society, 1883, p. 164.

Schoolcraft, Henry R., 1834. "A Supposed New Bird," Historical and Scientific Sketches of Michigan. Discovered in Michigan in the forests at the foot of Lake Superior. The bird was identified by the New York Scientific Association as the Evening Grosbeak, *Hesperiphona vespertina* (Coop.) Bp.

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Spicer, Samuel, 1889. "Notes from Goodrich, Genesee County, Michigan," Ornithologist and Oölogist, Vol. XIV, p. 43. Notes some rare birds, Robin building in a barn, and nest of Goldfinch taken Sept. 28.

Steere, Dr. J. B., 1880. List of Birds of Michigan, Report of State Pomological Society, 1880, pp. 115 to 124 inclusive. The birds are classified according to time of appearance into summer sojourners, winter residents, migrants or transients, and those that live here throughout the year. The list embraces 265 species.

Steere, Dr. J. B., 1880. "Migration of Birds," Report of State Pomological Society, 1880, p. 115. This article divides birds into groups, as to time of residence in the State and embraces a list of 265 species.

Steere, Dr. J. B., 1880. "List of the Mammals and Birds of Ann Arbor and Vicinity," local paper, Ann Arbor, Michigan. Annotated list of 111 species.

Strang, J. J., 1855. "Natural History of Beaver Islands, Michigan," ninth annual report Smithsonian Institution (1854), 1855, pp. 282 to 288. A brief mention of three lines is made of birds.

Sudworth, Geo. B., 1878. "Polioptila cærulea (Linn.) Scl.," Naturalist and Fancier, (Grand Rapids), Vol. II, No. 3, 1878.

Swales, B. H., 1891. "Notes on Birds at Detroit," Ornithologist and Oölogist, Vol. XVI, p. 144. Nests found of Red-headed Woodpecker and Woodcock, the former with eight eggs, the latter with four; "Nesting Notes in the Vicinity of Detroit," *ibid.*, p. 148-9. Dates and nesting habits of Michigan birds; "Notes of the Season," *ibid.*, p. 159.

Swales, B. H., 1892. "Brief Notes," Ornithologist and Oölogist, Vol. XVII, p. 75. Gives notes of the winter; "Rose-breasted Grosbeak in Wayne County," *ibid.*, p. 64. "American Long-eared Owl Breeding in Wayne County, Michigan," *ibid.*, p. 75; "Brief Notes," *ibid.*, p. 79; Bald Eagle at Detroit April 4, and Eggs of Red-shouldered Hawk taken April 13, "Nesting of Virginia Rail at St. Clair Flats," *ibid.*, p. 103; "Nesting of Phoebe," *ibid.*, p. 111; "Albino Eggs of the Long-billed Marsh Wren," *ibid.*, p. 121; "Nesting of the Field Sparrow in Michigan. found Nesting August 2," *ibid.*, p. 159; "Notes on Tame Red-shouldered Hawk," *ibid.*, p. 159.

Trombley, Jerome, 1882. "Swallow-tailed Kite taken in Southern Michigan," Bull. Nutt. Orn. Club, Vol. VII, p. 250. Notes a male and female near Petersburg, June 19, 1882.

Wade, Joseph M., 1880. "Orange-crowned Warbler," Oölogist, Vol. V, 1880. Note of capture in Michigan.

Washburn, F. L. "Recent Captures of Kirtland's Warbler in Michigan and Other Notes," The Auk, Vol. VI, pp. 279 to 280.

Waters, Dudley E., 1883. "The English Sparrow, *Passer domesticus*," Agricultural World (Grand Rapids), Vol. IX, No. 4.

Weed, Prof. C. M., 1883. "Food Habits of Young Birds," Report of the State Board of Agriculture 1883, p. 439. This is a part of a thesis for degree of Master of Science and shows the value of birds as insect destroyers.

Weed, Prof. Clarence M., 1884. "The Food Relations of Birds, Frogs and Toads," Report Michigan Horticultural Society, 1884, p. 98. This gives the percentage of insect food of many young birds, determined by actual dissection. Embraced in thesis for the degree of Master of Science.

Wolcott, Robt. H., 1884. "Notes from Grand Rapids, Michigan," Ornithologist and Oölogist, Vol. IX, p. 62. Refers to early spring birds.

Wood, A. H., 1884. "The Black-backed Woodpecker," Ornithologist and Oölogist, Vol. IX, p. 62. Species noted 30 miles north of Mackinaw.

White, S. E., 1890. "Brown Creeper at Grand Rapids, Michigan," Ornithologist and Oölogist Vol. XV, pp. 101-102; "Favors the Old Names," *ibid.*, p. 137; "Two Days in the Field," *ibid.*, pp. 173-174. Notes on the birds of Mackinac Island.

White, S. E., 1891. "The Picidæ of Michigan," Ornithologist and Oölogist XVI, pp. 56-59; "Stupid Bird Laws of Michigan," *ibid.*, p. 92; "A Pleasant Disappointment," *ibid.*, pp. 100-101. An account of a visit to a heronry and other bird notes; "Turkey Buzzard Breeding in Michigan," *ibid.*, p. 141. Notes the breeding of this and other species along the Kalamazoo river; "Winter Birds with Dates," *ibid.*, p. 149.

White, S. E., 1892. "The Olive-backed Thrush," Ornithologist and Oölogist, Vol. XVII, pp. 114-115. Notes from Kent county and Mackinac Island.

BIRDS OF MICHIGAN.

ORDER PYGPODES. DIVING BIRDS.

SUBORDER PODICIPEDES. GREBES.

FAMILY PODICIPIDÆ. GREBES; HELL-DIVERS.

These curious birds are mostly confined to the water and are great divers said to dodge even the rifle ball.

GENUS ÆCHMOPHORUS COUES.

1-1-(845). *Æchmophorus occidentalis* (Lawr.). WESTERN GREBE.

Very rare; probably accidental; one specimen killed near Lansing and now in the collection of Mr. C. H. Davis; one specimen reported in catalogue of "Kent Scientific Institute" by E. L. Mosley; included in "Butler's Birds of Indiana."

GENUS COLYMBUS LINN.

2-2-(847). *Colymbus holboëllii* (Reinh.). RED-NECKED GREBE; HOLBÆLL'S GREBE.

Very rare; migrant; we have one from Saginaw bay; "one taken by Prof. Smith at Hillsdale, in the spring of 1890, and now in the Hillsdale College museum" (F. M. Falconer); taken by S. E. White off Mackinac Island; "taken occasionally at Sault Ste. Marie" (C. S. Osborn). This species is included in the list of Fox and in that of Dr. A. Sager of 1839.

3-3-(848). *Colymbus auritus* Linn. HORNED GREBE.

Common throughout the state; "one taken Feb. 26, 1892, snow bound in Pittsford, township, Hillsdale county" (A. H. Boies). Fall and spring; migrant; occasional in summer; "northern U. S." (Jordan); "Iron Mountain, May 18, 1890" (E. E. Brewster); "Keweenaw Point," (Kneeland); breeds; nests in May, on bogs in marshes; "breeds in Wayne county" (B. W. Swales); a fine male was taken by J. B. Purdy at Plymouth; "rare transient in Kalamazoo county in spring and autumn" (Dr. M. Gibbs); "rivers of Michigan" (Davie's Nests and Eggs of North American Birds, p. 3); eggs, five to nine, immaculate, yellowish, smooth; "breeds among the lakes and marshes of northern Indiana in considerable numbers" (Butler's Birds of Indiana).

GENUS *PODILYMBUS* LESS.

4-6-(852). *Podilymbus podiceps* (Linn.). *PIED-BILLED GREBE; CAROLINA GREBE; HELL-DIVER; WATER-WITCH; DIPPER; DIDAPPER; DABCHICK.

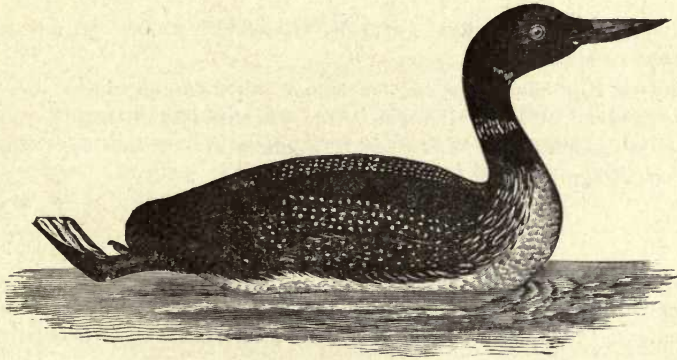
Very common "throughout the state and easily shot by the skillful hunter" (A. H. Boies); April till fall; "Monroe county" (Jerome Trombley); "Mackinac Island" (S. E. White); "common at Iron Mountain, Dickinson county," (E. E. Brewster); "Keweenaw Point" (Kneeland); breeds; nests as in last species; "found breeding on St. Clair Flats" (W. H. Collins, Oölogist, Vol. V. p. 19); "Geo. Sprague, of Kalamazoo, secured thirty-two eggs in a half day, about ponds and lakes" (Dr. M. Gibbs); eggs, five to nine, rough, dirty yellowish white. The nest of this species often floats. This queer tailless bird is the cause of many stories told by hunters. They report that it will dodge a bullet as the most skillful hunter seldom takes one. It certainly might and generally would dive even after receiving a mortal wound. Prof. James Satterlee, Greenville, writes me: "This comes from the habit of diving so quickly after the flash of the gun. I shot five in one day with my rifle." Geo. D. Sones writes: "They dive at sight of flash, and so escape the bullet," as he has actually observed many times.

SUBORDER CEPPHI. LOONS AND AUKS.

FAMILY URINATORIDÆ. LOONS.

These are pre-eminent water birds, noted for swimming and diving.

GENUS *URINATOR* CUV.



Loon.

5-7 (840). *Urinator imber* (Gunn.). *Loon; Great Northern Diver.

Very abundant in spring, summer and autumn; throughout the state; "Grand Traverse Co." (Dr. M. L. Leach); "nests have been found in Washtenaw Co. on muskrat houses about marshy lakes." (L. W. Watkins); "Common on Lake Erie and Raisin River" (Jerome Trombley); "Mackinac Island" (S. E. White); "Common at Iron Mountain" (E. E. Brewster); "Keweenaw Point" (Kneeland); breeds plenteously; nests in May, in marshes, on large masses of grass, sedges, etc.; eggs two, very rarely three, elongate, olive brown or drab, spotted with darker, often almost black markings; seen

*All species starred, are reported from Locke, Ingham County, by the late Dr. H. A. Atkins.



in winter; "will carry their young on their backs, even when flying from one lake to another for two miles" (A. H. Whitehead). Dr. Atkins took several of these birds in March and April. I have taken them, or seen them, in nearly all seasons of the year.

6-9-(842). *Urinator arcticus* (Linn.). BLACK-THROATED LOON; BLACK-THROATED DIVER.

Exceedingly rare; Lake Michigan; winter; "occasionally on Lake Michigan" (Gibbs' Birds of Mich.); "Upper Peninsula" (A. H. Boies); "Keweenaw Point" (Kneeland).

7-11-(844). *Urinator lumme* (Gunn.). RED-THROATED LOON; RED-THROATED DIVER.

Rather common; "throughout the state, have taken several alive on snow in winter" (A. H. Boies); winter; migrates north in spring; found on lakes and rivers in all parts of the state; "almost a yearly visitor in Kalamazoo Co." (Dr. M. Gibbs); "Keweenaw Point" (Kneeland); "found breeding at Green Bay, Wis." (Prof. Ludwig Kumlein); "breeds in Arctic regions" (Dr. A. K. Fisher).

FAMILY ALCIDÆ. THE AUKS.

These curious water birds are specially marine and it is doubtful if they belong to our fauna; if ever seen here they are undoubtedly wanderers.

GENUS FRATERCULA BRISS.

8-13-(854). *Fratercula arctica* (Linn.). COMMON PUFFIN.

"Rare straggler" (Gibbs' Birds of Michigan); "have never heard of one on Lake Superior" (C. S. Osborn). I think this of doubtful occurrence in Michigan.

GENUS SYNTHLIBORAMPUS BRANDT.

9-21-(864). *Synthliboramphus antiquus* (Gmel). ANCIENT MURRELET; BLACK-THROATED MURRELET.

Prof. Ludwig Kumlein writes me that he has taken one specimen at Lake Koshkonong, Wis., and one on Lake Michigan. One was shot late in October by Rev. G. E. Gordon on Lake Koshkonong, Wis. (Geo. B. Sennett in *The Auk* for January, 1884)¹ Coues says one straggler taken in Wisconsin.

GENUS CEPPHUS PALL.

10-27-(871). *Cephus grylle* (Linn.). BLACK GUILLEMOT.

"Not rare in Upper Peninsula, occasional seasons" (Dr. M. Gibbs); "may occur as a rare straggler" (Prof. Ludwig Kumlein); "very rare even as an accidental visitor" (C. S. Osborn).

GENUS URIA BRISS.

11-30-(874). *Uria troile* (Linn.). MURRE.

"Occasionally taken on Lake Superior" (Gibbs' Birds of Michigan). I think this a doubtful Michigan bird; "so do I—also all the other Alcidae" (Robt. Ridgway).

GENUS ALCA LINN.

12-32-(877). *Alca torda* Linn. RAZOR-BILLED AUK.

"Irregular visitor to Northern Peninsula" (Gibbs' Birds of Michigan); "I have heard of one captured, but even this is not well authenticated" (C. S. Osborn); "the

chances are one hundred to one against the five preceding species appearing in Michigan even as wanderers, especially is this true of *Fraterecula arctica*" (Prof. J. A. Allen); "I concur with Prof. Allen" (A. H. Boies).

GENUS ALLE LINK.

13-34-(863). *Alle alle* (Linn.). SEA DOVE; DOVEKIE, ALLE.

The late W. H. Collins reported killing one on Detroit River, Nov. 30, 1881, (O. and O. 4, Vol. VII, p. 111).

ORDER LONGIPENNES. LONG-WINGED SWIMMERS.

FAMILY STERCORARIIDÆ. SKUAS AND JAEGER.

GENUS STERCORARIUS BRISS.

14-36-(765). *Stercorarius pomarinus* (Temm.). POMARINE JAEGER.

Very rare; one taken on Beaver Island, Michigan, by Prof. Ludwig Kumlein. Reported (Butler's Birds of Ind.) from Lake Michigan; E. L. Mosley reports a specimen shot at Sandusky, O., Oct., 1889; the late W. H. Collins reported one specimen taken on Detroit River, and now in the collection of the Museum of Comparative Zoölogy, Cambridge Massachusetts.

FAMILY LARIDÆ. GULLS AND TERNS.

More common near the Great Lakes; feed on fish and meat; the larger gulls often accompany vessels.

SUBFAMILY LARINÆ. GULLS.

GENUS RISSA LEACH.

15-40-(782). *Rissa tridactyla* (Linn.). KITTIWAKE; KITTIWAKE GULL.

Rare accidental visitor" (Gibbs' Birds of Michigan); "arctic regions south in winter to New York" (Jordan). I think this a doubtful Michigan species. Dr. Gibbs informs me that it is reported from Mackinac Island.

GENUS LARUS LINN.

16-42-(768). *Larus glaucus* Brunn. GLAUCUS GULL; ICE GULL.

Rare; "Upper Peninsula and one taken at Klinger's Lake, St. Joseph county, 1892" (A. H. Boies); "Lake Michigan" (Butler's Birds of Ind.); Prof. Ludwig Kumlein reports taking several specimens at Milwaukee, Wis.; "south in winter to New York" (Jordan); embraced in the University list at Ann Arbor, and in the lists of Miles, Sager and Boies.

17-43-(769). *Larus leucopterus* Faber. ICELAND GULL; WHITE-WINGED GULL.

Rare; "Lake Michigan, winter" (Butler's Birds of Ind.); about all the great lakes; "rare on Lake Erie" (Jerome Trombley); "south to New York" (Jordan).

18-47-(771). *Larus marinus* Linn. GREAT BLACK-BACKED GULL.

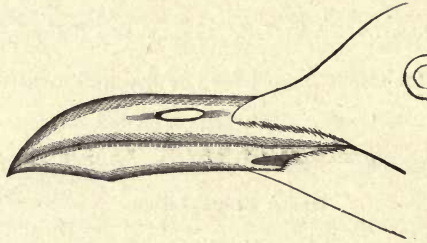
"Kent county, March 28, 1889, and Mackinac Island" (S. E. White); "winter visitant on Lake Michigan Dr. Velie, Ridgway's list of birds of Ill., 1874" (Gibbs' Birds of Michigan).

19-51a-(773). *Larus argentatus smithsonianus* Coues. AMERICAN HERRING GULL;
SMITHSONIAN GULL.

Very abundant; throughout the state; migrant and winter resident; breeds; "nests abundantly on Isle Royal, Michigan" (Frank S. Daggett in O. and O., Vol. XV, p. 99); "common in January on Saginaw Bay" (N. A. Eddy in O. and O., Vol. IX, p. 5); "nests very extensively on hummocks on the ground at Gull Island, east of Escanaba," (L. W. Watkins); "breeds at Mackinac Island, and is common on the Grand river at Grand Rapids" (S. E. White); "common on Lake Erie" (Jerome Trombley); "Keweenaw Point" (Kneeland). This and Bonaparte's Gull are often seen as far inland as Lansing. They are common along all the great lakes. C. S. Osborn writes me that Gulls deposit barrels of eggs on the rocky island of Georgian Bay. These eggs are gathered by thousands and eaten by fishermen, or used in manufacturing eggine or egg albumen. The number is simply marvelous. See interesting article by Frank S. Daggett in O. and O., Vol XV, 1890, p. 99. It is stated that some of the very numerous nests at Isle Royale were on the unstable icebergs.

20-54-(778). *Larus delawarensis* Ord. RING-BILLED GULL.

Common throughout the state; migrant and winter resident; A. H. Boies says this is a summer resident; "Kent Co. and Mackinac Island" (S. E. White); "frequently seen in spring" (Jerome Trombley); "breeds in Northern Peninsula" (Prof. Ludwig Kumlein); "all United States south to Mexico" (Jordan).



Laughing Gull.

21-58-(786). *Larus atricilla* Linn. LAUGHING GULL; BLACK-HEADED GULL.

"Very abundant on the Great Lakes, probably breeds in the Northern Peninsula" (Gibbs' Birds of Michigan); very rare; "north if it occur at all" (Dr. A. K. Fisher); "fairly common" (Prof. Ludwig Kumlein); "common migrant on Lake Erie" (Jerome Trombley); "one killed in Washtenaw Co. in 1884" (L. W. Watkins). This species is given in Dr. Sager's list of 1839.

22-59-(787). *Larus franklinii* Sw. and Rich. FRANKLIN'S GULL.

"Not rare on Lake Michigan during winter and spring" (Gibbs' Birds of Michigan); "occasional migrant and rare winter visitor in Indiana" (Butler's Birds of Ind.); "chiefly west of the Mississippi" (Jordan).

23-60-(788). *Larus philadelphia* (Ord.). BONAPARTE'S GULL; BONAPARTE'S ROSY GULL.

Rather common in spring and fall; "throughout the state" (A. H. Boies); often seen inland; frequently killed at Lansing; "common at Bay City in Jan." (N. A. Eddy in O. and O., Vol. IX, p. 5); taken in Oakland Co., by J. B. Purdy; "about our inland lakes" (W. C. Brownell); "rather rare in Kalamazoo county" (Dr. M. Gibbs); found breeding on St. Clair Flats by W. H. Collins (Bull. Nutt. O. Club, Vol. V, p. 61); "occa-

sional in spring in Monroe Co." (Jerome Trombley); "Keweenaw Point" (Kneeland); "breed near Escanaba" (Prof. Ludwig Kumlein).

GENUS XEMA LEACH.

24-62-(790). *Xema sabinii* (Sab.). SABINE'S GULL; FORKED-TAILED GULL.

"Lake Michigan" (Butler's Birds of Ind.); "south to New York" (Jordan).

· SUBFAMILY STERNINÆ. TERNS; SEA SWALLOWS.

GENUS GELOCHELIDON BREHM.

25-63-(792). *Gelochelidon nilotica* (Hasselq.). GULL-BILLED TERN; MARSH TERN.

Rather common; "a straggler and rather rare in Kalamazoo county" (Dr M. Gibbs); Great Lakes; often abundant on Lake Michigan; "often common on Lake Erie" (Jerome Trombley); "Ohio, Illinois and Michigan" (Butler's Birds of Indiana p. 108); "breeds on St. Clair Flats" (A. B. Covert); N. A. Eddy has found it common on Saginaw river in January.

GENUS STERNA LINN.

26-64-(793). *Sterna tschegrava* Lepech. CASPIAN TERN.

Very rare; probably a straggler; one taken by the late W. H. Collins of Detroit is now in the National Museum; Great Lakes; winter; "taken repeatedly at Mackinac Island, identification certain" (S. E. White); said to breed on islands of Lake Michigan (see Davie's Nests and Eggs of North American Birds, p. 33). Prof. Ludwig Kumlein has taken several sets of eggs at Green Bay, Wisconsin.

27-65-(794). *Sterna maxima* Bodd. ROYAL TERN; CAYENNE TERN.

Rare; spring and summer; Lake Michigan; "rare summer visitant, occasionally taken on Lake Michigan in late spring" (Gibbs' Birds of Michigan); common at Mackinac Island" (S. E. White); "Upper Peninsula" (A. H. Boies); see Butler's Birds of Indiana, p. 108.

28-69-(798). *Sterna forsteri* Nutt. FOSTER'S TERN.

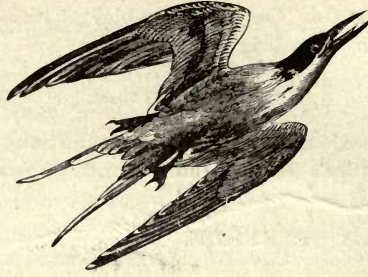
Not common; spring, summer and autumn; "Hillsdale county" (A. H. Boies); "breeds on St. Clair Flats" (A. B. Covert); "breeds freely in Upper Peninsula" (Prof. Ludwig Kumlein); "breeds on shore of Lake Superior" (H. Nehrling).

29-70-(797). *Sterna hirando* Linn. COMMON TERN; WILSON'S TERN; SEA SWALLOW.

Common; migrant; "Saginaw Bay" (N. A. Eddy); "common on Lake Erie" (Jerome Trombley); "breeds on St. Clair Flats" (A. B. Covert); "throughout the summer in northern Indiana, where it may breed" (Butler's Birds of Indiana); "Keweenaw Point" (Kneeland); "breeds in Upper Peninsula" (Prof. Ludwig Kumlein); nests on ground; eggs four, very variable, often pinkish drab, spotted with brown or gray; nests rude. This bird is embraced in Dr. A. Sager's list of 1839.

30-71-(799). *Sterna paradisæa* Brunn. ARCTIC TERN.

"Not a common migrant" (Gibbs' Birds of Michigan); "south to New York" (Jordan); "sometimes breeds at Lake Koshkonong, Wis." (Prof. Ludwig Kumlein).



Roseate Tern.

31-72-(800). *Sterna dougalli* Montag. ROSEATE TERN.

Rare; probably a straggler; Lake Michigan; "occasional visitor" (Gibbs' Birds of Michigan); one specimen recorded in catalogue of the Birds of Michigan in the museum of Kent Scientific Institute at Grand Rapids, by E. L. Moseley; "Prof. Smith shot two from a flock of five, in Hillsdale, in the spring of 1892" (F. M. Falkner); "common on Lake Erie and Raisin River" (Jerome Trombley); "probable summer resident" (Dr. J. B. Steere).

32-74-(801). *Sterna antillarum* (Less.). LEAST TERN.

Given in Gibbs' Birds of Michigan; "reported as a summer resident in northern Indiana" (Butler's Birds of Ind.); "certainly breeds at St. Clair Flats" (Dr. W. C. Brownell).

33-75-(804). *Sterna fuliginosa* Gmel. SOOTY TERN.

Dr. G. W. Topping, of DeWitt, is authority for one having been taken near DeWitt, in the spring of 1880. Coues says "along the Atlantic coast;" Ridgway says "north to Carolinas, casually to New England;" if taken in Michigan its occurrence was doubtless a rare accident.

GENUS HYDROCHELIDON BOIE.

34-77-(306). *Hydrochelidon nigra surinamensis* (Gmel.). BLACK TERN; SHORT-TAILED TERN.

Abundant; spring and summer; "Hillsdale Co." (A. H. Boies); "Mackinac Island" (S. E. White); taken at St. Clair Flats by W. H. Collins, (Bull. Nutt. O. Club, Vol. V, p. 61); "common on Lake Erie and Raisin River" (Jerome Trombley); "nests on floating debris at St. Clair Flats" (W. A. Davidson); "common at Saginaw" (Miles' Birds of Michigan); "Kent Co." (S. E. White); breeds; "abundant breeder in Wayne Co." (B. W. Swales); "probably raises two broods" (Amos W. Butler); nests about lakes in June on hummocks on the ground, often built up several inches; eggs three, greenish, "and spotted" (Gibbs).

ORDER STEGANOPODES. TOTIPALMATE SWIMMERS.

FAMILY PHALACROCORACIDÆ. CORMORANTS.

Heavy hooked-billed birds; food, fish; they do not plunge, but dive for their food.

GENUS PHALACROCORAX BRISS.

35-119-(750). Phalacrocorax carbo (Linn.). CORMORANT.

"An occasional visitor" (Gibbs' Birds of Michigan); of doubtful occurrence in Michigan.

36-120-(751). Phalacrocorax dilophus (Sw. and Rich.). DOUBLE-CRESTED CORMORANT.

"Common at times" (Dr. M. Gibbs); migrant or winter resident; "Southern Michigan, Hillsdale Co." (A. H. Boies); "our commonest species" (Jordan); "breeds in great numbers in Wis." (Davie's Nests and Eggs of North American Birds). Dr. Ezra S. Holmes, of Grand Rapids, has a fine male which he took in northern Indiana, just over the Michigan line, and Mr. Levi Broas took a fine female near Ionia, which is now in our museum.

FAMILY PELECANIDÆ. PELICANS.

Heavy birds with long, hooked beaks; large pouch beneath the lower jaw; food, fish; either plunge for or scoop up their food.

GENUS PELECANUS LINN.

37-125-(748). Pelecanus erythrorhynchos Gmel. AMERICAN WHITE PELICAN.

Very rare; "Hillsdale and Lenawee counties." (A. H. Boies); "one killed on Saginaw Bay, one in St. Joseph Co, and it has been seen in the Upper Peninsula" (Dr. M. Gibbs); one killed in Allegan county (O. and O., Vol. XVII, 1892, p. 143); one in museum from Berrien Co.; "one taken at Tecumseh, Lenawee Co., in 1882" (L. W. Watkins); "two killed in a flock of forty or fifty, at Cambria, Mich., and now mounted in a store in Hillsdale" (F. M. Falconer); "Keweenaw Point" (Kneeland).

ORDER ANSERES. LAMELLIROSTRAL SWIMMERS.

FAMILY ANATIDÆ. DUCKS, GEESE AND SWANS.

Birds with thick feathers, lamellate bills, palmate feet; food, mostly vegetable, some insects, etc.

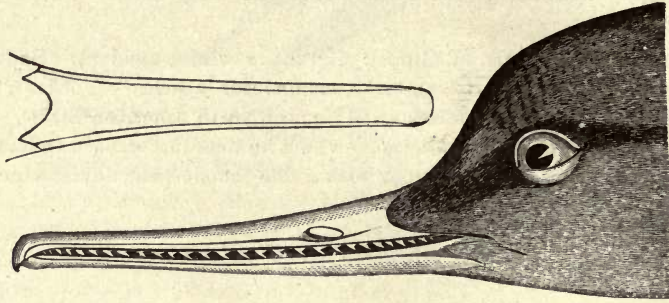
SUBFAMILY MERGINÆ. MERGANSERS.

GENUS MERGANSER. BRISS.

38-129-(743). Merganser americanus (Cass.). AMERICAN MERGANSER; MERGANSER; GOOSANDER; FISH DUCK.

Common; "throughout the state" (A. H. Boies); migrant or winter resident; reported from St. Clair Flats; "have seen acres of water covered by them in spring" (Dr. W. C. Brownell); "Kent Co. and Mackinac Island" (S. E. While); "common at Iron

Mountain" (E. E. Brewster); "Keweenaw Point" (Kneeland); "common migrant on Lake Erie" (Jerome Trombley); included in Dr. Sager's list of 1839; occasionally a summer resident, especially in the northern part of this state, where it may breed. This fine bird is very common at Saginaw Bay and about all the lakes in spring and fall; it is not fit for table use.



Red-breasted Merganser, natural size.

39-130-(744). Merganser serrator (Linn.). RED-BREASTED MERGANSER.

Rare; migrant; winter resident; often in large flocks; we have it from Saginaw Bay; taken at Plymouth by J. B. Purdy; A. H. Boies reports it from St. Joseph Co.; "common migrant on Lake Erie" (Jerome Trombley); "Keweenaw Point" (Kneeland); "breeds in Northern Peninsula" (Prof. Ludwig Kumlein); Mr. S. E. White took nine eggs from a nest on Round Island, near Mackinac Island, the nest was near the water's edge under a low cedar. Dr. A. K. Fisher thinks it doubtful if it breeds in Michigan. This Merganser is given in Sager's list of 1839.

GENUS LOPHODYTES REICH.

40-131-(745). Lophodytes cucullatus (Linn.). *HOODED MERGANSER; SAW-BILL; TOP-KNOT.

Very abundant; "throughout the State" (A. H. Boies); migrant; "Kent Co. and Mackinac Island" (S. E. White); "common at Iron Mountain" (E. E. Brewster); "Keweenaw Point" (Kneeland); "common migrant on Lake Erie" (Jerome Trombley); taken at Plymouth by J. B. Purdy; taken frequently at Pine Lake; in April and Sept.; may breed as it is occasionally taken in summer; "doubtless breeds, eggs usually ten to twelve, may range from six to eighteen" (Amos W. Butler); said to nest in hollow trees; "feeds on snails and crabs, excellent table duck" (J. H. Whitehead); "flesh almost as rank as that of the two preceding" (Ludwig Kumlein); this is one of our handsomest ducks. In California this duck is not noticed by hunters, as it has no value in the market.

GENUS ANAS LINN.

41-132-(707). Anas boschas Linn. *MALLARD; MALLARD DUCK; GREEN HEAD.

Very abundant; throughout the entire State; summer months, though usually a migrant; March, April, Sept. and Oct.; reported common in Kalamazoo and Wayne

counties; "abundant in Monroe Co." (Jerome Trombley); "abundant throughout the State" (A. H. Boies); "nests by thousands at St. Clair Flats" (Dr. W. C. Brownell); "very common in Kent Co. and Mackinac Island" (S. E. White); "Keweenaw Point" (Kneeland); breeds; nests on the ground; Dr. Gibbs reports a nest in a hollow tree; nest elaborate; eggs six to twelve, color dirty white to olive green; excellent game bird. Our domestic ducks come largely from this species.

42-133-(708). *Anas obscura* Gmel. BLACK DUCK; DUSKY DUCK.

Common in fall and spring; occasional in fall and summer; "migrant and occasional winter resident in Northern Indiana" (Butler's Birds of Indiana); "throughout the entire State" (A. H. Boies); "Keweenaw Point" (Kneeland); reported from Bois Blanc Island; "Monroe Co." (Jerome Trombley); "undoubtedly breeds" (Dr. M. Gibbs); "Mr. W. A. Davidson took a nest at St. Clair Flats" (Dr. W. C. Brownell); Dr. J. B. Steere gives it as a questionable summer resident; Prof. Ludwig Kumlein writes me that this duck breeds in Northern Wisconsin and without doubt in our Northern Peninsula.

43-135-(711). *Anas strepera* Linn. *GADWALL.

"Common throughout the entire state" (A. H. Boies); April and October; migrant; "breeds in the Northern Peninsula" (Prof. Ludwig Kumlein); "Keweenaw Point" (Kneeland); often taken at Park and Pine Lakes near Lansing; Dr. J. B. Steere gives it as a summer resident with a question mark; included in Sager's list of 1839.

44-137-(713). *Anas americana* Gmel. BALDPATE; AMERICAN WIDGEON.

Common; migrant; April, May and October; "common in Monroe Co., but not known to breed" (Jerome Trombley); reported common at St. Clair Flats; "common in Kent Co." (S. E. White); Dr. J. B. Steere gives it as a doubtful summer resident; "rare summer resident in Northern Indiana, where it breeds" (Butler's Birds of Ind.); "Keweenaw Point" (Kneeland); we have fine specimens in our museum taken at Pine Lake. This species is included in Dr. A. Sager's list of 1839.

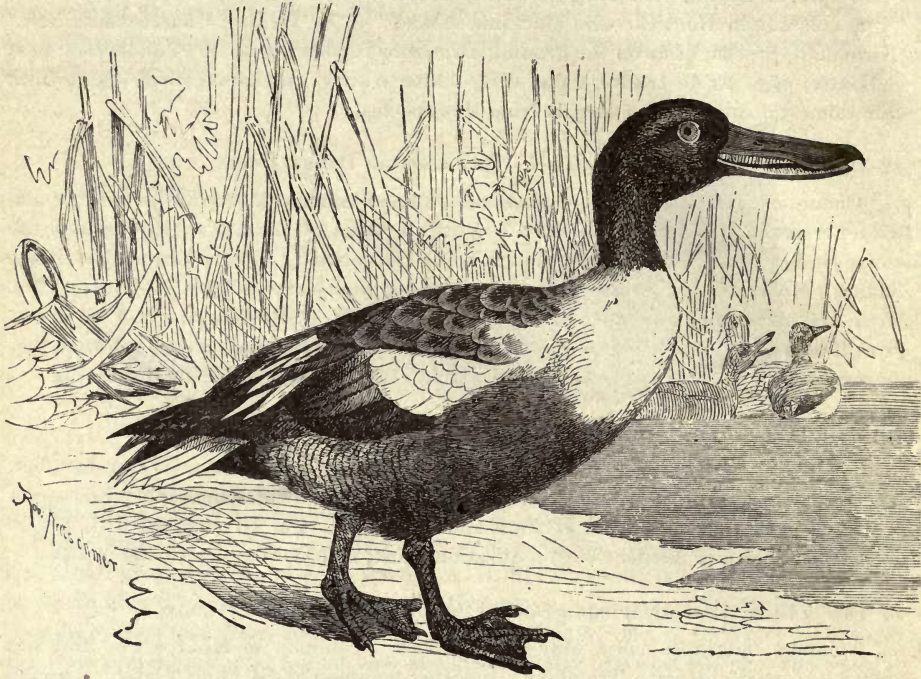
45-139-(715). *Anas carolinensis* Gmel. GREEN-WINGED TEAL.

Common; "throughout the state" (A. H. Boies); migrant; May and October; taken at Pine Lake near the college; this and the four succeeding species all taken at Plymouth by J. B. Purdy; "Keweenaw Point" (Kneeland); "migrant in Monroe Co." (Jerome Trombley); "breeds at St. Clair Flats" (Dr. W. C. Brownell); one of our best table ducks.

46-140-(716). *Anas discors* Linn. *BLUE-WINGED TEAL.

Very common; "throughout the state" (A. H. Boies); April and October; usually a migrant; "summer resident" (Dr. J. B. Steere); "common at Au Sable" (N. A. Eddy); two nests found and eggs taken by S. E. White in Allegan Co., May 28, 1891; "found breeding at the mouth of Kalamazoo river" (Dr. M. Gibbs); "occasionally breeds in Monroe Co." (Jerome Trombley); "surely breeds at St. Clair Flats" (Dr. W. C. Brownell); "breeds at Sault Ste. Marie" (C. S. Osborn); "Keweenaw Point" (Kneeland); nests on ground, in swamp grass; eggs twelve. Mr. J. B. Purdy writes me that he has frequently taken the young, some of which were yet unable to fly, at Plymouth.

GENUS SPATULA BOIE.

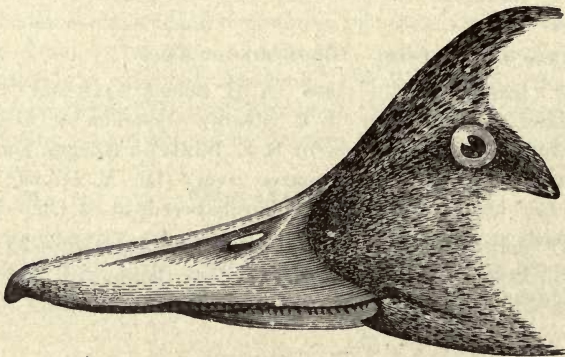


Shoveller, one-fourth natural size.

47-142 (718). *Spatula clypeata* (Linn.). SHOVELLER; SPOONBILL.

Very common; migrant; "breeds in the Northern Peninsula" (Prof. L. Kumlein); bill very broad; lamellæ of bill very marked; taken frequently at Pine Lake, near here, in April and May; Dr. Steere gives it as a questionable summer resident; "probably breeds in Northern Indiana" (Amos W. Butler); "St. Joseph and Monroe counties" (A. H. Boies); "common on Lake Erie" (Jerome Trombley); "Keweenaw Point" (Kneeland); in Sager's list of 1839.

GENUS DAFILA STEPH.



Pintail, female, natural size.

48-143-(710). *Dafila acuta* (Linn.). PINTAIL; SPRIGTAIL.

Rather common; "throughout the State" (A. H. Boies); "Keweenaw Point" (Kneeland); migrant and possibly winter resident; Sept. and May; "Monroe Co." (Jerome Trombley); "never saw it in January" (Dr. M. Gibbs); "reported common at St. Clair Flats; "migrant" (Dr. J. B. Steere); "doubtful winter resident" (Amos W. Butler); embraced in Sager's list of 1839.

GENUS AIX BOIE.



Wood Duck, reduced.

49-144-(719). *Aix sponsa* (Linn.). *WOOD DUCK; SUMMER DUCK; TREE DUCK.

Very common; "throughout the entire State" (A. H. Boies); I have it authentically reported from Kent, Monroe, Washtenaw, St. Clair and Muskegon counties and Mackinac Island; "common at Iron Mountain" (E. E. Brewster); "Keweenaw Point" (Kneeland); summer resident; March, rarely Feb., to Nov.; "once common but now rare in Monroe Co." (Jerome Trombley); breeds abundantly; nests in the tops or hollows of trees, hence called tree duck; eggs, dirty yellowish white; one of our handsomest ducks; an excellent game bird; "the males sometimes feed in flocks during the breeding season" (S. E. White). This beautiful bird is common on the Red Cedar, which passes by our college campus, where I have often taken it from April to Oct. Unfortunately, these birds, formerly so common, are being rapidly thinned by hunters.

GENUS AYTHYA BOIE.

50-146-(723). *Aythya americana* (Eyt.). REDHEAD; AMERICAN POCHARD.

Quite common; "throughout the entire state," (A. H. Boies); spring and fall; migrant; "common on Lake Erie" (Jerome Trombley); "abundant at Au Sable" (N. A. Eddy); "Keweenaw Point" (Kneeland); I also have reports from Kent and St. Clair counties; taken at Plymouth by J. B. Purdy; this is frequently taken at Pine Lake near here in October; found breeding at St. Clair Flats by W. H. Collins (Bull. Nutt. O. Club, Vol. V, p. 61). Davie, p. 58, mentions it as breeding in Michigan; included in Sager's list of 1839.

51-147-(724). *Aythya vallisneria* (Wils.). CANVAS-BACK.

Not very common; taken on Detroit river by J. B. Purdy; migrant; more abundant near the Great Lakes; "common on Lake Erie" (Jerome Trombley); "common at St. Clair Flats" (Dr. W. C. Brownell); "not found on inland lakes, but rarely taken at St. Clair Flats and Saginaw Bay" (A. H. Whitehead); "Keweenaw Point" (Kneeland); "common where wild celery abounds, rare at Sault Ste. Marie" (C. S. Osborn); perhaps our finest game duck.

52-148-(720). *Aythya marila nearctica Stejn.* AMERICAN SCAUP DUCK; GREATER SCAUP DUCK; GREATER BLUE-BILL; GREATER BLACKHEAD.

Common; "migrant at Ann Arbor" (Dr. J. B. Steere); fall and spring, often very common in fall; migrant; one nest reported by W. H. Collins from St. Clair Flats. (Bull. Nutt. O. Club, Vol. V, p. 61); "common at Lake Erie" (Jerome Trombley); "Keweenaw Point" (Kneeland); taken at Plymouth by J. B. Purdy; we find it very common at Pine Lake in October; "common game duck" (Dr. W. C. Brownell).

53-149 (721). *Aythya affinis* (Eyt.). LESSER SCAUP DUCK; LESSER BLUE-BILL; LESSER BLACKHEAD.

Very abundant; migrant; taken plentifully at Pine Lake, five miles east of the college, in October and November; "common in Detroit markets" (Dr. W. C. Brownell); "exceedingly common at Au Sable, November, 1884" (N. A. Eddy); "common at Iron Mountain" (E. E. Brewster); "migrant at Ann Arbor" (Dr. J. B. Steere); "common at Lake Erie" (Jerome Trombley); one nest reported by W. H. Collins at St. Clair Flats. (Bull. Nutt. O. Club, Vol. V, p. 61); it very likely breeds here sparingly, north abundantly; "This is a good game bird and decoys very easily" (S. E. White).

54-150-(722). *Aythya collaris* (Donov.). RING-NECKED DUCK; BLACKHEAD.

Rather common; "throughout the state during migration," (A. H. Boies); taken at Plymouth by J. B. Purdy; "Iron Mountain, April 18, 1889" (E. E. Brewster); migrant; March and September; Davie, p. 70, says it breeds from New York to Wisconsin, and north; not rare at Pine Lake in October and November; given in Dr. A. Sager's list of 1839; "tolerably common in Northern Indiana" (Butler's Birds of Ind.).

GENUS GLAUCIONETTA STEJN.

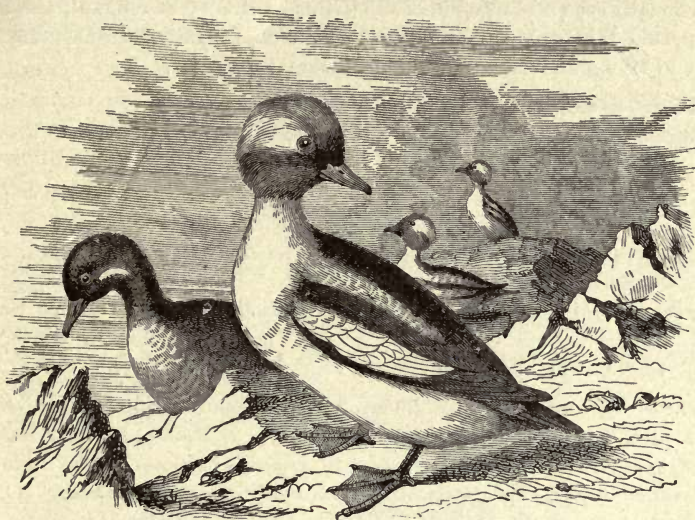
55-151-(725). *Glaucionetta clangula americana* (Bonap.). AMERICAN GOLDEN-EYE; GOLDEN-EYE; WHISTLER; GARROT.

"Common from the north, late in November, and often remains all winter on open spots of swift running rivers, dives at the flash of a gun, and will escape shot at thirty feet to my certain knowledge" (Dr. M. Gibbs); "throughout the state" (A. H. Boies); reported from Kent Co.; migrant; "Dr. Brayton gives this as a winter resident on Lake Mich." (Amos W. Butler); "winter resident on Lake Michigan and open inland lakes" (Prof. Ludwig Kumlein); "Keweenaw Point" (Kneeland); "common on the rapids of the St. Mary's River all winter" (C. S. Osborn); "this bird is taken at Pine Lake, is a fine game duck and is so quick to dive that it is difficult to shoot it on the water" (A. H. Whitehead). There are several of these ducks in the collection of Mr. Levi Broas, of Belding, Mich., taken by him in that locality. I think this a common species all through the Southern Peninsula.

56-152-(726). *Glaucionetta islandica* (Gmel.). BARROW'S GOLDEN-EYE.

Brayton in his "Birds of Indiana" gives this as a winter resident of Lake Michigan; "one taken at Hillsdale from a flock on the lake in 1892" (F. M. Falconer); "only taken on Lake Michigan as a rare straggler" (Ludwig Kumlein); "not uncommon winter resident on Lake Michigan" (H. Nehrling); embraced by Stockwell in his list of Michigan birds (F. and S., Vol. VIII. pp. 23, 380.

GENUS CHARITONETTA STEJN.



Buffle-head, much reduced.

57-153-(727). *Charitonetta albeola* (Linn.). *BUFFLE-HEAD; BUTTER-BALL; SPIRIT DUCK.

Very abundant; small flocks; "throughout the state" (A. H. Boies); spring and fall; winter resident; occasional in summer; "probably breeds at St. Clair Flats" (Dr. W. C. Brownell); reported from Kent and St. Clair counties; "common on Lake Erie" (Jerome Trombley); "Au Sable in October, 1884" (N. A. Eddy); "common at Au Sable" (N. A. Eddy); "not rare at Traverse City" (Dr. M. L. Leach); "common at Iron Mountain" (E. E. Brewster); "Keweenaw Point" (Kneeland); taken by Dr. Atkins in April and July; we have taken several at Pine Lake in November. This duck is rapid of flight and quick to dive.

GENUS CLANGULA LEACH.

58-154-(728). *Clangula hyemalis* (Linn.). OLD SQUAW; OLD WIFE; LONG-TAILED DUCK.

Winter resident; more abundant near Great Lakes; one specimen taken near here at Pine Lake; reported from Kent Co.; occasionally common in Kalamazoo Co.—"A flock noted Feb. 1884" (Dr. M. Gibbs); "two specimens taken in Grand Traverse Co." (Dr. M. L. Leach); "St. Joseph Co." (A. H. Boies); common migrant on Lake Erie" (Jerome Trombley); "abundant on Lake Michigan" (Butler's Birds of Indiana).

GENUS HISTRIONICUS LESS.

59-155-(730). *Histrionicus histrionicus* (Linn.). HARLEQUIN DUCK.

Very rare; admitted in Gibbs' Birds of Michigan. A. H. Boies thinks this should be included. Prof. Ludwig Kumlein writes me that he has taken two specimens in Jefferson Co., Wisconsin.

GENUS SOMATERIA LEACH.

60-160-(734). *Somateria dresseri* Sharpe. AMERICAN EIDER.

"Occasionally seen on Lake Superior" (Gibbs' Birds of Michigan); the late W. H. Collins reported taking a young male in Detroit on Detroit river, Dec. 1882. If this bird occur in Michigan it must be as an accidental straggler.

61-162-(736). *Somateria spectabilis* (Linn.). KING EIDER.

"Straggler taken at Milwaukee and Grand Haven, Michigan" (Prof. Ludwig Kumlein). Dr. A. K. Fisher thinks this very doubtful.

GENUS OIDEMIA FLEM.

62-163-(737). *Oidemia americana* Sw. and Rich. AMERICAN SCOTER; AMERICAN BLACK SCOTER.

"Rare accidental visitor" (Gibbs' Birds of Michigan); taken at Au Sable, Oct., 1884 (N. A. Eddy in O. and O., Vol. IX, p. 41); "not uncommon in winter on Lake Michigan" (H. Nehrling and L. Kumlein).

63-165-(738). *Oidemia deglandi* Bonap. WHITE-WINGED SCOTER; VELVET SCOTER.

Rather rare; migrant; two in our museum taken at Pine Lake near here in 1885; "Lake Michigan" (Butler's Birds of Ind.); "this bird is becoming more numerous, now frequently taken during migration at Park and Pine Lakes near Lansing" (C. J. Davis); "occurs regularly on Lake Michigan" (Prof. Ludwig Kumlein); "cannot be called common in Upper Peninsula" (C. S. Osborn).

64-166-(739). *Oidemia perspicillata* (Linn.) SURF DUCK; SURF SCOTER; SEA COOT.

Very rare; winter visitor; "Au Sable and Saginaw Bay" (N. A. Eddy in O. and O., Vol. IX, 1884, pp. 4 and 41); "regular migrant on inland lakes of Wisconsin" (Prof. Ludwig Kumlein); "not uncommon on Lake Michigan" (H. Nehrling); "taken near Iron Mountain Oct. 20, 1890" (E. E. Brewster).

GENUS ERISMATURA BONAP.

65-167-(741). *Erismatura rubida* (Wils.). RUDDY DUCK; BLACK JACK.

Exceedingly abundant; "throughout the State" (A. H. Boies); migrant; April, Oct. and Nov.; very common at Pine Lake; taken in Oakland county by J. B. Purdy; reported from Kent Co.; "exceedingly abundant some falls in Kalamazoo Co." (Dr. M. Gibbs); "common migrant on Lake Erie" (Jerome Trombley); Mr. Jerome Trombley reports large numbers on Raisin River in spring of 1888; "at Mackinac Island" (S. E. White); given by Dr. J. B. Steere as a summer resident; flocks; very fearless and stupid; "breeds in Northern Peninsula" (Prof. Ludwig Kumlein); the late W. H. Collins reported taking eggs; "not very good eating" (A. H. Whitehead).

GENUS CHEN BOIE.

66-169-(696). *Chen hyperborea* (Pall.). LESSER SNOW GOOSE.

Rare; migrant; reported from Michigan in the catalogue of the museum of the

Kent Scientific Institute, by E. L. Moseley; included in Butler's Birds of Indiana; "accidental if in Michigan" (Prof. Ludwig Kumlein); "northern counties of Indiana" (Butler's Birds of Indiana). It is possible that the next is often mistaken for this one.

67-169a-(695). *Chen hyperborea nivalis* (Forst.). GREATER SNOW GOOSE.

Common; Mar. and Oct. and Nov.; throughout the State; migrant; Mr. A. H. Boies has seen large flocks flying in Hillsdale and Lenawee counties during winter; Dr. M. Gibbs reports taking three of these from a flock of ten or more Oct. 24, 1884; "Keweenaw Point" (Kneeland); doubtfully given as a Michigan migrant by Dr. J. B. Steere; known to alight not infrequently near Lansing; excellent table bird.

68-169.1-(694). *Chen cærulescens* (Linn.). BLUE GOOSE.

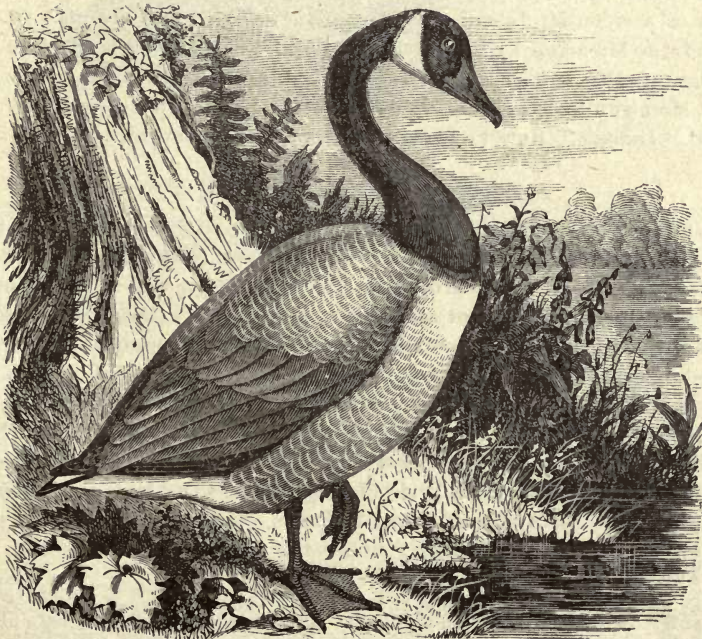
One specimen reported in Kent Scientific Institute at Grand Rapids by E. L. Moseley; two captured from a flock on St. Clair Flats by the late W. H. Collins; "regular migrant throughout Wisconsin" (Prof. Ludwig Kumlein); "Indiana" (Butler's Birds of Indiana).

GENUS ANSER BRISS.

69-171a-(693). *Anser albifrons gambeli* (Hartl.). *AMERICAN WHITE-FRONTED GOOSE.

"Transient, rare" (Dr. M. Gibbs); "migrant" (Dr. J. B. Steere); "Keweenaw Point" (Kneeland); "Indiana, rare migrant" (Butler's Birds of Indiana). This is unquestionably very rare in Michigan.

GENUS BRANTA SCOP.



Canada Goose, reduced.

70-172-(702). *Branta canadensis* (Linn.). *CANADA GOOSE; COMMON WILD GOOSE.

Common; Feb. to Apr., and Sept. even to Dec.; throughout the entire State; often seen flying over in March and November, and occasionally much earlier and later in large flocks, which are usually arranged in quite definite V-shaped figures; more commonly seen early or late in the day, and heard at all times of night; frequently alights; "often in wheat fields" (Jerome Trombley); "Keweenaw Point" (Kneeland); nests on the ground; eggs, five to six, yellowish green, "not distinguishable from those of our common geese" (Dr. C. W. Brownell). These birds are very shy and so are rarely taken. "Mr. Briggs of Wayne Co. has a fine pair. They attempt to migrate each season, which he prevents. They breed well in confinement. They cross readily with common geese, but the hybrids are infertile" (Dr. W. C. Brownell); "will sometimes swim up to ducking stools, and fly low in foggy weather" (L. S. Foster).

71-172a-(704). *Branta canadensis hutchinsii* (Sw. and Rich.). HUTCHINS' GOOSE.

Rare migrant; reported in catalogue of birds of Michigan in the Kent Scientific Institute by E. L. Moseley; taken by the late W. H. Collins on St. Clair Flats. Amos W. Butler gives it as a rare migrant in Indiana; and, upon Dr. Brayton's authority, says it formerly bred in that state (Birds of Indiana, p. 25).

72-172b-(702a). *Branta canadensis occidentalis* (Baird). WHITE-CHEEKED GOOSE.

Reported by the late W. H. Collins, who was a very accurate observer. Dr. A. K. Fisher thinks this doubtful.

72-172c-(703). *Branta canadensis minima* Ridgw. CACKLING GOOSE.

Reported by the late W. H. Collins.

74-173-(700). *Branta bernicla* (Linn.). BRANT.

Rare or accidental; "common wild goose in the Upper Peninsula" (A. H. Boies); reported from Michigan by Robert B. Lawrence (Forest and Stream, Vol. XXXII, p. 316); migrant; this species while more common near the ocean, is said to occur not rarely in Michigan and the surrounding states; "I have often seen them" (Dr. W. C. Brownell); "Indiana" (Butler's Birds of Indiana); good game bird.

GENUS OLOR WAGLER.

75-180-(689). *Olor columbianus* (Ord). *WHISTLING SWAN; AMERICAN SWAN.

Rare; migrant; occasional in summer; one in museum taken at Maple Rapids; one taken at Plymouth by J. B. Purdy; one killed at Mason, this county, Nov. 28, 1878; "have known several to be shot about our inland lakes" (Dr. W. C. Brownell); one taken by Mr. Levi Broas near Ionia and now in his fine collection; two taken by E. A. Lockwood in the month of December at South Haven (Am. Field, Vol. XXVII); "they occasionally occur in flocks in Jackson and Washtenaw counties, where they have been taken repeatedly. They are very shy and remain near large inland lakes" (L. W. Watkins); "not infrequently seen in Lenawee and Hillsdale counties" (A. H. Boies); "occasionally shot by hunters on Lake Erie" (Jerome Trombley); "Keweenaw Point" (Kneeland); embraced in Dr. A. Sager's list of 1839.

76-181-688. *Olor buccinator* (Rich.). TRUMPETER SWAN.

Rare; migrant; "Hillsdale Co." (A. H. Boies); one taken in Kent Co. by E. S. Holmes and now in his collection at Grand Rapids; included in the lists of Michigan birds by Covert, Fox, Stockwell and Steere; counties of Northern Indiana (Butler's Birds of Indiana).

ORDER HERODIONES. HERONS; STORKS; IBISES; ETC.

SUBORDER IBIDES. SPOON-BILLS AND IBISES.

FAMILY IBIDIDÆ. IBISES.

Long bills; rather short legged waders; food, fish and other aquatic animals.

GENUS PLEGADIS KAUP.

77-186-(649). *Plegadis autumnalis* (Hasselq.). GLOSSY IBIS.

Very rare; occasional straggler; one Michigan specimen reported in the catalogue of the Kent Scientific Institute by E. L. Moseley; "killed Oct. 6, 1884, on Saginaw Bay" (N. A. Eddy O. and O., Vol. X, p. 9).

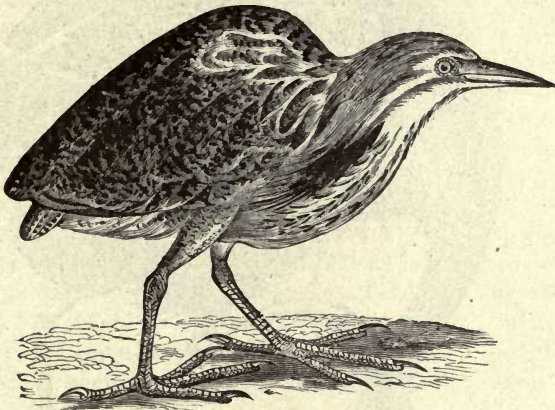
SUBORDER HERODII. HERONS; EGRETS; BITTERN; ETC.

FAMILY ARDEIDÆ. HERONS; BITTERN; ETC.

Feed on fish, frogs and toads, etc.; about marshes; not usually game birds.

SUBFAMILY BOTAURINÆ. BITTERN.

GENUS BOTAURUS HEERMANN.



Bittern, reduced.

78-190-(666). *Botaurus lentiginosus* (Montag.). *AMERICAN BITTERN; STAKE DRIVER; SHYTEPOKE; INDIAN HEN; "THUNDER PUMPER; "BARREL MAKER;" PLUM PUDDEN.

Common; throughout the state; April to August; "common in Monroe Co." (Jerome Trombley); "Mackinac Island" (S. E. White); "common at Sault Ste. Marie" (A. H. Boies); "Keweenaw Point" (Kneeland); reported from Kent Co. and Ann Arbor; breeds; nests, but not in colonies, on the ground, usually in marshes and often surrounded by water; "breeds in great numbers about marshes in Shiawassee county" (Dr. W. C. Brownell), occasionally in meadows; nest elaborate; eggs three to seven, drab or mud color; the males make as a love note a sound like "plum pudden," also another like a ringing or pumping sound, as if pounding a barrel (see article by Bradford Torrey in "The Auk" for January 1889); a very common bird in nearly all parts of Michigan; destroys field mice. For interesting articles on this bird by Dr.

M. Gibbs, describing notes and contortions in uttering them, see O. and O., Vol. XIV, 1889, p. 21, and Oölogist, Vol. X, 1892, p. 73.

79-191-(667). *Botaurus exilis* (Gmel.). LEAST BITTERN.

Common throughout Southern Michigan; summer resident; "abundant at Ann Arbor and at Grand Rapids" (R. H. Wolcott); "common in Oakland county, where it breeds" (Dr. W. C. Brownell); "common in Monroe Co." (Jerome Trombley); one in collection of C. E. Holmes at Grand Rapids taken in Muskegon Co.; "all Southern Michigan" (A. H. Boies); breeds; nests in June, on the ground, in marshes, on a simple platform of reeds and sedges, often half way up on dead flags, usually over the water, "occasionally in a bush" (Prof. J. W. Simmons); eggs three to six, white with bluish tinge; "nests in Oakland county" (W. C. Brownell, in O. and O., Vol. XVI, p. 32); bird stupid and so, easily caught. This species occurs in Sager's list of 1839.

SUBFAMILY ARDEINÆ. HERONS AND EGRETS.

GENUS ARDEA LINN.



Great Blue Heron.

80-194-(655). *Ardea herodias* Linn. *GREAT BLUE HERON.

Very common; throughout the state; "Grand Traverse county, where there is a heronry" (Dr. M. L. Leach); "common at Iron Mountain" (E. E. Brewster); breeds in colonies; nests in May, in tall trees, near marshes; "sticks in nests sometimes one inch in diameter and five feet long" (Prof. J. W. Simmons); Dr. W. C. Brownell knows of three heronries near Morrice, Shiawassee county. He says the stench is terrible at nesting time. There are often six nests in a tree. The trees, he says, are sure to die; eggs four to six, blue; S. E. White took three nests with five, one with six and one with seven eggs from one tree, May 2, 1881. There was a large heronry just west of Lansing for years. The nests, which were numerous, were in large sycamores which stood in a large marsh. I secured several birds and eggs from this place. Dr. Steere reports heronries in black ash swamps about Ann Arbor. "Heronries are quite common in Southwestern Michigan. The birds fish three times daily. I have taken thirty-five minnows, from two to four inches long, from the stomach of one of these birds" (J. W. Simmons). C. B. Cook took a fish that was twelve inches long and weighed over one pound from the stomach of a Heron. These birds are often very fearless. I have often walked to within a rod or two of a bird before it would fly.

**81-196-(658). *Ardea egretta* Gmel. AMERICAN EGRET; GREAT WHITE HERON;
GREAT WHITE EGRET.**

Very rare; wanderer from the south; A. H. Boies reports it from Lenawee, Hillsdale, St. Joseph and Jackson counties; Jerome Trombley reports it from Monroe Co., where he took one in 1889; "occasionally abundant in July and August, undoubtedly breeds in the state, but where?" (Dr. M. Gibbs); "quite common in late summer in Wayne county, where they are taken half grown, but who knows where they breed?" (Dr. W. C. Brownell); we had one in our museum taken from Jackson Co.; one taken by J. B. Purdy at Plymouth and now in his cabinet; two taken at Greenville, Montcalm Co., in 1890 by Prof. Jas. Satterlee; Dr. Atkins does not mention this bird; "breeds in Northern Wisconsin and without doubt in the Northern Peninsula of Michigan (Prof. Ludwig Kumlein); doubtless breeds in Northern Indiana (Butler's Birds of Indiana); this species is given in Sager's list of 1839. There is a fine specimen in the collection of Mr. Levi Broas, taken in Ionia county.

82-197-(659). *Ardea candidissima* Gmel. SNOWY HERON; LITTLE WHITE EGRET.

Very rare; wanderer from the south; "a rare accidental visitor during July and August, does not breed" (Dr. M. Gibbs).

**83-199-(660). *Ardea tricolor ruficollis* Gosse. LOUISIANA HERON; LOUISIANA EGRET;
LADY OF THE WATERS.**

Exceedingly rare; summer wanderer from the South; one specimen reported by E. L. Moseley in the catalogue of the Kent Scientific Institute at Grand Rapids; one reported by A. H. Boies from Lenawee Co.; one reported from northern Indiana (Butler's Birds of Indiana); Dr. M. Gibbs thinks this bird should be omitted from the list.

84-201-(663). *Ardea virescens* Linn. GREEN HERON; FLY UP THE CREEK.

Common; "throughout the State" (A. H. Boies); summer resident; two killed on college farm in May; "common at Ann Arbor" (Dr. J. B. Steere); "common in Monroe Co." (Jerome Trombley); "Keweenaw Point" (Kneeland); found nesting at Plymouth by J. B. Purdy; often quite tame; breeds; nests often in small colonies as does the Great

Blue Heron, in May; eggs three to six, pale blue. There are several of these, taken in Ionia Co., in the collection of Mr. Levi Broas.

GENUS NYCTICORAX STEPH.

85-202-(664). *Nycticorax nycticorax naevius* (Bodd.). AMERICAN NIGHT HERON; BLACK-CROWNED NIGHT HERON; SQUAWK; NIGHT RAVEN.

Rare; taken on Chandler's marsh north of the college; "southern Michigan" (A. H. Boies); "rare in Monroe Co." (Jerome Trombley); one taken in Lenawee Co. by Dr. W. C. Brownell; one in collection of Levi Broas, taken in Ionia Co.; breeds; nests in June, in colonies, in trees; C. S. Osborn of Sault Ste. Marie writes me that there is a great colony on Espanore Island at the mouth of St. Mary's River. The Indians and fishermen eat the eggs. He has seen over one hundred nests there in the Birch and Balsam trees, the same nests are used over and over year after year. He adds these may possibly be the Great Blue Heron; eggs four, occasionally five or six; "three or four" (L. S. Foster), bluish; young birds in autumn said to be of good flavor and prized for the table.

ORDER PALUDICOLÆ. CRANES; RAILS, ETC.

SUBORDER GRUES. CRANES.

FAMILY GRUIDÆ. CRANES.

Fine robust birds; feed on rootlets, grasses, grains, reptiles, toads, frogs, etc.

GENUS GRUS PALL.

86-204-(668). *Grus americana* (Linn.). WHOOPING CRANE; WHITE CRANE.

Very rare; probably accidental if it occur at all; Covert says "very irregular visitor at Ann Arbor;" "occasionally seen both singly and in flocks of ten or twelve about marshes at Manchester, Washtenaw county, where in has been killed repeatedly" (L. W. Watkins); were these not mistaken identifications? "they probably were" (Dr. A. K. Fisher); northern Indiana (Butler's Birds of Indiana).

87-205-(669). *Grus canadensis* (Linn.). LITTLE BROWN CRANE.

"Transient visitor of the Upper Peninsula" (H. Nehrling); "doubtful" (Dr. A. K. Fisher).

88-206-(670). *Grus mexicana* (Müll.). *SANDHILL CRANE.

Common; southern Michigan, Mar. to Oct.; more common near marshes; Judge J. H. Steere of Sault Ste. Marie reports this species from the Upper Peninsula; "Keweenaw point" (Kneeland); breeds; Dr. Atkins took a nest at Locke, June 18, 1879; "not rare and breeds, in marshes in Monroe county" (Jerome Trombley); "never seen now in Kalamazoo county" (Dr. M. Gibbs); nests in June on old sedges, on the ground; "nests at Sauger Lake, Shiawassee county" (Dr. W. C. Brownell); eggs two, drab, specked and spotted with brown. We have taken several of these birds here, old and young, which are now preserved in the museum. Mr. L. W. Watkins informs me that they appear often in Jackson county near small lakes, in large flocks of 100 or more, in Oct. and Nov., where they feed extensively on corn, shelling and eating it after it is cut. A young one was reared by Mr. Watkins until two years of age. They are prized by some

people for table use. Dr. Brownell writes me that he has known them to be so tame that he could walk to within twenty feet of them; the male often executes a queer dance, and their note is like the rapid stroke of a coarse cow bell.

SUBORDER RALLI. RAILS; GALLINULES; COOTS, ETC.

FAMILY RALLIDÆ. RAILS; GALLINULES, ETC.

Feed on reptiles and aquatic animals.

SUBFAMILY RALLINÆ. RAILS.

GENUS RALLUS LINN.

89-208-(676). *Rallus elegans* Aud. KING RAIL; RED-BREASTED RAIL; FRESH WATER MARSH HEN.

Rather common; we have it from this place and Saginaw Bay; "Hillsdale Co." (A. H. Boies); "abundant in marshes of Monroe Co. near Lake Erie" (Jerome Trombley); "breeds at Plymouth, Wayne Co." (J. B. Purdy); "a rare transient in Kalamazoo Co., only twice captured to my knowledge" (Dr. M. Gibbs); breeds; nests on the ground; "nests abundantly in Wayne and St. Clair counties" (B. H. Swales); eggs six to twelve, buff, spotted with varying hues of brown; a young bird in collection of E. S. Holmes, of Grand Rapids, was taken by him near the mouth of the Kalamazoo River, in Allegan Co. Dr. W. C. Brownell writes me that he took ten eggs from a nest. The old bird was very fearless. He has seen the young, mere puffs of black down, leave the nest within a half hour of hatching.

90-212-(677). *Rallus virginianus* Linn. * VIRGINIA RAIL.

Very common; Southern Michigan; May to September; "abundant in Southwestern Michigan" (Prof. J. W. Simmons); "abundant about marshes in Monroe Co., near Lake Erie" (Jerome Trombley); "breeds near St. Clair" (B. H. Swales); nests on stems of flags, etc., on the ground; eggs six to twelve, usually seven or eight, creamy white, spotted with small spots of reddish brown. I have found these common here and very common at Saginaw Bay. Mr. L. W. Watkins tells me that they nest very abundantly at Traverse City. This is hunted as a game bird, but is rather inferior for table use; "these birds never commence to sit till a full complement of eggs is laid" (J. B. Purdy).

GENUS PORZANA VIEILL.



Carolina Rail, reduced.

91-214-(679). *Porzana carolina* (Linn.). *SORA; CAROLINA RAIL; CRAKE; ORTOLAN.

Very common; Southern Michigan; May to Oct.; "abundant in Southern Michigan" (J. W. Simmons); "Looking Glass River near DeWitt" (Dr. G. W. Topping);

breeds; "not uncommon on Portage Lake, Keweenaw Point" (Kneeland); "incubation and laying conterminous, so that hatching continues for days" (B. W. Swales); "common at Mackinac Island" (S. E. White); "nests abundantly at Plymouth, Wayne Co." (Jas. B. Purdy); "breeds abundantly in Saginaw marshes" (N. A. Eddy); Mr. Jerome Trombley finds it breeding in Monroe county; I have taken the eggs abundantly at Saginaw; nests in June, on ground, in bog or meadow; eggs five to fourteen, very rarely to twenty, drab, with yellowish tint, darker and with larger spots than those of the Virginia Rail; often in flocks; excellent game bird, though not good shooting as they are slow to take wing; "I have taken twenty eggs from one nest. The bird commences to sit as soon as the first egg is laid, so the eggs are at all stages of incubation" (J. B. Purdy).

92-215-(680). *Porzana noveboracensis* (Gmel.). YELLOW RAIL; YELLOW CRAKE.

Rare; "probably breeds" (Gibbs' Birds of Michigan); reported in Michigan (Forest and Stream, Vol. XXV, p. 347); see Butler's Birds of Indiana; "summer resident" (Dr. J. B. Steere).

SUBFAMILY GALLINULINÆ. GALLINULES.

GENUS GALLINULA BRISS.

93-219-(684). *Gallinula galeata* (Licht.). *FLORIDA GALLINULE.

Common; "Hillsdale Co." (A. H. Boies); Mr. Boies thinks they migrate at night, but not in flocks; "common at Saginaw" (Miles' Birds of Michigan, p. 231); "breeds at Plymouth" (J. B. Purdy); "have seen thousands at St. Clair Flats" (Dr. W. C. Brownell); taken at the college; breeds; we have eggs in the museum taken near Grand Ledge; "many nests found in Kalamazoo Co." (Dr. M. Gibbs); "nests and eggs as in the following species; a fine table bird.

GENUS FULICA LINN.



Frontal Shield of Coot.

94-221-(686). *Fulica americana* Gmel. *AMERICAN COOT; COOT; MUD HEN.

Very common; throughout the entire State; "do not summer in Kalamazoo

county, but are abundant in migrations" (Dr. M. Gibbs); "common in Upper Peninsula" (E. E. Brewster); "Keweenaw Point" (Kneeland); reported from Mackinac Island; summer months; breeds; nests on the ground, frequently on floating nests; eggs six to twelve, occasionally fifteen, elongate, yellowish drab, spotted with fine dark spots. I have found the nests and eggs very common at Saginaw Bay.

ORDER LIMICOLÆ. SHORE BIRDS.

FAMILY PHALAROPODIDÆ. PHALAROPES.

Typical waders; food insects, molluscs, crustaceans, etc.

GENUS *CRYMOPHILUS* VIEILL.

95-222-(604). *Crymophilus fulcarius* (Linn.). RED PHALAROPE; GRAY PHALAROPE.

Northern Indiana, rare, probable migrant, probably in Southern Michigan (Butler's Birds of Indiana); embraced in Stockwell's Birds of Michigan; Dr. Steere classifies it among Michigan migrants; Prof. Ludwig Kumlein writes me that this bird breeds in the Northern Peninsula, which, writes Dr. A. K. Fisher, seems very improbable.

GENUS *PHALAROPUS* BRISS.



Northern Phalarope, nat. size.

96-223-(603). *Phalaropus lobatus* (Linn.). NORTHERN PHALAROPE; RED-NECKED PHALAROPE.

Exceedingly rare; "rare visitor" (Dr. Morris Gibbs); Dr. J. B. Steere classifies this doubtfully as a Michigan migrant; record by R. B. Lawrence of occurrence of this bird at Monroe, Michigan, (Forest and Stream Vol. XXV, p. 372); Prof. Ludwig Kumlein writes me that it breeds in northern Wisconsin and presumably in our Northern Peninsula. I think he must refer to Wilson's Phalarope.



Wilson's Phalarope, natural size.

97-224-(602). *Phalaropus tricolor* (Vieill.) WILSON'S PHALAROPE.

"Common, irregular, transient, only occasionally seen, taken in May and Sept. in Kalamazoo Co." (Dr. M. Gibbs); Dr. J. B. Steere puts it doubtfully among the summer residents; taken by E. E. Brewster at Iron Mountain, May 2, 1890; "Keweenaw Point" (Kneeland); northern counties of Indiana, where it breeds (Butler's Birds of Indiana).

FAMILY RECURVIROSTRIDÆ. AVOCETS AND STILTS.

Very long bills and legs; food small molluscs, crustaceans and insects.

GENUS RECURVIROSTRA LINN.

98-225-(600). *Recurvirostra americana* Gmel. AMERICAN AVOCET.

"One specimen from Michigan in the Kent Scientific Institute" (E. L. Moseley); one taken by W. H. Collins near Detroit; embraced in Butler's Birds of Indiana.

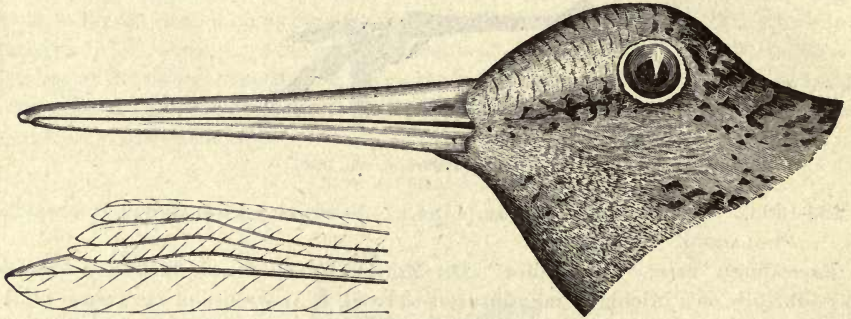
GENUS HIMANTOPUS BRISS.

99-226-(601). *Himantopus Mexicanus* (Mull.). BLACK-NECKED STILT.

"Rare transient" (Gibbs' Birds of Michigan); of doubtful occurrence in Michigan. Dr. Steere gives it doubtfully as breeding in Michigan.

FAMILY SCOLOPACIDÆ. SNIPES, SANDPIPERS ETC.

Feed on small aquatic animals, insects etc.; eggs densely spotted, usually pointed at one end; game birds.



Woodcock, head and outer primaries, natural size.

GENUS PHILOHELA GRAY.

100-228-(605). *Philohela minor* (Gmel.). *AMERICAN WOODCOCK.

Common from March, rarely February, to October or November; "occasionally every month of the year" (Gibbs); throughout the state; "formerly very common in Wayne county, but goes as the marshes are drained" (Dr. W. C. Brownell); R. H. Wolcott saw one January 1, 1888, at Grand Rapids, when the snow was one foot deep; reported from Presque Isle Co.; "Grand Traverse Co." (Dr. M. L. Leach); "Mackinac Island" (S. E. White); "Iron Mountain" (E. E. Brewster); "Keweenaw Point" (Kneeland); breeds; nests in April, on the ground in thick brush; eggs four, gray, specked and spotted with dark brown; esteemed as a game bird; taken at the College, October 30, 1892.

GENUS GALLINAGO LEACH.



Wilson's Snipe, reduced,

101-230-(608). *Gallinago delicata* (Ord). *WILSON'S SNIPE; JACK SNIPE; AMERICAN SNIPE.

Common in April and October; throughout the state; not very rare in summer; reported in Presque Isle and Muskegon Counties; "Mackinac Island" (S. E. White); "Keweenaw Point" (Kneeland); said to breed; "found breeding once" (Dr. M. Gibbs); nests on the ground, in May; eggs four, colors as above; prized as a game bird; "I have seen it, but only as a migrant" (Dr. W. C. Brownell); somewhat gregarious; this bird, according to Butler, is known as English Snipe, Jack Snipe, Common Snipe and Gutter Snipe.

GENUS MACRORHAMPHUS LEACH.

102-232-(610). *Macrorhamphus scolopaceus* (Say). RED-BREASTED SNIPE; GRAY SNIPE; GRAYBACK; GRAY-BACKED SNIPE; LONG-BILLED DOWITCHER; DOWITCHER.

Migrant; "a small flock was seen in Kalamazoo county May 21, 1888" (Dr. M. Gibbs); "occasionally seen in Hillsdale and Lenawee counties" (A. H. Boies); doubtfully given as a Michigan migrant by Dr. J. B. Steere; "Keweenaw Point" (Kneeland); Prof. Ludwig Kumlein writes me that it breeds in the Northern Peninsula; Davie, p. 111, states that this species breeds on the border of Lake Superior and north; small flocks about marshes; excellent table bird.

GENUS MICROPALAMA BAIRD.

103-233-(611). *Micropalama himantopus* (Bonap.). STILT SANDPIPER.

"Not rare some seasons near large bodies of water and occasionally taken in the interior" (Dr. M. Gibbs); Dr. J. B. Steere gives it as a doubtful Michigan migrant; "Keweenaw Point" (Kneeland); Prof. Ludwig Kumlein writes me that it breeds in the Northern Peninsula, which seems hardly probable. "Was taken near Lafayette, Ind., in spring of 1892; first Indiana record" (A. W. Butler).

GENUS TRINGA LINN.

104-234-(626). *Tringa canutus* Linn. KNOT; RED-BREASTED SANDPIPER; ROBIN SNIPE.

"Rare migrant" (Dr. M. Gibbs); "migrant" (Dr. J. B. Steere); included in list of

Rev. Chas. Fox; May and Sept.; small flocks; if this bird occur in Michigan it is very rarely.

105-239-(616). *Tringa maculata Vieill.* PECTORAL SANDPIPER; "JACK SNIPE"; GRASS SNIPE.

Very abundant; migrant; "throughout the state" (A. H. Boies); "very common on Lake Erie in Monroe Co" (Jerome Trombley); "taken at Plymouth" (J. B. Purdy); "not rare but decidedly irregular in spring and autumn" (Dr. M. Gibbs); we have taken several here at Lansing; May and Sept.; flocks about marshes; migrant; good game bird; feeds extensively on locusts and other insects.

106-240-(617). *Tringa fuscicollis Vieill.* WHITE-RUMPED SANDPIPER; BONAPARTE'S SANDPIPER.

"Not common north" (Gibbs' Birds of Michigan); "breeds far north of us" (Dr. A. K. Fisher); Jerome Trombley reports it not rare about Lake Erie; "migrant at Plymouth" (J. B. Purdy); "migrant" (Dr. J. B. Steere); "a rather rare, irregular migrant" (Dr. M. Gibbs); "breeds far north" (H. Nehrling).

107-241-(615). *Tringa bairdii Coues.* BAIRD'S SANDPIPER.

This species is embraced in Covert's Birds of Michigan, Cabot's Birds of Lake Superior, and is given by Wheaton as a migrant in Ohio.

108-242-(614). *Tringa minutilla Vieill.* LEAST SANDPIPER.

Common in spring and fall; April and Sept.; "throughout the state" (A. H. Boies); Jerome Trombley reports it very rare in Monroe Co; "not rare in Kalamazoo Co." (Dr. M. Gibbs); "I see it often in flocks in spring and fall in Shiawassee county, about lakes" (Dr. W. C. Brownell); "migrant at Plymouth" (J. B. Purdy); "migrant in Allegan Co." (S. E. White); Mr. White also reports it at Mackinac Island; taken by E. E. Brewster, May 24, 1891, at Iron Mountain; "breeds in British America" (Dr. A. K. Fisher); "so far as we know breeds north of the United States" (H. Nehrling); "this and the preceding species breeds far north of us" (Prof. J. A. Allen).

109-243a-(624). *Tringa alpina pacifica Coues.* RED-BACKED SANDPIPER; BLACK-BELLIED SANDPIPER; AMERICAN DUNLIN.

"Migrant, not common, few taken in spring" (Dr. M. Gibbs); "breeds in Sanilac county" (W. A. Oldfield); "one bird taken at Plymouth in the spring of 1891" (J. B. Purdy); "Allegan county, migrating May 25, 1891" (S. E. White, O. and O., Vol. 16, p. 9); "migrant" (Dr. J. B. Steere); prized for food.

110-244-(625). *Tringa ferruginea Brünn.* CURLEW SANDPIPER.

Very rare visitor; one taken by the late D. D. Hughes; reported in the catalogue of Kent Scientific institute by E. L. Moseley.

GENUS EREUNETES ILL.

111-246-(612). *Ereunetes pusillus (Linn.).* SEMIPALMATED SANDPIPER.

Common; "throughout the state" (A. H. Boies); migrant; "rare in Monroe Co." (Jerome Trombley); "taken as late as June and as early as August" (Dr. M. Gibbs); "Mackinac Island" (S. E. White); "Keweenaw Point" (Kneeland); "shore of Lake Michigan during August" (Butler's Birds of Indiana).

GENUS CALIDRIS CUV.

112-248-(627). *Calidris arenaria* (Linn.). SANDERLING.

"Common migrant near Lake Erie" (Jerome Trombley); "common on the shores of the Great Lakes, migrant" (Gibbs' Birds of Michigan); "very common, in flocks, on the shore of Lake Michigan" (Butler's Birds of Indiana).

GENUS LIMOSA BRISS.

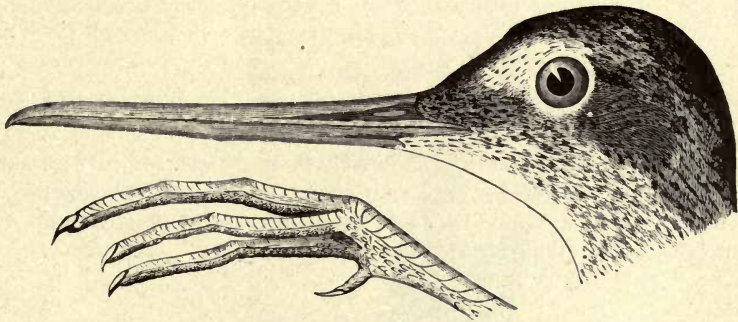
113-249-(628). *Limosa fedoa* (Linn.). MARBLED GODWIT; GREAT MARBLED GODWIT; DOE BIRD; DOUGH BIRD.

Rare; shores of the Great Lakes; May and Sept.; migrant; "taken near Lake Erie by gamesters (gunners)" (Jerome Trombley); "not uncommon about Lake Michigan" (Brayton); "migrant" (Dr. J. B. Steere); Davie, p. 117, says it is known to breed in Northern Ohio and Wisconsin; Prof. Ludwig Kumlein writes me that it breeds in Northern Wisconsin, and presumably in our Northern Peninsula, and Mr. H. Nehrling informs me that it breeds in Northern Michigan.

114-251-(629). *Limosa hamastica* (Linn.). HUDSONIAN GODWIT; LESSER DOE BIRD.

Rare; migrant; about Great Lakes; "taken near Lake Erie by gamesters" (Jerome Trombley); "not very rare about Lake Michigan" (Brayton); given doubtfully by Dr. J. B. Steere as a migrant; "taken at Niles and in Calhoun Co." (D. D. Hughes).

GENUS TOTANUS BECHSTEIN.



Greater Yellow Legs, natural size.

115-254-(633). *Totanus melanoleucus* (Gmel.). GREATER YELLOW LEGS; GREATER TELLTALE; GREATER TATTLER; STONE SNIPE.

Abundant; throughout the state; May and Oct.; migrant; "Keweenaw Point" (Kneeland); "common in spring at Iron Mountain" (E. E. Brewster); "common in Monroe Co." (Jerome Trombley); one of our most common long billed migrants; possibly may tarry occasionally and breed. Prof. Ludwig Kumlein writes me that this species breeds in our Northern Peninsula. Mr. H. Nehrling writes to the same effect. This and the following species are reported by Mr. A. W. Butler as breeding rarely in Northern Indiana.

116-255-(634). *Totanus flavipes* (Gmel.). YELLOW LEGS; LESSER TATTLER; YELLOW SHANKS.

Common; throughout the state; "abundant in Monroe Co." (Jerome Trombley); "Kent and Allegan counties" (S. E. White); "Iron Mountain" (E. E. Brewster); "Keweenaw Point" (Kneeland); embraced in Cabot's Birds of Lake Superior; common about the college; migrant; occasionally in summer; reported as breeding; "neither this nor the preceding species breeds at Plymouth" (J. B. Purdy); eggs three or four; often occurs in flocks.



Solitary Sandpiper, natural size.

117-256-(637). *Totanus solitarius* (Wils.). *SOLITARY SANDPIPER; SOLITARY TATTLER; WAGTAIL; TIP-UP; AMERICAN GREEN SANDPIPER.

Common; May to Sept.; abundant in the marshes about the college; "common about Hillsdale" (F. M. Falconer); "rare in Monroe county but does not breed" (Jerome Trombley); "Mackinac Island" (S. E. White); "Keweenaw Point" (Kneeland); breeds northward; nests on ground; not in flocks. This bird bobs its head instead of tipping its tail.

GENUS SYMPHEMIA RAFIN.

118-258-(632). *Symphemia semipalmata* (Gmel.). WILLET; SEMIPALMATED TATTLER.

Rare; summer resident; admitted doubtfully by Dr. Steere; May to September; Dr. Atkins reports taking this bird at Locke August 13, 1885; Dr. M Gibbs writes me that this bird has been shot at Grand Rapids; "Mackinac Island" (S. E. White); "Keweenaw Point" (Kneeland); table bird.

GENUS BARTRAMIA LESS.

119-261-(640). *Bartramia longicauda* (Bechst.). BARTRAMIAN SANDPIPER; BARTRAMIAN TATTLER; FIELD PLOVER; UPLAND PLOVER; PRAIRIE PLOVER.

Common; April to Sept.; reported from Wayne Co.; "Lenawee Co." (A. H. Boies); breeds; "does not breed in Monroe Co." (Jerome Trombley); "nests on ground in Kalamazoo Co., eggs four" (Dr. M. Gibbs); Davie, p. 125, says it is known to breed in several portions of Michigan; nests in May on the ground; eggs four, gray or buff, specked with different shades of brown; excellent table bird. This species is embraced in Dr. Sager's list of 1839.

GENUS TRYNGITES CAB.

120-262-(641). *Tryngites subruficollis* (Vieill.). BUFF-BREASTED SANDPIPER.

Admitted doubtfully among Michigan birds by Dr. J. B. Steere; "rare, only twice taken, Sept. 17, 1875, and Sept. 14, 1872, not yet observed in spring" (Dr. M. Gibbs); rare; migrant; prized for table; "too rare for a game bird" (Prof. Ludwig Kumlein); "taken near Lafayette, Ind., in the spring of 1892" (A. W. Butler).

GENUS ACTITIS ILL.

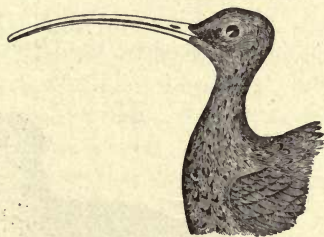


Spotted Sandpiper, natural size.

121-263-(638). *Actitis macularia* (Linn.). *SPOTTED SANDPIPER; SANDPIPER; PEET-WEET; SPOTTED TATTLER; WAGTAIL; TIP-UP; TEETER TAIL.

Exceedingly abundant; "throughout the state" (A. H. Boies); April to Oct.; "abundant in Monroe Co." (Jerome Trombley); "Mackinac Island" (S. E. White); "very abundant at Iron Mountain" (E. E. Brewster); "Keweenaw Point" (Kneeland); breeds abundantly; nests in April, on the ground, in the garden, field or woodland; eggs four, yellowish white, with spots of muddy brown. The name, Tip-up, comes from the habit of jerking its tail which it shares with several other species. "The young are beautiful little things, and run about, soon after hatching, in a very sprightly manner" (L. S. Foster).

GENUS NUMENIUS BRISS.



Long-billed Curlew.

122-264-(643). *Numenius longirostris* Wils. LONG-BILLED CURLEW; SICKLE-BILLED CURLEW.

Rare; migrant; "rare near Lake Erie" (Jerome Trombley); admitted doubtfully among Michigan migrants by J. B. Steere; "breeds in the Upper Peninsula" (H. Nehrling); valuable table bird.

123-265-(645). *Numenius hudsonicus* Lath. HUDSONIAN CURLEW; JACK CURLEW; SHORT-BILLED CURLEW.

Very rare; "only two taken to my knowledge" (Gibbs' Birds of Michigan); "never seen in Monroe Co." (Jerome Trombley); admitted doubtfully, by Dr. J. B. Steere among Michigan migrants.

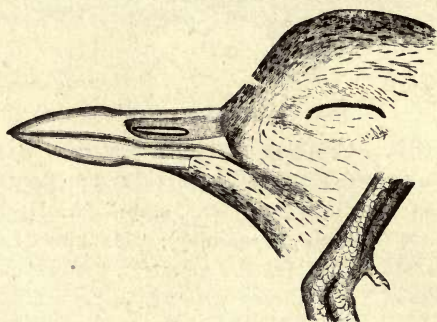
124-266 (646). *Numenius borealis* (Forst.). ESKIMO CURLEW.

Exceedingly rare; one specimen reported by Dr. M. Gibbs; admitted doubtfully by Dr. J. B. Steere; Benj. Syke, of Kalamazoo, records one as late as Oct. 28; migrant; gregarious; about marshes; excellent for table.

FAMILY CHARADRIIDÆ. PLOVERS.

Feed on insects, crustaceans, molluscs, etc.; eggs usually dark and spotted; some species valuable as game birds.

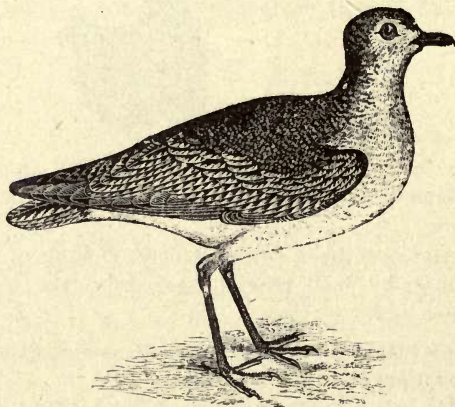
GENUS CHARADRIUS LINN.



Black-bellied Plover, natural size.

125-270 (580). *Charadrius squatarola* (Linn.). BLACK-BELLIED PLOVER; BULL-HEAD.

Rare; migrant; A. H. Boies reports it from Lenawee and Hillsdale counties; "Monroe Co." (Jerome Trombley); "once as late as Oct. 20" (Dr. M. Gibbs); "Keweenaw Point" (Kneeland); "a regular migrant along the Great Lakes, Superior included" (Prof. Ludwig Kumlein).

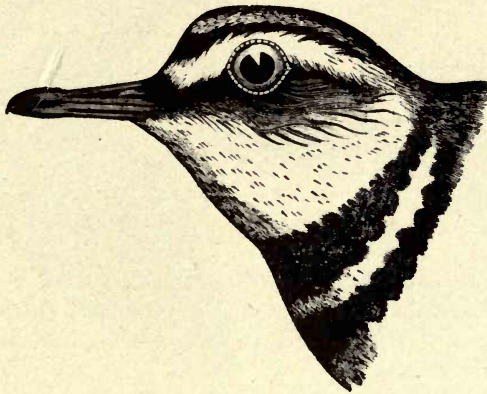


Golden Plover, in fall or winter, reduced.

126-272 (581). *Charadrius dominicens* Müll. AMERICAN GOLDEN PLOVER; GREEN-BACK.

Common; throughout the state; April and Oct.; migrant. This bird is not mentioned by Dr. H. A. Atkins, but it has been taken here repeatedly; Mr. Jerome Trombley reports it as a common migrant near Lake Erie; "large flocks appeared at Lansing in Sept., 1890, and many were killed" (J. E. Nichols); taken at Plymouth by J. B. Purdy; "Keweenaw Point" (Kneeland); "common transient in the autumn, but rarely seen in spring, often in large flocks, most abundant about Sept. 28, in Kalamazoo Co." (Dr. M. Gibbs).

GENUS *ÆGIALITIS* BOIE.



Killdeer, natural size.

127-273 (584). *Ægialitis vocifera* (Linn.). *KILLDEER; KILLDEER PLOVER; RING PLOVER.

Very abundant; throughout the entire state; common from March to Dec.; often seen in winter; valuable as a destroyer of insects; our most common plover; frequents gardens, pastures and roadsides; "Mackinac Island" (S. E. White); "occasional at Iron Mountain" (E. E. Brewster); breeds; nests often as early as March, on the ground, usually on a knoll, in gardens and pastures; eggs four, yellowish white, spotted with dark brown. Dr. Brownell writes me that the eggs are always arranged in the form of a cross with the small or pointed ends towards the center.

128-274 (586). *Ægialitis semipalmata* Bonap. *SEMI-PALMATED PLOVER; RING PLOVER; RING NECK.

Common; migrant; May and Sept.; Jerome Trombley has taken it in Monroe Co.; "Upper Peninsula" (A. H. Boies); "Keweenaw Point" (Kneeland); taken by J. B. Purdy at Plymouth; "common at Morrice" (Dr. W. C. Brownell); said to be a summer resident north. We have taken this bird here at the college in early spring. Dr. Atkins reports taking one at Locke Aug. 19, 1884; "northern part of Indiana" (Butler's Birds of Indiana).

129-277 (587). *Ægialitis meloda* (Ord). PIPING PLOVER; PIPING RING PLOVER.

Rather rare; migrant; "rare migrant in Monroe Co." (Jerome Trombley); "I have shot it as a migrant in Allegan Co." (S. E. White); embraced in the lists of Hughes, Boies, Covert and Gibbs. These notes may refer to the next species.

130-277a-(588). *Egialitis meloda circumcincta* Ridgw. BELTED PIPING PLOVER.

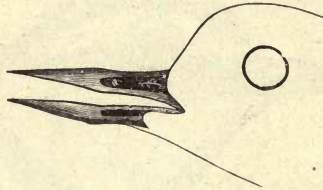
"Migrant, not common. Summer resident northward" (Butler's Birds of Indiana); "common summer resident along the shore of Lake Michigan" (Dr. Brayton). Prof. A. W. Butler thinks this species more common in Northern Indiana than the preceding. I have no positive evidence of the occurrence of this bird in our state.

FAMILY APHRIZIDÆ. SURF BIRDS AND TURNSTONES.

Feed on crustaceans, shell fish, etc.

SUBFAMILY ARENARIINÆ. TURNSTONES.

GENUS ARENARIA BRISS.



Turnstone, natural size.

131-283-(598). *Arenaria interpres* (Linn.). TURNSTONE.

"A rare irregular migrant in Kalamazoo Co., taken once as late as May 2, showing it to be a spring migrant" (Dr. M. Gibbs); "common along Lake Michigan" (Brayton); included in Sager's list of 1839.

ORDER GALLINÆ. GALLINACEOUS BIRDS.

These birds are granivorous and possess strong claws for scratching. They include most of our domestic birds.

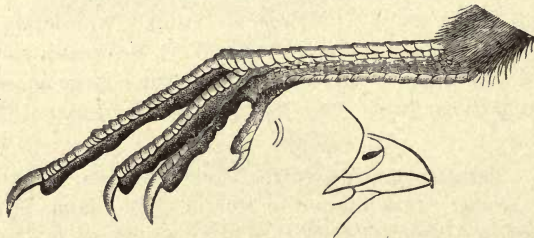
SUBORDER PHASIANI. PHEASANTS, GROUSE, PARTRIDGES, QUAIL, ETC.

FAMILY TETRAONIDÆ. GROUSE, PARTRIDGES, ETC.

Feed on insects, grass, seeds, etc.; fine game birds; flocks; generally polygamous; do little injury, and are of immense economic importance.

SUBFAMILY PERDICINÆ. PARTRIDGES.

GENUS COLINUS LESS.



Quail, natural size.

132-289-(571). *Colinus virginianus* (Linn.). *BOB WHITE; QUAIL; PARTRIDGE.

Very common; throughout the southern peninsula; all seasons of the year; large flocks; very tame; frequent lawns and barnyards in winter; "never seen at Iron Mountain" (E. E. Brewster); "not generally found much north of Petoskey, though two were seen on Mackinac Island, September, 1890" (S. E. White); "Keweenaw Point" (Kneeland); breeds; nests in summer, occasionally as late as September. on the ground; eggs white, pointed at one end, numerous; J. B. Purdy has taken



Quail, male and female, natural size.

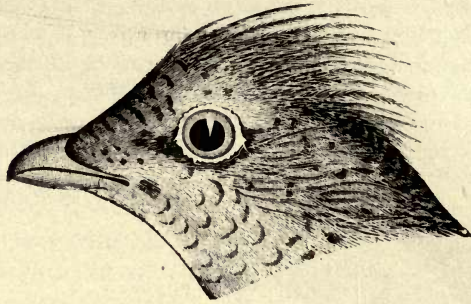
twenty-one eggs from a single nest; "I took thirty-eight eggs from one nest" (Dr. W. C. Brownell); prized as a game bird; very useful in destroying insects, seeds of weeds, etc.; this species has been temporarily protected in our state; "so excellent a friend should be permanently protected" (Prof. Jas. Satterlee); "more common in Monroe county than it was ten years ago" (Jerome Trombley). The name partridge is used south and east.

GENUS DENDRAGAPUS ELLIOT.

133-298-(555). *Dendragapus canadensis* (Linn.). CANADA GROUSE; SPRUCE PARTRIDGE.

Common north; I have it from Ionia Co.; taken in winter; "formerly very abundant in all the scrub pine thickets in the northern counties, very tame and stupid, and so, easily exterminated" (C. J. Davis); "does not inhabit the shore counties of North-western Michigan, I only find it near Higgins and Houghton Lakes" (Dr. M. L. Leach); "common at Au Sable" (N. A. Eddy in O. and O., Vol. IX, p. 41); "Upper Peninsula" (A. H. Boies); "rare on Keweenaw Point" (Kneeland); "occasional at Iron Mountain" (E. E. Brewster and S. E. White); "not found in Kalamazoo Co., but common north" (Dr. M. Gibbs); Dr. W. C. Brownell took a straggler in Washtenaw Co. in the fall of 1887; included in Sager's list of 1839, and Cabot's of 1850; breeds in the northern part of the state. I have reports of its breeding in the Northern Peninsula; "I know that it breeds in Northern Michigan and the Northern Peninsula" (Prof. Ludwig Kumlein); "common in the Gogebic region" (H. Nehrling.)

GENUS BONASA STEPH.



Ruffed Grouse, natural size.

134-300-(565). *Bonasa umbellus* (Linn.). *RUFFED GROUSE; "PARTRIDGE," in Michigan; "PHEASANT," south.

Very common, though decreasing in number; throughout the entire state; "still abundant about Ann Arbor" (Dr. J. B. Steere); "common at Au Sable" (N. A. Eddy); "common at Iron Mountain" (E. E. Brewster); "very common at Keweenaw Point" (Kneeland); breeds; nests in June, on the ground, nests said to be often concealed by logs, etc.; "I never find them so" (Prof. Ludwig Kumlein); "always covers eggs with leaves before leaving the nest" (J. B. Purdy); I have always found the nests of eggs entirely exposed; eggs six to fifteen, usually ten to twelve, creamy white to buff, occasionally spotted with fine reddish dots; seen through the year; excellent game bird; occasionally fly into houses in autumn through windows. This bird is known by the drumming of the male with its wings, which may be heard for a long distance. This bird eats berries, nuts, especially beech nuts, and insects. In the autumn it eats many grasshoppers and such caterpillars as the oak caterpillar, *Edema albifrons*. My son, A. B. Cook, thinks that they never cover their eggs, except as they accidentally sweep the leaves over the eggs, as they take wing. The drumming, for which this bird is noted, is probably caused by the wings striking the air.

GENUS LAGOPUS BRISS.

135-301-(568). *Lagopus lagopus* (Linn.). WILLOW PTARMIGAN.

Reported from Upper Peninsula (See Gibbs' list of Michigan Birds); "habitat Minnesota" (Birds of Minnesota, Hatch, 1892, p. 162); "Keweenaw Point" (Kneeland); "south to northern New York" (Jordan); pure white in winter.

GENUS TYMPANUCHUS GLOGER.

136-305-(563). *Tympanuchus americanus* (Reich.). *PRAIRIE HEN; PRAIRIE CHICKEN; PINNATED GROUSE.

Quite common; formerly very rare here, but common in the southwestern part of the State; "formerly abundant, but now extinct at Ann Arbor" (Dr. J. B. Steere); "extinct in Monroe county for more than thirty years" (Jerome Trombley); "very common in Southwestern Michigan" (Prof. J. W. Simmons); more frequent in prairie region; seen through the year; breeds; nests in June, on the ground; nest said to be often concealed by leaves, etc.; eggs eight to fourteen, gray, often specked with brown; destroys many insects; excellent game bird; Dr. Atkins found a nest in June, 1879; he reports them very common at Locke in January, 1878; embraced in Sager's list of 1839; "should be carefully protected, as it is a valuable friend to the farmer" (Dr. A. K. Fisher).

FAMILY PHASIANIDÆ. PHEASANTS; ETC.

Large fine game birds, gregarious, polygamous.

SUBFAMILY MELEAGRINÆ. TURKEYS.

GENUS MELEAGRIS LINN.

137-310 (554). *Meleagris gallopavo* Linn. *WILD TURKEY.

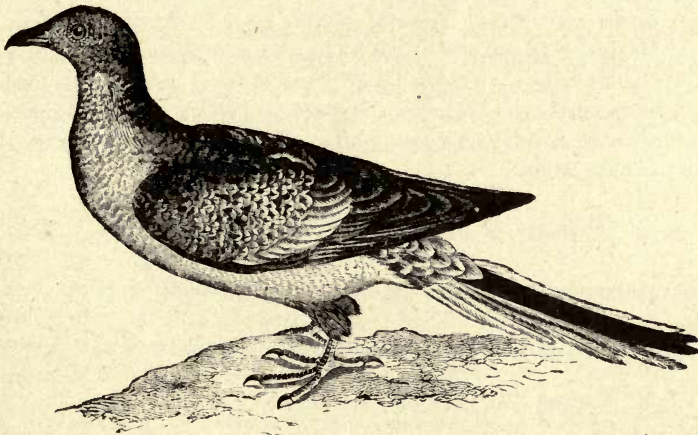
Once very common; "none observed in Upper Peninsula" (A. H. Boies); formerly large flocks were seen on the college farm; now extinct except north; "extinct in Mont-calm county" (Prof. Jas. Satterlee); "I do not believe there is a turkey north of an east and west line passing through Houghton Lake" (Dr. M. L. Leach); all seasons of the year; breeds; nests in May, on the ground; eggs nine to twelve, occasionally as many as eighteen, creamy white, spotted with brown; "eggs creamy white thickly spotted with small specks of rusty brown and umber" (H. Nehrling); excellent for table; Jerome Trombley reports an old bird, with brood, in Monroe county, in 1888; J. B. Purdy writes me that young were taken in Wayne in 1888, and eggs in Kent county in 1891. It is an interesting fact that this species is omitted in the excellent list of the late Dr. A. Sager. A number of fine turkeys were caught here a few years ago in a log pen into which they passed through a hole dug in the ground, underneath one side, as they picked up corn which was placed in this trench. Once in the pen, they only looked up, and so they were successfully caged.

ORDER COLUMBÆ. PIGEONS.

FAMILY COLUMBIDÆ. PIGEONS AND DOVES.

These birds are granivorous, as well as insectivorous.

GENUS ECTOPISTES SWAIN.



Wild Pigeon, reduced.

138-315 (543). *Ectopistes migratorius* (Linn.). *WILD PIGEON; PASSENGER PIGEON.

Once very common, now equally rare; as a boy I saw immense flocks in Shiawassee

Co., so large as to nearly cloud the sky; "became extinct at Ann Arbor about 1875" (Dr. J. B. Steere); "I have seen flocks of from 30 to 80 in Kent Co." (S. E. White); "became extinct in Monroe Co. in 1885" (Jerome Trombley); "last seen at Morrice in 1881, when I shot 52" (Dr. W. C. Brownell); reported from Benzie and Presque Isle counties; "Mackinac Island" (Dr. M. Gibbs); "seen at Keweenaw Point as early as May 4" (Kneeland); March to Oct., sometimes taken in winter; formerly bred in all parts of the state, abundantly north; large breeding roosts formerly at Shelby, Mich. (Forest and Stream, Vol. XIV, pp. 231, 232); nest and eggs similar to those of the next species, except that this one nests in colonies and "lays one egg at a sitting" (Dr. M. Gibbs); valuable for table; destroys grain. For interesting description of this bird in Michigan see article by Mr. Wm Brewster, in Auk, Vol. VI, Oct., 1889, p. 285; and for description of its breeding and migration in Michigan, see article in Scientific American, Vol. XLII, 1883, p. 343.

GENUS ZENAIDURA BONAP.



Carolina Dove, natural size.

139-316-(544). *Zenaidura macroura* (Linn.) *MOURNING DOVE; CAROLINA DOVE.

Very common; throughout the state; found in all months, but rare in winter; during this very cold winter of 1892-3 several of these birds have been seen daily about my corn crib; "Mackinac Island" (S. E. White); "from May to Sept." (J. B. Purdy); breeds; nests in May, R. H. Wolcott found a nest July 18, 1892, in low bushes, in low trees, in orchards, on fences, rarely on the ground, often close to house, while the pigeon prefers dense woods; eggs two, white. These birds are often seen along the roadside and in barnyards.

ORDER RAPTORES. BIRDS OF PREY.

Strong, carnivorous, with hooked beaks and strong talons.

SUBORDER SARCORHAMPHI. AMERICAN VULTURES.

FAMILY CATHARTIDÆ. AMERICAN VULTURES.

Birds of Prey and carrion eaters; valuable as scavengers.

GENUS CATHARTES ILLIGER.

140-325-(537). *Cathartes aura* (Linn.) TURKEY VULTURE; TURKEY BUZZARD.

Very rare; E. L. Moseley, who has lived twenty summers in Branch county, has

never seen one in Michigan; F. M. Falconer writes me "not very rare in the spring of 1892, at Hillsdale"; "throughout the state" (A. H. Boies); embraced in Fox's list of 1853 of Birds about Detroit; Mr. L. W. Watkins tells me that they are common in Jackson and Washtenaw counties every year; they are never seen here; Dr. Atkins makes no mention of them; C. J. Davis, Lansing, Michigan, has one in his collection taken at Fowlerville, Livingston Co.; "becoming more common each year" (Dr. M. Gibbs); Prof. J. W. Simmons has taken them in Van Buren Co.; Geo. D. Sones, of Fresno, Cal., writes me that he took them at Ross, Kent Co., in 1886 and 1887; "more common than formerly in Wayne Co." (J. B. Purdy); "rare in Monroe Co., where a nest with two young was taken at Petersburg, in June, 1890" (Jerome Trombley); "Mr. Elmer Durfee took female and two eggs in Kent Co. in 1892, in the large end of a hollow tree in a swamp" (Dr. W. C. Brownell); "breeds in Wayne and Kent counties" (J. B. Purdy); "occasional in Kent Co., two eggs were taken by me in 1891, in Allegan Co., the only ones taken in the state" (S. E. White).

SUBORDER FALCONES. VULTURES; FALCONS; HAWKS, ETC.

FAMILY FALCONIDÆ. VULTURES; FALCONS; HAWKS, ETC.

Diurnal birds of prey; feed on mice, insects and other birds; like the owls, beneficial, as determined by extensive research by United States government investigators; most of the species feed almost exclusively on mice and insects; (See "Hawks and Owls of the United States in their Relation to Agriculture," by Dr. A. K. Fisher, Department of Agriculture, Washington, 1893); eggs, like those of the owls, nearly spherical, usually specked.

SUBFAMILY ACCIPITRINÆ. KITES; BUZZARDS; HAWKS, ETC.

GENUS ELANOIDES VIEILL.

141-327-(493). *Elanoides forficatus* (Linn.). SWALLOW-TAILED KITE.

Said to occur in Michigan; probably an accidental straggler, as the bird is a great wanderer; reported in our fauna by the late D. D. Hughes; a pair shot in Monroe Co., June 19, 1882 (see Bulletin of Nuttall Ornithological Club, Vol. VIII, Oct., 1882, p. 250). The late Mr. Collins secured a specimen near his home in De troit.

GENUS ELANUS SAVIG.

142-328-(492). *Elanus leucurus* Vieill. *WHITE-TAILED KITE; BLACK-SHOULDERED KITE.

Very rare; Dr. H. A. Atkins reports taking it at Locke, Ingham Co.; Mr. S. E. White writes me that he took one in Kent Co., April 10, 1888, and has the specimen; Mr. A. B. Covert reports taking two specimens in Washtenaw Co.; "extremely doubtful, are the specimens preserved?" A. K. Fisher.

GENUS ICTINIA VIEILL.

143-329-(491). *Ictinia mississippiensis* (Wils.). MISSISSIPPI KITE.

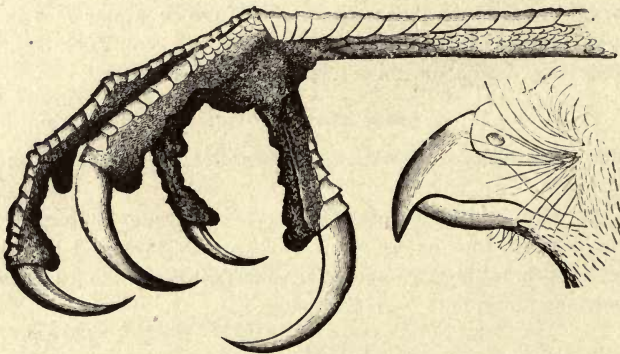
Said to occur in Michigan; exceedingly rare; the late Hon. D. D. Hughes reported one specimen from Cass Co.; Prof. A. W. Butler gives it as a rare visitor in Northern Indiana.

GENUS *CIRCUS* LACEPEDE.Ear parts of *Circus*.**144 331-(489).** *Circus hudsonius* (*Linn.*). *MARSH HAWK; MOUSE HAWK; HARRIER.

Abundant; throughout the State; summer resident; "common in Monroe county" (Jerome Trombley); "Mackinac Island" (S. E. White); "Keweenaw Point" (Kneeland); breeds; nests on the ground; eggs three to six, greenish white, often spotted with brown. We have taken the nests and young at this place. "This valuable bird should be protected by law" (J. B. Purdy).

GENUS *ACCIPITER* BRISS.**145 332 (494).** *Accipiter velox* (*Wils.*). *SHARP-SHINNED HAWK.

Common; throughout the state; April to August; occasional in winter; "Iron Mountain" (E. E. Brewster); "Keweenaw Point" (Kneeland); "Mackinac Island" (S. E. White); probably breeds; Dr. M. Gibbs writes me that it is not known to breed in Kalamazoo county; nests in trees high up from the ground; eggs three to five, rarely seven; "a single bird has been known to lay seventeen eggs in succession" (A. W. Butler), bluish or greenish white, spotted at large end with brown. This is one of our most common small hawks, it is brave and takes toll of the fancier; "this and the following species are the only two common hawks that are injurious" (Dr. A. K. Fisher); "too small I think to be classed as a chicken hawk" (Prof. Ludwig Kumblein); "I have seen it kill chickens" (S. E. White).



Cooper's Hawk, natural size.

146 333 (495). *Accipiter cooperi* *Bonap.* *COOPER'S HAWK; CHICKEN HAWK.

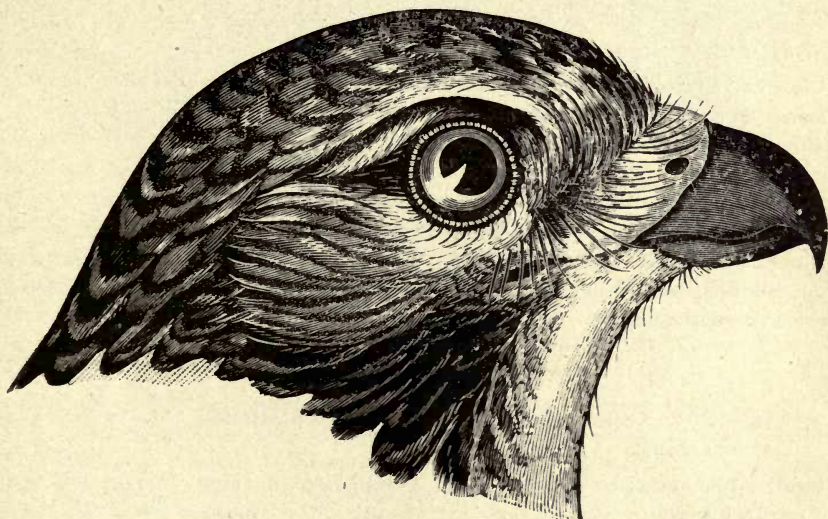
Very common; throughout the state; May to October; E. L. Moseley shot one at Grand Rapids March 27, 1886; "Mackinac Island" (S. E. White); "Keweenaw Point"

(Kneeland); breeds; nests in May in trees; "took set of five eggs at Plymouth, April 24, 1892" (J. B. Purdy); "breeds commonly in Kent county" (S. E. White); F. M. Falconer took two eggs from a nest in the spring of 1892, and later took five from the same nest; "K. R. Wilhelm of Kalamazoo climbed to nine nests from twenty to forty-five feet high in one day and secured twenty-three eggs" (Dr. M. Gibbs); eggs two to six, undistinguishable from those of the Marsh Hawk; free to visit poultry yards. I have known one to dart down and carry off a chicken within a rod of where I stood; Dr. A. K. Fisher, than whom there is hardly better authority, writes me: "The true Hen Hawk, quite injurious, destroys pigeons and poultry, probably the only common harmful hawk." Prof. A. W. Butler writes me to the same effect. It is sometimes known as blue hawk, blue darter (South) and blue-tailed hawk.

147-334-(496). *Accipiter atricapillus* (Wils.). AMERICAN GOSHAWK.

Occasionally seen in summer; more frequently in winter; more common north, where it breeds; Dr. M. Gibbs writes me that it surely breeds in Wexford Co.; one in our museum from Berrien Co.; taken by A. H. Boies in Hillsdale Co., and by S. E. White in Kent Co., and Mackinac Island; one killed north by Elmer Durfee; Mr. Levi Broas has a fine one in his collection taken by him in Ionia Co.: "this and the two preceding species are the most harmful of the hawks, the others rarely prey upon poultry" (Prof. J. A. Allen).

GENUS BUTEO CUV.



Red-tailed Hawk, natural size.

148-337-(516). *Buteo borealis* (Gmel.). *RED-TAILED HAWK; RED-TAILED BUZZARD; HEN HAWK.

Very common; throughout the state; "Iron Mountain" (E. E. Brewster); "Mackinac Island" (S. E. White); "Keweenaw Point" (Kneeland); this and the next species are among our most common hawks; "this species and the Red-shouldered are very valuable in destroying noxious rodents and insects, and when hard pressed, take a few of

the less active fowls" (Dr. A. K. Fisher); seen soaring high up in the air; "less common than the next species at Morrice" (Dr. W. C. Brownell); found at all months, "but not common in winter, indeed much less so than the next species" (E. L. Moseley); breeds; Mr. K. R. Willhelm has taken over 150 eggs in Kalamazoo Co. in four years; nests in March and April, in high trees; nest very large; eggs two to four, white, often soiled, nearly always spotted with reddish brown. This is the common Hen Hawk of the farmers.

149-339-(520). *Buteo lineatus* (Gmel.). *RED-SHOULDERED HAWK; RED-SHOULDERED BUZZARD; HEN HAWK.

Very abundant; throughout the state; March to Sept.; occasional in winter; "Mackinac Island" (S. E. White); general and nesting habits and eggs much as in the preceding species except the eggs are a trifle smaller and more coarsely specked; B. Swales has taken a set of five eggs; K. R. Willhelm has robbed over ninety nests in Kalamazoo Co. Dr. A. K. Fisher states that both of these species are our friends; Prof. Ludwig Kumlein writes me that this and the last species rarely take poultry, if they ever do.

150-342-(523). *Buteo swainsoni* Bonap.. SWAINSON'S HAWK.

Exceedingly rare; one killed by A. H. Boies in Hillsdale Co; one killed in Genesee Co., where it was identified by Dr. M. Miles (Miles' Birds of Michigan, p. 231); Mr. Jerome Trombley writes me that he has taken the nest and eggs in Monroe Co.; "the food of this bird is largely composed of locusts" (L. S. Foster).

151-343-(524). *Buteo latissimus* (Wils.). BROAD-WINGED HAWK.

Common; summer resident; "common at Ann Arbor" (Dr. J. B. Steere); "Hillsdale and Lenawee counties" (A. H. Boies); "a retired bird, found only in deep woods" (Dr. M. Gibbs); E. E. Brewster thinks this species rather common at Iron Mountain; "Mackinac Island" (S. E. White); breeds; Dr. Gibbs took the eggs near Kalamazoo, May 27, 1875; nests and eggs taken by Jerome Trombley at Petersburg, in Monroe Co., where it is not uncommon; S. E. White writes that he took nest and four eggs in Kent Co., June 25, 1891; Dr. A. K. Fisher writes that it destroys myriads of locusts. These hawks sometimes occur in flocks of several hundred during autumnal migrations" (Prof. Ludwig Kumlein).

GENUS ARCHIBUTEO BREHM.

152-347a-(525). *Archibuteo lagopus sancti-johannis* (Gmel.). *AMERICAN ROUGH-LEGGED HAWK.

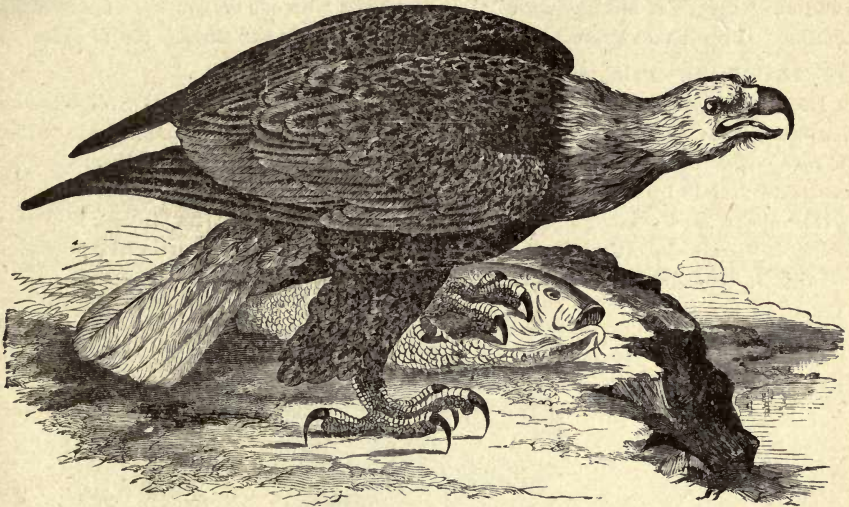
Rare; Sept. to May; Dr. Atkins reports finding a nest in Locke, May 18, 1876, which was doubtless an error; "they do not breed in the United States" (Dr. A. K. Fisher); "one specimen taken at Plymouth in fall of 1892" (J. B. Purdy); "one taken by Mr. Dempel, of Hillsdale, April 7, 1892" (F. M. Falconer); "Mackinac Island and Kent Co." (S. E. White); "Keweenaw Point" (Kneelan); "Iron Mountain Oct. 20, 1892" (E. E. Brewster); "rare and only in winter in Monroe Co." (Jerome Trombley); Prof. Ludwig Kumlein, of Milton College, Wisconsin, writes me that he has taken one nest in Dane Co., Wisconsin, and one other nest in that state with two young in it, but he thinks this species not a regular breeder in the limits of the United States. This species is embraced in Dr. A. Sager's list of 1839. "Feeds almost entirely on small rodents" (Dr. A. K. Fisher).

GENUS AQUILA BRISS.

153 349-(532). *Aquila chrysaëtos* (Linn.). GOLDEN EAGLE.

Rare; one in our museum taken in Clinton county, and one from Northern Michigan; "taken occasionally in Southern Michigan, a rare straggler from the north" (Dr. M. Gibbs); one taken in Kalamazoo Jan. 1, 1892 (R. F. Judson in O. and O., Vol. XVII, 1892, p. 9); A. H. Boies reports it from the Upper Peninsula and from Hillsdale county; "not uncommon in the Gogebic region" (H. Nehrling); Jerome Trombley has seen it at the mouth of the Raisin River in Monroe county; "taken in Kalamazoo county" (Dr. M. Gibbs); probably nests in the northern part of the state.

GENUS HALIÆTUS SAVIG.



Bald Eagle, reduced.

154 352-(534). *Haliaëtus leucocephalus* (Linn.). * BALD EAGLE.

Not rare, especially in the uninhabited regions of the north; "rare in Monroe Co., but a pair have their nest on the Raisin River near its mouth" (Jerome Trombley); all months of the year; two in our museum killed in January, one from Ingham and the other from Shiawassee county; found common at Bay City by N. A. Eddy (O. and O., Vol. IX, p. 4); "Grand Traverse county" (Dr. M. L. Leach); "common in the Upper Peninsula" (S. E. White); "quite common in the Gogebic region of the Northern Peninsula" (H. Nehrling); breeds; "a pair of young taken from nest at Byron in spring of 1892" (J. B. Purdy); "breeds in Cheneaux Islands, Mackinaw straits" (Dr. M. Gibbs); "breeds on Keweenaw Point" (Kneeland); nests in tall trees, "using the same nest year after year" (C. J. Davis); eggs two, rarely three, nearly spherical, dirty white. The late Prof. W. K. Kedzie secured two of the young here in 1868, which he reared to maturity; "I have caught them alive in steel traps mounted on top of poles" (S. E. White). We have only these two eagles in United States. The young differ so widely from the adult that many suppose that we have several species.

SUBFAMILY FALCONINÆ. FALCONS.

GENUS FALCO LINN.

155 354a-(498). *Falco rusticolus gyrfalco* (Linn.). GYRFALCON; JERFALCON.

"Said to have been taken in the state in winter" (Gibbs' Birds of Michigan);

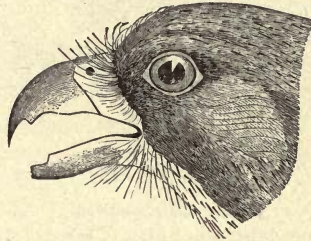
"probably on Keweenaw Point" (Kneeland); "south to the United States in winter" (Jordan). Dr. Gibbs writes me that he should retain this, as his authority was the late Dr. G. B. Wilson.

156-356-(503). *Falco peregrinus anatum* (Bonap.). *DUCK HAWK; PEREGRINE FALCON.

Rare; taken by Dr. Atkins at Locke, Nov. 2, 1881; throughout the state; "rare at Ann Arbor" (Dr. J. B. Steere); "one specimen taken in Monroe Co. in 1886" (Jerome Trombley); "two Michigan specimens in the collection of the Kent Scientific Institute at Grand Rapids" (E. L. Moseley); Davie says it has been known to breed in Michigan; rather common northward, and doubtless found in spring, summer and fall but not in winter; "breeds at Michigamme" (Davie, p. 187); "breeds on southern shore of Lake Superior" (Prof. Ludwig Kumlein). This species is given in Sager's list of 1839.

157-357-(505). *Falco columbarius* Linn. *PIGEON HAWK.

Rare; throughout the state; "occasional at Ann Arbor" (Dr. J. B. Steere); all seasons, or at least a summer resident; "taken at Grand Rapids" (E. L. Moseley); "Monroe Co., rare" (Jerome Trombley); "Mackinac Island" (S. E. White); "Keweenaw Point" (Kneeland); taken by Mr. A. H. Boies in Hillsdale Co., where he has seen several; taken by Dr. Atkins in February, March and April; "breeds" (Dr. M. Gibbs); "breeds in Northern Peninsula" (Prof. Ludwig Kumlein); "may breed in northern counties, but even this is doubtful" (Prof. J. A. Allen).



Sparrow Hawk, natural size.

158-360-(508). *Falco sparverius* Linn. *AMERICAN SPARROW HAWK.

Very abundant; throughout the state; April to Sept.; "Mackinac Island" (S. E. White); "Keweenaw Point" (Kneeland); "occurs at Iron Mountain, Upper Peninsula" (L. W. Watkins); "very common at Iron Mountain" (E. E. Brewster); breeds; nests in holes in trees which are usually decayed; eggs four to seven, nearly spherical reddish white, spotted with brown; a beautiful, but bold "and useful friend" (A. K. Fisher); kills immense numbers of mice and insects, and occasionally birds and chickens; "lives chiefly on insects" (Prof. J. A. Allen); "I doubt if this bird ever kills chickens" (Prof. Ludwig Kumlein); "I have never seen it kill a chicken, it should be protected by law" (J. B. Purdy).

SUBFAMILY PANDIONINÆ. OSPREYS.

GENUS PANDION SAVIG.

159-364-(530). *Pandion haliaëtus carolineus* (Gmel.). *AMERICAN OSPREY; FISH HAWK.

Rather rare; "not rare at Ann Arbor" (Dr. J. B. Steere); "rare in Monroe county

but breeds near the lake" (Jerome Trombley); throughout the entire state; bird and young taken at the college in 1868; taken by Dr. Atkins at Locke, April 5, 1872; "occasional in the northern counties about the inland lakes" (C. E. Davis); "only seen at Plymouth in fall and winter, saw three at one time on an apple tree, February, 1892" (J. B. Purdy); in manuscript list of Fox; "common on Mackinac Island, several seen every day" (S. E. White); "common at Les Cheneaux Islands" (E. B. Boise); "Iron Mountain" (E. E. Brewster); "Keweenaw Point" (Kneeland); breeds; nests in trees, on the ground, on rocks, etc.; nests often very bulky; eggs two to four; food fish.

SUBORDER STRIGES. OWLS.

FAMILY STRIGIDÆ. BARN OWLS.

Feed on rats, mice, insects and birds; very valuable.

GENUS STRIX LINN.

160-365-(461). *Strix pratineola* Bonap. AMERICAN BARN OWL.

"Rather rare, resident" (Gibbs' Birds of Michigan); we have never seen it here; Dr. J. B. Steere informs me that the same is true at Ann Arbor; "Sault Ste. Marie" (Chas. Bendire, Smithsonian Contribution to Knowledge, Vol. XXVIII, p. 325); one Michigan specimen reported in the catalogue of the Kent Scientific Institute by E. L. Moseley, who writes me that though common at Sandusky, Ohio, they are exceedingly rare in Michigan; recorded by A. H. Boies in 1875. A. B. Covert in 1878 and by Dr. M. Gibbs in 1879; "has been known to breed in Tippecanoe and Clinton counties, Ind.," (A. W. Butler).

FAMILY BUBONIDÆ. COMMON OWLS.

Nocturnal birds of prey; feed on rats, mice, insects and birds; do great good. Elaborate investigations by government experts prove them to be exceedingly valuable. See "Hawks and Owls of the United States in Relation to Agriculture," by Dr. A. K. Fisher, Department of Agriculture, Washington, 1893. Eggs, like those of hawks, short and spherical. "All owls, with the possible exception of the great horned owl, and nearly all hawks should be protected by law" (J. B. Purdy).

GENUS ASIO BRISS.



Raptorial foot of an Owl.

161-366-(472). *Asio wilsonianus* (Less.). *AMERICAN LONG-EARED OWL.

Rather rare; all seasons; "found in Hillsdale" (F. M. Falconer); A. H. Boies has taken several in Hillsdale County; "at Ann Arbor" Dr. J. B. Steere); "only seen at Plymouth in fall and winter" (J. B. Purdy); "rare in Kent County where it breeds" (S. E. White; "is common and breeds in Monroe County" (Jerome Trombley); breeds; "nests with five eggs taken in Wayne County in April and May" (B. H. Swales); "several nests taken about Kalamazoo" (Dr. M. Gibbs); nests bulky, in trees; "often lays in nests of other birds" (Samuels); eggs three to six, sometimes seven; we have taken this owl and its nests and eggs here at the college, Dr. Atkins took a specimen at Locke; one taken near Owosso November 25, 1892; "this is an efficient mouser" (A. K. Fisher).

162-367-(473). *Asio accipitrinus* (Pall.). SHORT-EARED OWL; PRAIRIE OWL.

Rather rare; "common in Hillsdale County" (F. M. Falconer); "not rare at Ann Arbor" (Dr. J. B. Steere); "taken not infrequently in Lenawee and Hillsdale Counties" (A. H. Boies); "Kent county" (S. E. White); all seasons; breeds; "nests on the ground" (Samuels). We have taken one of these birds here at the college. Dr. Atkins does not report it.

GENUS SYRNIUM SAVIG.



Barred Owl, reduced.

163-368-(476). *Syrnium nebulosum* (Forst.). *BARRED OWL; HOOT OWL.

Very common; throughout the State; found at all seasons; "Grand Traverse Co." (Dr. M. L. Leach); "our most common owl" (Geo. D. Sones); "Mackinac Island" (S. E. White); "Keweenaw Point" (Kneeland); "common at Iron Mountain" (E. E. Brewster); breeds; nests in holes in trees in March and April; eggs three, white, spherical; "Mr. A. Durfee has taken eggs from same nest for seven years" (Dr. W. C. Brownell). Like the Great Horned Owl, occasionally visits poultry houses. I think this more common than the Great Horned Owl, and, next to the Screech Owl, our most common species. Mr. A. B. Purdy finds that this owl will sit on her empty nest for some time after all eggs are taken.

GENUS SCOTIAPTERYX SWAIN.

164-370-(474). *Scotiapteryx cinerea* (Gmel.). GREAT GRAY OWL.

"Rare straggler from the north" (Dr. M. Gibbs); "Keweenaw Point" (Kneeland). I have never heard of this bird here. Mr. A. H. Boies informs me that he has noticed it in the Upper Peninsula. It is said to be partially diurnal. Brayton gives it as a rare winter visitant in Northern Indiana.

GENUS NYCTALA BREHM.

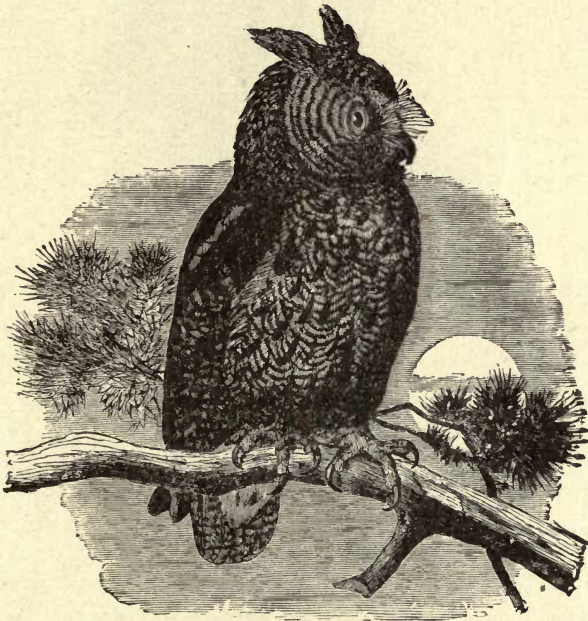
165-371-(482). *Nyctala tengmalmi richardsoni* (Bonap.). RICHARDSON'S OWL.

This bird has been taken in Ohio, Illinois and Wisconsin, and it is very likely in our Northern Peninsula fauna; "probably in winter" (J. A. Allen).

166-372-(483). *Nyctala acadica* (Gmel.). *SAW-WHET OWL; ACADIAN OWL.

Rare; found at all seasons; "rare now, but more common twenty years ago in Monroe County" (Jerome Trombley); "in swamps, at Ann Arbor, rare" (Dr. J. B. Steere); "not very rare in Lenawee and Hillsdale Counties" (A. H. Boies); "Keweenaw Point" (Kneeland); breeds; nests in hollow stumps, etc.; "nests in Oakland County" (W. C. Brownell in O. and G. Vol. XVI, p. 22); eggs four to seven; our smallest owl; I have this from Washtenaw and Ingham Counties. Dr. Atkins took one at Locke, Dec. 18, 1882, which weighed less than two ounces; Prof. James Satterlee has taken this bird at Greenville, Montcalm County, Mr. S. E. White has taken it in Allegan County, and Mr. Gilbert White has captured the downy young in Kent County; "breeds in Northern Indiana" (A. W. Butler).

GENUS MEGASCOPS KAUP.



Screech Owl, reduced.

167-373-(465). *Megascops asio* (Linn.). *SCREECH OWL; MOTTLED OWL.

Our most common owl; "very common at Ann Arbor" (Dr. J. B. Steere); found all months of the year; in summer, it whines and moans in shade trees about our houses, in winter we take it in out-buildings where it remains by day; "Upper Peninsula" (A. H. Boies); "Keweenaw Point" (Kneeland); breeds; nests, in May, in hollow trees; eggs four to six, frequently eight, rarely nine, white, subspherical; eats insects and English Sparrows; beneficial; "food, principally mice" (Prof. Ludwig Kumlein). There are two

phases of color, the gray and the brown, the gray is usually the most common, though occasionally the reverse seems true.

GENUS BUBO Cuv.



Great Horned Owl, much reduced.

168-375-(462). *Bubo virginianus* (Gmel.). *GREAT HORNED OWL; HOOT OWL.

Very common; throughout the state; all seasons; "occurs at Republic, Upper Peninsula" (L. W. Watkins); "common in Monroe Co." (Jerome Trombley); "rare at Ann Arbor" (Dr. J. B. Steere); "common in Grand Traverse Co." (Dr. M. L. Leach); "Keweenaw Point" (Kneeland); E. E. Brewster reports it from Iron Mountain; breeds; nests in February and March, in thick forests, in trees, nests of other birds especially, or in hollows of trees; "Frank Judson, of Kalamazoo, has found many nests, sometimes with a single egg, usually two, but in rare cases three" (Dr. M. Gibbs); F. M. Falconer found a nest Feb. 25, 1891, and the April following the Red-tailed Hawk occupied the same nest, each bird had occupied this nest in turn for years; eggs one to four, white, nearly spherical; two eggs taken at Plymouth March 20, 1892, by J. B. Purdy; this owl is often taken in hen houses; it should not be confused with the long-eared owl, though it is often called by that name; it is nearly as common here as the Screech and common Barred Owls. "Very valuable in rabbit infested districts, though sometimes troublesome in destroying poultry" (Dr. A. K. Fisher). One taken at the college, May 9, 1893, had entered a poultry house and destroyed three chickens. It was a large female and had only minute eggs in the ovaries.

169-375a-(463). *Bubo virginianus subarcticus* (Hoy.). WESTERN HORNED OWL.

Rare; "without doubt, as Mr. A. B. Covert says, rare or accidental in Michigan, as it occurs in Wisconsin and Northern Illinois" (A. W. Butler). It is possible that this bird and also the Arctic Horned Owl may be taken in Northern Michigan. Coues includes in No. 463 this and the sub-species *arcticus*.

GENUS NYCTEA STEPH.



SNOWY OWL, reduced.

170-376-(479). *Nyctea nyctea* (Linn.). *SNOWY OWL; WHITE OWL.

Common in winter; throughout the state; ten taken in December at South Haven, by E. H. Lockwood (American Field Vol. XXVII); we have taken several at this place; unlike other owls, it is amiable in confinement; Mr. L. W. Watkins killed one at Manchester, Mich., that had pounced down on a hen in broad daylight and killed it; "common in Grand Traverse county" (Dr. M. L. Leach); "Monroe county in severe winters" (Jerome Trombley); "very rare in winter, one taken in St. Joseph county in 1892" (A. H. Boies); "Keweenaw Point" (Kneeland); "food, mammals, birds, batrachians, fish, and molluscs" (L. S. Fisher).

GENUS SURNIA DUMERIL.

171-377a-(480). *Surnia ulula caparoch* (Müll.). AMERICAN HAWK OWL.

"Rare winter visitor" (Gibbs' Birds of Michigan); Mr. A. H. Boies has taken one in St. Joseph county; "south to Wisconsin" (Jordan). We have never seen this bird here; "Eagle River on Keweenaw Point" (Kneeland); embraced in the lists of Dr. Sager (1839), Cabot's Birds of Northern Peninsula, St. Ignace (1850), Dr. Miles (1861), and Covert's Birds of Washtenaw County (1881).

ORDER PSITTACI. PARROTS; MACAWS; PAROQUETS, ETC.

Mostly tropical birds, with very hooked beaks, and claws for climbing.

FAMILY PSITTACIDÆ. PARROTS.

Feed on cockle bur, tender twigs, blossoms and young fruit of the orchard trees, fruit and grain.

GENUS CONURUS KUHL.

172-382-(460). *Conurus carolinensis* (Linn.). CAROLINA PAROQUET.

Exceedingly rare; A. H. Boies believes he saw a pair at Mallory Lake in Hillsdale county in 1860; "remarkable but hardly possible" (Dr. M. Gibbs); Dr. Robert Ridgway informs me that the National Museum collection has a specimen labeled from Michigan. Prof. Ludwig Kumlein writes me that he has shot one specimen in Jefferson county, Wisconsin, and that his father, the late Thos. Kumlein, saw them in Wisconsin in the forties; if it occur in Michigan it comes as a very rare straggler from the south; usually seen in flocks; for a very interesting article on this bird see Auk, Vol, IX, Jan., 1892, pp. 49-56, where Prof. A. W. Butler gives a very complete monograph on the distribution of this species. It is stated (p. 50) that both Audubon and Wilson reported this bird from Michigan. which is certainly conclusive.

ORDER COCCYGES. CUCKOOS.

These are climbing birds with curved, not hooked beaks.

SUBORDER CUCULI. CUCKOOS.

* FAMILY CUCULIDÆ. CUCKOOS.

Feed on insects, even eating hairy caterpillars; very beneficial.

SUBFAMILY COCCYGINÆ. CUCKOOS.

GENUS COCCYZUS VIELL.



Yellow-billed Cuckoo, reduced.

173-387-(429). *Coccyzus americanus* (Linn.). *YELLOW-BILLED CUCKOO.

Formerly rather rare at this place, but now quite common; "less common in Monroe County than the next species" (Jerome Trombley); "common in Kalamazoo Co." (Dr. M. Gibbs); S. E. White reports this species very rare in Kent County; easily mistaken for the Black-billed Cuckoo; Dr. Atkins reported finding eggs of this species in the nest of the Black-billed Cuckoo; "the time of incubation of eggs, in the same set, very variable" (S. M. Falconer); breeds; I find both this and the next species nesting commonly about the college grounds; nests in trees; eggs two to six, usually four; like those of the next species only larger and a little lighter colored. We see that these birds are some like the European Cuckoo in the habit of using each others nests, which may account for the varying period of incubation.

174-388-(428). *Coccyzus erythrophthalmus* (Wils.). *BLACK-BILLED CUCKOO.

Formerly quite common at this place, but now rather rare; May to August; "very common in Kent County" (S. E. White); "very common in Kalamazoo County" (Dr. M. Gibbs); breeds; nests in June, in orchards, bushes or trees; eggs four to six, laid at intervals, blue; feed on hairy caterpillars. I have often seen them eat the Tent Caterpillar—*Clisiocampa americana*. Forbes found (see Report of Michigan Hort. Soc., 1891, p. 204) that seventy-five per cent of the food of birds of this species which he examined consisted of canker worms.

SUBORDER ALCYONES. KINGFISHERS.

Strong billed birds; food almost entirely fish.

FAMILY ALCEDINIDÆ. KINGFISHERS.

Feed on fish; found about streams; kill fish by using them as a hammer; utter a whirring note as they fly along the creek or river.

GENUS CERYLE BOIE.



Belted Kingfisher, reduced.

175-390-(423). *Ceryle alcyon* (Linn.). *BELTED KINGFISHER.

Very common; throughout the entire state; April to Sept.; "Grand Traverse Co." (Dr. M. L. Leach); "Mackinac Island" (S. E. White); "Keweenaw Point" (Kneeland); "occasionally in mild winters in Monroe Co." (Jerome Trombley); "common all through



Syndactyle foot of Kingfisher.

the Upper Peninsula" (L. W. Watkins); "common at Iron Mountain" (E. E. Brewster); breeds; nests, in a hole four to eight feet long in banks; "nests sometimes in hollow trees" (Dr. W. C. Brownell); nests along the banks of the Red Cedar River on the college grounds; eggs six to eight, white.

ORDER PICI. WOODPECKERS.

Climbing birds, with chisel like bills and barbed tongues.

FAMILY PICIDÆ. WOODPECKERS.

□ Peck holes in wood in search of insects; food insects, fruit and grain; very beneficial; nest in holes formed in trees; eggs snow white.

GENUS DRYOBATES BOIE.

176-393-(433). *Dryobates villosus* (Linn.). *THE HAIRY WOODPECKER.

Very common; throughout the state; found at all seasons; "Grand Traverse Co." (M. L. Leach); "Mackinac Island" (S. E. White); "Keweenaw Point" (Kneeland); "common at Iron Mountain" (E. E. Brewster); breeds in all parts of the state, but more common north; male aids in incubation; eggs four to five, clear white; eats borers and other insects. I have made a close study of this and the following species, and I feel certain that they are of great economic value to the pomologist. The bands used in destroying codling moth pupæ are often fairly riddled by these birds in quest of the insects which the bands conceal.



Downy Woodpecker, natural size.

177-394-(440). *Dryobates pubescens* Linn. *DOWNY WOODPECKER.

Very common; throughout the state; abundant at all seasons; "Grand Traverse county" (M. L. Leach); "Mackinac Island" (S. E. White); "common at Iron Mountain" (E. E. Brewster); "Keweenaw Point" (Kneeland); nests in June, more abundantly

north; hole for nest very smooth, almost polished; eggs four to six, small, clear white. I find, almost always, in the winter and spring, the grub of the large headed borer of the buprestid beetle, *Chrysobothrys femorata*, in the stomach of this species. This bird feeds largely on the larvæ and pupæ of the coddling moth and our numerous leaf rollers. This and the preceding species are much the same, except for size.

GENUS PICOIDES LACEP.

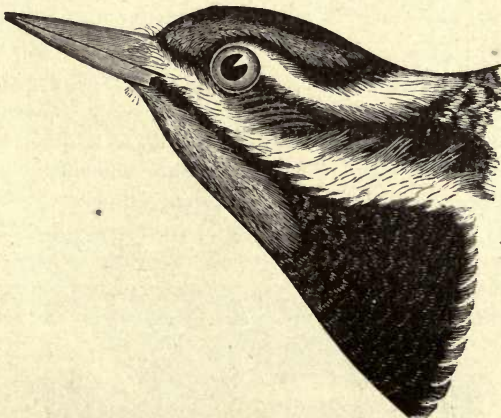
178-400-(443). *Picoides arcticus* (Swains.). ARCTIC THREE-TOED WOODPECKER;
BLACK-BACKED THREE-TOED WOODPECKER.

Very rare south; abundant near Higgins Lake and north; "not seen at Ann Arbor" (Dr. J. B. Steere); "have seen twenty in one trip through the woods at Howard City and Cadillac" (Dr. M. Gibbs); "found common in pineries by N. A. Eddy (O. and O., Vol. VII, p. 143); "I have no account of it south of Ionia County; "taken not uncommonly in Grand Traverse and Roscommon Counties" J. C. Nichols); "common in the Gogebic region" (H. Nehrling); embraced in Cabot's Birds of Lake Superior; "not rare on Upper Peninsula" (A. N. Wood in O. and O., Vol. IX, 1884, p. 62); "Keweenaw Point" (Kneeland); "common in North Michigan pineries" (Prof. Ludwig Kumllein); "common in Iron County" (S. E. White); "not rare in Grand Traverse County" (M. L. Leach); common on Saginaw Bay (N. A. Eddy in O. and O., Vol. IX, p. 5); one in collection of Dr. E. S. Holmes, Grand Rapids, was taken in Kent County, and one in the fine collection of Levi Broas, Belding, was taken in Ionia County. Without doubt this bird breeds in the northern part of this state; "I know of one instance of its breeding in Roscommon County" (Dr. W. C. Brownell); Mr. E. E. Brewster writes me that this bird is common in winter at Iron Mountain, but he cannot say that it breeds.

179-401-(444). *Picoides americanus* Brehm. AMERICAN THREE-TOED WOODPECKER; BANDED-BACKED THREE-TOED WOODPECKER.

Exceedingly rare; "not rare in Northern Peninsula and Gogebic region" (H. Nehrling); in Cabot's list of Birds of Lake Superior; "Keweenaw Point" (Kneeland); inserted in Gibbs' "Birds of Michigan" on the authority of A. B. Covert; "I know of no record for the state" (Dr. A. K. Fisher).

GENUS SPHYRAPICUS BAIRD.

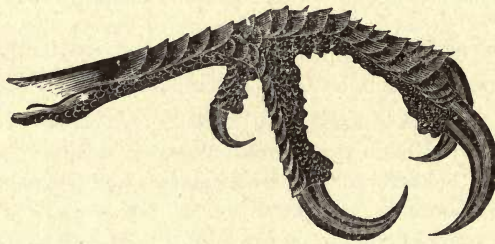


Yellow-bellied Woodpecker, natural size.

180-402-(446). *Sphyrapicus varius* (Linn.). *YELLOW-BELLIED SAPSUCKER;
YELLOW-BELLIED WOODPECKER.

Quite abundant in the spring; occasional in summer; found all months from April to October; rarely seen as late as December; breeds in May and June; "often takes three weeks to peck the hole for nest, which is often found in sound ash trees" (Dr. W. C. Brownell); eggs five to seven, white; "the Sapsucker" (Butler's Birds of Indiana); "taps trees more than either the Hairy or Downy Woodpecker according to my observation" (S. E. White); "this is surely the Sapsucker par excellence at Grand Rapids" (E. L. Moseley); "I know it is a Sapsucker as I have seen it at work" (E. B. Boies); "this is the Sapsucker, not only of Indiana but everywhere" (A. W. Butler); the old ornithologists always refer to the Downy and Hairy Woodpeckers as the Sapsuckers, and I and others believe that we have seen them sucking the sap from evergreens here on the college campus. The evidence seems overwhelming that this species is the one that makes the regular holes in pine, orchard and especially maple trees, thus tapping them and coming again for the sap. (See Auk, Vol. 8, p. 256.) Mr. E. E. Brewster writes that this is common at Iron Mountain, where he has shot it as it was taking maple sap. He says that the feathers were all sticky from the sugar on them.

GENUS *CEOPHLEUS* Cab.



Pileated Woodpecker, natural size.

181-405-(432). *Ceophlæus pileatus* Linn. *PILEATED WOODPECKER; BLACK
WOODPECKER; LOG COCK; WOODCOCK (Michigan and Indiana).

Once common throughout the state; found at all seasons; now very rare; one seen near college in summer of 1892; "extinct at Ann Arbor" (J. B. Steere); "not seen in Monroe County since 1887, though once common" (Jerome Trombley); "rare in Kent County" (S. E. White); "Grand Traverse County" (M. L. Leach); "Mackinac Island" (S. E. White); "Keweenaw Point" (Kneeland); "not uncommon at Iron Mountain" (E. E. Brewster); "Upper Peninsula where it probably breeds" (A. H. Boies); still common north, especially in the Northern Peninsula; confined to thick forests; our largest Woodpecker; breeds; "L. E. Reed found a nest with eggs in May, in Van Buren Co." (Dr. M. Gibbs); eggs three to six; noise from pecking heard for long distances. Until within a few years this bird was common in the forests about the college, where I have taken several.

GENUS MELANERPES SWAIN.

182-406 (453). *Melanerpes erythrocephalus* (Linn.). *RED-HEADED WOODPECKER.

Exceedingly abundant; summer resident; April, rarely March, to Sept.; occasional in winter; "often found apparently lifeless in winter, but recovers with warmth" (Dr. W. C. Brownell); throughout the state; "Mackinac Island" (S. E. White); "common at Iron Mountain" (E. E. Brewster); "Keweenaw Point" (Kneeland); breeds abundantly; nests as usual; eggs five to six; often destroys much fruit, especially cherries; eats grain, especially corn; yet is our friend. Forbes found (Michigan Hort. Soc. Report, 1881, p. 204) that 32 per cent of the food of these birds, which he examined, consisted of canker worms. "I have seen this bird destroy the eggs of the Bluebird and Phoebe" (S. E. White).

183-409 (450). *Melanerpes carolinus* (Linn.). *RED-BELLIED WOODPECKER.

Common, though rare, except in wooded fields; Southern Peninsula; found at all seasons; common from May to August; breeds; nests in May, in holes, often twenty inches deep, usually in rotten wood; eggs four to six, glossy white. See O. and O., Vol. XVI, p. 48.

GENUS COLAPTES SWAIN.

184-412 (457). *Colaptes auratus* (Linn.). *HIGH HOLDER; FLICKER; YELLOW HAMMER; GOLDEN-WINGED WOODPECKER.

Formerly very abundant on the college campus, now less common; throughout the state; April to Sept.; occasional at all seasons; reported from Benzie and Presque Isle Counties and Thunder Bay; "very common in Grand Traverse County" (M. L. Leach); "Mackinac Island" (S. E. White); "Keweenaw Point" (Kneeland); "thirty miles north of Mackinaw" (A. H. Wood, O. and O., Vol. IX, p. 62); "common at Iron Mountain" (E. E. Brewster); breeds abundantly; eggs glossy white, five to ten; if eggs are removed daily this bird will often lay as many as thirty, which we have proved at this place; J. B. Purdy in like way has taken twenty-seven from a nest; "feeds abundantly on ants, which it takes from the ground" (E. L. Moseley); "nests in holes, often of apple trees, four to six feet from the ground" (Dr. J. B. Steere); Geo. D. Sones says that this bird is often shot for the table.

ORDER MACROCHIRES. GOATSUCKERS, SWIFTS, ETC.

Very valuable insectivorous birds.

SUBORDER CAPRIMULGI. GOATSUCKERS, ETC.

FAMILY CAPRIMULGIDÆ. GOATSUCKERS, ETC.

Feed wholly on insects; all beneficial.

* GENUS ANTROSTOMUS GOULD.



Whip-poor-will, reduced.



185-417-(397). *Antrostomus vociferus* (Wils.). *WHIP-POOR-WILL.

Common; throughout the Lower Peninsula; April to Sept.; E. E. Brewster reports it common at Iron Mountain; "Keweenaw Point" (Kneeland); "common at Traverse City, where it breeds" (L. W. Watkins); reported from Benzie and Presque Isle Counties and from Mackinac Island; breeds; nests in June, on the ground, in slight hollows or on leaves; eggs two, grayish white, spotted with varying shades of lilac; it is well known by its note at night, which gives it its common name; this note is heard at all hours of the night and at long distances.

GENUS *CHORDEILLES* SWAIN.

Night Hawk, reduced.

186-420-(399). *Chordeiles virginianus* (Gmel.). *NIGHTHAWK; GOATSUCKER; BULL BAT.

Very common; throughout the state; seen flying towards nightfall; May to Sept.; "common at Traverse City" (W. L. Watkins); "Mackinac Island" (S. E. White); "Keweenaw Point" (Kneeland); "common at Iron Mountain" (E. E. Brewster); breeds; nests as does the last species, except it nests in open fields, and often on houses in cities; "breeds at Traverse City" (L. W. Watkins); eggs two, dirty white specked with varying shades of brown and drab; often confounded with the Whip-poor-wil, but has longer wings, with snowy white spots beneath, and lacks the coarse hair about the bill. Dr. Atkins reports seeing a flock with thousands of birds in August, 1868. The bird has the strange habit of darting down, when it makes a booming sound, which doubtless gave rise to one of its common names; "this bird perches lengthwise of the limb" (J. W. Simmons); Dr. J. B. Steere writes me that this highflier is often seen in cities and often commences flying early in the afternoon. He further adds that it nests on the flat roofs in the city of Detroit. Mr. J. B. Purdy writes me that this and the preceding species are becoming less abundant at Plymouth. "In the spring of 1889, many of these birds perished from starvation in Kent county. The insects for some reason were very scarce" (S. E. White).

SUBORDER CYPSELI. SWIFTS.

FAMILY MICROPODIDÆ. SWIFTS.

These birds are wholly insectivorous.

SUBFAMILY CHÆTURINÆ. SPINE-TAILED SWIFTS.

GENUS CHÆTURA STEPH.



Head and mucronate tail-feather of Chimney Swift, reduced.

187-423-(405). *Chætura pelagica* (Linn.). *CHIMNEY SWIFT; CHIMNEY SWALLOW.

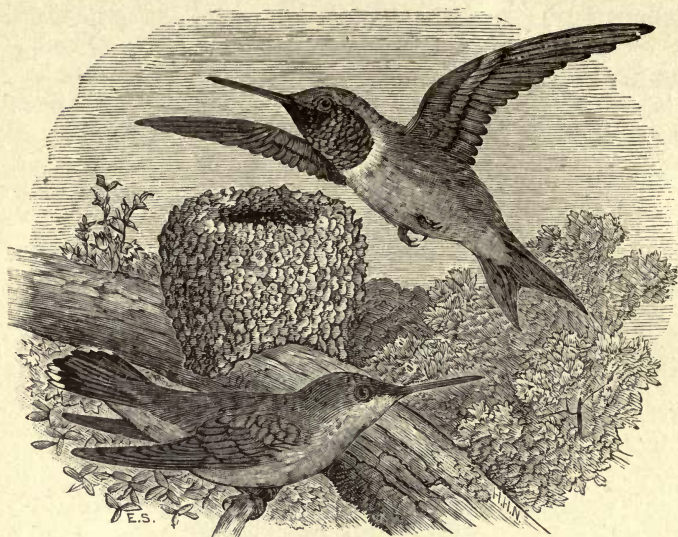
Very common; throughout the state; May to Sept.; "common at Traverse City" (M. L. Leach); I have reports that it is common at Escanabà and Bois Blanc Island; "Mackinac Island" (S. E. White); "common at Iron Mountain" (E. E. Brewster); breeds; two or three brooded; "usually single brooded in Ohio and Indiana" (A. W. Butler); nests in chimneys, rarely in hollow trees or barns, occasionally in nests of barn swallows which are first repaired, one case reported; nests made of twigs glued with a secretion formed by the bird; eggs four to six, white; feeds wholly on insects; migrates in fall, often leaving, it is reported, young birds in the nest. These birds are often considered a nuisance in houses having large chimneys.

SUBORDER TROCHILI. HUMMINGBIRDS.

FAMILY TROCHILIDÆ. HUMMINGBIRDS.

Wholly American; chiefly from Central and South America; about five hundred species; food, insects and nectar from flowers; beautiful and valuable; Dr. M. Gibbs thinks that the food is almost wholly nectar, but I have positive proof that they are also insectivorous.

GENUS TROCHILUS LINN.



Ruby-throated Humming Bird, male and female and nest, slightly reduced.

188-428-(409). *Trochilus colubris* Linn. *RUBY-THROATED HUMMINGBIRD.

Abundant; throughout the state; common at Traverse City and Harbor Springs; E. E. Brewster reports it common at Iron Mountain and S. E. White at Mackinac Island; I have it reported from Benzie county, Escanaba and Bois Blanc Island; May to Sept.; breeds; beautiful nests in June on top of a branch and concealed by its beautiful cover of lichens; "Mr. Richard Westnedge, at Kalamazoo, has found many nests, and says that these birds often build in straggling colonies" (Dr. M. Gibbs); eggs two, white; "of six dissections, five of the stomachs exhibited many small insects" (S. E. White). Mr. J. B. Purdy has taken the nest and in six days another was built on the same apple tree by the same bird and had eggs in it.

ORDER PASSERES. PERCHING BIRDS.

Birds with weak feet, usually slight bills, mostly singers.

SUBORDER CLAMATORES. SONGLESS PERCHING BIRDS.

FAMILY TYRANNIDÆ. FLYCATCHERS.

Pre-eminent insect feeders; excellent friends.

GENUS TYRANNUS CUV.



Kingbird, reduced.

189-444 (368). *Tyrannus tyrannus* (Linn.). *KINGBIRD; BEE MARTIN; TYRANT FLYCATCHER.

Common; throughout the state; May till Sept.; I have reports of this species from Benzie County, Presque Isle, Thunder Bay and Escanaba; "Mackinac Island" (S. E. White); "common at Iron Mountain" (E. E. Brewster); "Keweenaw Point" (Kneeland); breeds; nests in June in orchard trees, etc.; eggs three to five, cream colored, irregularly spotted with brown; kills bees, both workers and drones; does more good than harm as it kills myriads of noxious insects and usually few bees; Mr. L. W. Watkins tells me that this bird breeds at Traverse City. Prof. S. A. Forbes found (report of Mich. Hort. Soc., 1881, p. 204) that forty-two per cent of the food of several examined consisted of insects.

GENUS MYIARCHUS CAB.



Great Crested Flycatcher, reduced.

190-452-(373). *Myiarchus crinitus* (Linn.). *CRESTED FLYCATCHER; GREAT CRESTED FLYCATCHER.

Common; throughout the state; May to Sept.; "Mackinac Island" (S. E. White); rather retiring in its habits; breeds; nests in holes in fence rails, usually in hollows of trees, or old Woodpecker holes; nests often contain cast skins of snakes as a portion of the fabric, as often noticed in our state; eggs four to six, yellowish white, scratched with purple.

GENUS SAYORNIS BONAP.

191-456-(379). *Sayornis phoebe* (Lath.). *PHOEBE; PEWEE; BRIDGE BIRD; HOUSE PEWEE; PEWIT FLYCATCHER.

Very common; probably throughout the entire state; "Mackinac Island" (S. E. White); "Iron Mountain" (E. E. Brewster); "Keweenaw Point" (Kneeland); breeds very abundantly; nests in May, under bridges or porches, in out houses, etc.; eggs five to seven, pure white occasionally with brown spots at large end; one of our best known and most familiar birds; its plaintive note is known to all.

GENUS CONTOPUS CAB.

192-459-(380). *Contopus borealis* (Swain.). OLIVE-SIDED FLYCATCHER.

Rather rare; throughout the Southern Peninsula; April to Aug.; "rare in Kalamazoo County" (Dr. M. Gibbs); taken by Dr. M. Gibbs in Ottawa County, May 21, 1879 (Bull. Nuttall Ornithological Club, Vol. IX, p. 186); "very common in many northern counties" (C. J. Davis); "abundant at Mackinac Island" (S. E. White); Mr. A. Durfee found a nest in Wayne County in 1889; nests in June, in trees; eggs three to five, as in next species except larger.

193-461-(382). *Contopus virens* (Linn.). *WOOD PEWEE.

Common; general in the state; May to Oct.; usually in groves, but not rare about our houses; "Mackinac Island" (S. E. White); "Keweenaw Point" (Kneeland); E. E. Brewster reports it common at Iron Mountain; embraced in Cabot's Birds of Lake Superior; breeds; "breeds abundantly at Traverse City" (L. W. Watkins); nests in June, though occasionally as late as July or even August, in orchards, usually on horizontal limbs, the nests often beautifully covered with lichens, very rare about houses, one reported on ledge under the cornice of a house etc.; eggs three, creamy white, with spots of brown at the large end; very beneficial. The novice is likely to confuse this bird with the Phoebe; its note is very sweet and beautiful.

GENUS EMPIDONAX CAB.

194-463-(388). *Empidonax flaviventris* Baird. *YELLOW-BELLIED FLYCATCHER.

Not rare; "not rare during spring migration, one taken in Kalamazoo County" (Dr. M. Gibbs); "Iron Mountain" (E. E. Brewster); Mr. S. E. White reports this species quite common at Mackinac Island at time of fall migration; said to breed in the northern part of the state; eggs usually four.

195-465-(384). *Empidonax acadicus* (Gmel.). *ACADIAN FLYCATCHER; SMALL GREEN-CRESTED FLYCATCHER.

Abundant; usually in thick woods; May to Aug.; "in southern part of the state" (Prof. J. A. Allen); "common at Greenville" (Prof. Jas. Satterlee); "Mackinac Island" (S. E. White); breeds; nests in June at the end of limbs of trees or bushes; "nests along creeks in elder bushes, and is very shy" (Dr. W. C. Brownell); eggs two to four, usually three, color as in Wood Pewee. This bird is often mistaken for the next two species.

196-466a-(385). *Empidonax pusillus traillii* (Aud.). *TRAILL'S FLYCATCHER.

Common; "common in some localities in Monroe County" (Jerome Trombley); "Mackinac Island" (S. E. White); breeds; "have found twenty-five or thirty nests for several consecutive years in Dundee township" (Jerome Trombley); nests in June, usually in willows and alder bushes, beside streams; "nests in thick woods at end of beech or maple limbs" (Dr. W. C. Brownell); have not Messrs. Trombley and Brownell mistaken the Acadian for Traill's Flycatcher in the above notes? Such misidentifications are common in studying these birds; eggs four, indistinguishable from those of the Acadian Flycatcher.

197-467-(387). *Empidonax minimus* Baird. *LEAST FLYCATCHER.

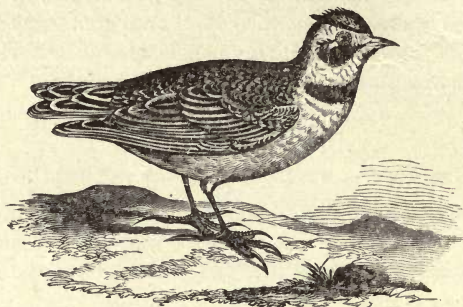
Common throughout the state; April till Sept.; "common in Hillsdale county" (A. H. Boies); "and in Monroe County" (Jerome Trombley); "Mackinac Island" (S. E. White); "Iron Mountain" (E. E. Brewster); breeds; often double brooded; nest found in Wayne County by A. Durfee in 1889; nests in May, in trees in woods, occasionally in orchard and other trees, frequently close by the house; eggs four, white or creamy white. We find this species far more common here than either of the two preceding.

SUBORDER OSCINES. SONG BIRDS.

FAMILY ALAUDIDÆ. LARKS.

Insect feeders; sing on the wing.

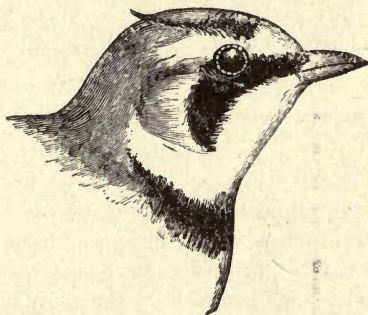
GENUS OTOCORIS BONAP.



Horned Lark, much reduced.

198-474-(82). *Otocoris alpestris* (Linn.). *HORNED LARK; SHORE LARK.

Rather rare; irregular fall and spring visitor; "late fall in Kent County" (S. E. White); not very rare in winter; breeds in Greenland and Labrador; often seen in barn-



Horned Lark, natural size.

yards, feeding on seeds, etc.; this bird is often confused with the following subspecies, which is more common in our state. From what Dr. J. B. Steere writes me, I judge that this is the more common at Ann Arbor.

199-474b-(000). *Otocoris alpestris praticola* Hensh. *PRAIRIE HORNED LARK.

Summer resident; Jonathan Dwight, Jr., found them at Ann Arbor and Cadillac where they were breeding (Auk, Vol. VIII, p. 138); "very common at Iron Mountain" (E. E. Brewster); breeds; nests on the ground; in April or earlier; "breeds abundantly in Kent county" (S. E. White); J. B. Purdy, of Plymouth, has found eggs in nest in February; nest often surrounded by snow; may be double or triple brooded; eggs four or five, gray specked with brown; food insects and seeds. Mr. L. W. Watkins took one on eggs March 20, 1889, the nest was surrounded by snow. This subspecies and the

preceding overlap each other in this region during winter, and so are very generally confused throughout the state. The species and sub-species are thought generally to be one and the same bird.

FAMILY CORVIDÆ. CROWS, MAGPIES ETC.

Food habits rather omnivorous.

SUBFAMILY GARRULINÆ. MAGPIES AND JAYS.

GENUS CYANOCITTA STRICKL.

200-477-(349). *Cyanocitta cristata* (Linn.). *BLUE JAY.

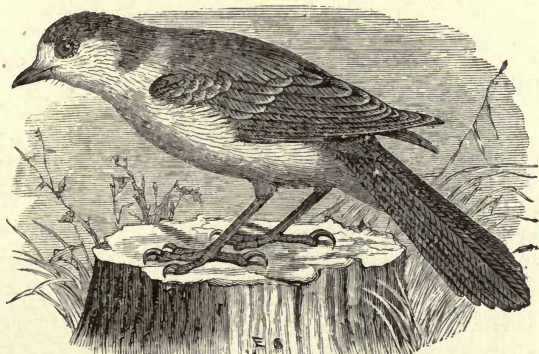
Very abundant; throughout the state; common in all seasons; reported from Presque Isle and Bois Blanc Island; "common at Grand Traverse County" (M. L. Leach); "abundant at Mackinac Island" (S. E. White); "not common on Keweenaw Point" (Kneeland); "common in Upper Peninsula" (A. H. Boies); "common at Iron Mountain" (E. E. Brewster); breeds; nests in thick foliage, especially evergreens, very rarely in barns, one case noted; eggs four to five, "six" (E. Clute and D. Reynolds), light green or drab, spotted with light brown; feeds on acorns, hazel nuts, insects, fruits, young birds and birds eggs etc.; often kills birds, especially nestlings; Dr. G. W. Topping, of DeWitt, has repeatedly seen these birds take young Sparrows and Gold Finches from the nests and then eat them; "killed a young Baltimore Oriole and took its brain, leaving the rest of the carcass" (L. W. Watkins); an English Sparrow received similar treatment from this bird, on the college campus in the spring of 1893; a rather doubtful friend; note harsh; too handsome to kill. Prof. J. A. Allen informs me that he has taken a great number of the eggs of the tent caterpillar, *Clisiocampa americana*, from their stomachs in winter in Massachusetts.

GENUS PICA CUV.

201-475-(347). *Pica pica hudsonica* (Sab.). AMERICAN MAGPIE.

Said to wander to Michigan (see Youth's Companion, December, 1892); "I have seen a few specimens taken at Eagle River" (Kneeland); Butler's Birds of Indiana, p. 113; Ridgway's Manual of North American Birds, p. 352, and Jordan's Manual of Vertebrates; "very doubtful" (Dr. A. K. Fisher).

GENUS PERISOREUS BONAP.



Canada Jay, reduced.

202-484-(359). *Perisoreus canadensis* (Linn.). *CANADA JAY.

Common from the middle of the Southern Peninsula northward; never seen in the southern part of the state; seen on our college grounds in the winter of 1893; "first seen May 17, 1876" (Dr. H. A. Atkins); it seems strange that it should occur at Locke as late as May; "common north about the logging camps" (R. H. Wolcott); A. H. Boies took a pair at Sault Ste. Marie, Oct. 20, 1892; "very abundant at Iron County, Upper Peninsula, also in the Gogebic region" (H. Nehrling); "a flock of eight were seen at Mackinac Island" (S. E. White); common in some sections of the Northern Peninsula" (Prof. Ludwig Kumlein); "common on Keweenaw Point in winter and a pest to the trappers as it steals the poisoned bait" (Kneeland); "abundant in Grand Traverse County" (M. L. Leach); taken by J. E. Nichols in the autumn of 1881 and 1883 in Roscommon, Kalkaska and Missaukee Counties; "common in Crawford County, about lumber camps" (Dudley E. Waters); Dr. Atkins reports taking this bird at Locke, May 17, 1876; "common in spring and fall, but not in summer in Iron County" (E. E. Brewster); this bird is reported to be troublesome about lumber camps, carrying off meat, etc. It doubtless breeds in the northern part of the state.

SUBFAMILY CORVINÆ. CROWS AND RAVENS.

GENUS CORVUS LINN.

203-486-(338). *Corvus corax sinuatus* (Wagl.). *AMERICAN RAVEN.

Formerly common; not rare now north; we no longer see it about Lansing; "rare but still seen at Ann Arbor" (Dr. J. B. Steere); "common at Grayling, where it nests" (Prof. L. H. Colburn); "very common on Keweenaw Point in the winter to the exclusion of the crow" (Kneeland); "throughout the Upper Peninsula" (A. H. Boies); "common but very shy in Iron County, two taken in Kent County April 8, 1888" (S. E. White); "common at Iron Mountain, Dickinson County" (E. E. Brewster); "see them occasionally in Shiawassee County, flying very high" (Dr. W. C. Brownell); "wholly gone from Greenville, Montcalm County, where it was common thirty years ago" (Prof. Jas. Satterlee); "common in Monroe County, prior to 1860, before the advent of the crow" (Jerome Trombley); this bird seems to be replaced south by the crow; feeds on carrion, acorns, etc.; Dr. Gibbs writes me that he has known of its breeding in Van Buren County, and thinks it must lay eggs as early as February. Nest and eggs much as in the next species.

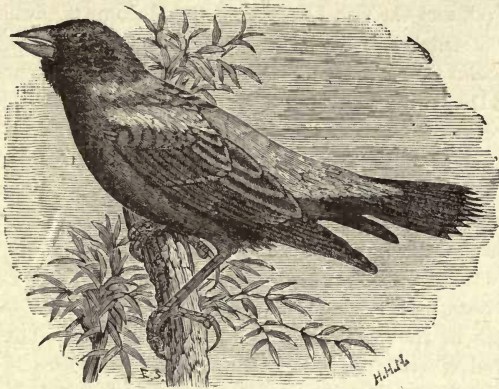
204-488-(340). *Corvus americanus* Aud. *AMERICAN CROW, COMMON CROW.

Very common; throughout the state; gregarious; seen at all seasons of the year; more rare in winter; "seen first in Monroe County in 1830, now very common, but not in winter" (Jerome Trombley); "Grand Traverse County" (M. L. Leach); "not rare at Mackinac Island" (S. E. White); common on Keweenaw Point and in the Ontonagon District" (Kneeland); "general in Upper Peninsula" (A. H. Boies); "common in summer at Iron Mountain" (E. E. Brewster); breeds; nests in large, coarse nests in trees; eggs four to six, Dr. W. C. Brownell has a set of seven, green, blotched and sprinkled with dusky brown; eats insects, frogs, carrion, acorns, eggs of birds and poultry, "especially young chickens" (O. and O., Vol. XVI, 1891, p. 64.); probably our friend.

FAMILY ICTERIDÆ. STARLINGS, BLACKBIRDS, ORIOLES.

Generally insect feeders, a few eat corn, some fruit, on the whole our friends; generally gregarious; eggs usually much speckled, often marked with zigzag or broken lines.

GENUS DOLICHONYX SWAINS.

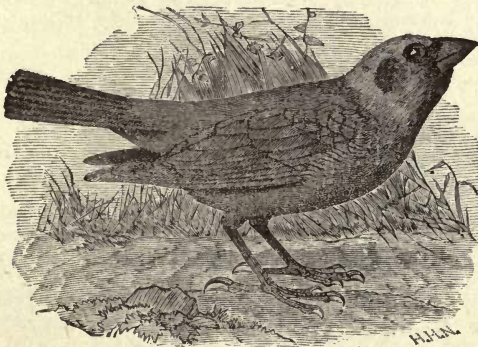


Bobolink, male, reduced.

205-494 (312). *Dolichonyx oryzivorus* (Linn.). *BOBOLINK; SKUNK BLACK-BIRD; REED BIRD; RICE BIRD; BOB LINCOLN; ORTOLAN; BUTTER BIRD.

Very common; Southern Michigan; summer; May (one of the latest birds to arrive) to September; male takes the plumage of the female in the fall; beautiful singer at nesting season; not shy; breeds; nests in June, usually in meadows, on the ground; eggs five, occasionally six to seven, bluish white, marked with dark brown specks; not in Central Michigan until within a few years; I first noticed it about the college in 1874; "first in Monroe County in 1872" (Jerome Trombley); Dr. Atkins reports it very common in 1875 but very rare until 1874 at Locke; "first seen at Plymouth forty years ago" (J. B. Purdy); Dr. G. W. Topping says that it first appeared at DeWitt in 1881, and was numerous from the first; I have reports of this bird as far north as Benzie County, in the Southern Peninsula, and Mr. E. E. Brewster, of Iron Mountain writes me that it occurs rarely at that place.

GENUS MOLOTHRUS SWAINS.



Cowbird, reduced.

206-495-(313). *Molothrus ater* (Bodd.). *COWBIRD; SAZY BIRD; COW BUNTING.

Increasingly abundant; throughout the State; March to November; insect feeder; "Keweenaw Point" (Kneeland); rests on cattle and picks flies, hence name Cowbird; often in flocks; lays its eggs "extensively" (L. S. Foster) in other birds' nests, especially in nests of Grass Finch, Chipping and Song Sparrows, Orchard Orioles, Thrushes Warblers, King Birds and Pewee; Mr. A. H. Boies thinks that this bird lays only one egg in any one nest (O. and O., Vol. IX, 1884, p. 90); Jerome Trombley has taken these eggs from the nests of thirty other kinds of birds; Prof. James Satterlee has taken eggs in Greenville, Montcalm County, from the nests of the Hermit Thrush and the Green-crested Flycatcher; Dr. Gibbs has found its eggs in the nests of the Wood Thrush, Bluebird, eight species of Warblers, Scarlet Tanager, Chewink, Traill's and Acadian Flycatchers, three species of Vireos, and five other species. R. H. Wolcott has found its eggs in the nest of Wilson's Thrush, Blue-gray Gnatcatcher, Yellow Warbler, Swamp Sparrow, Song Sparrow, Chipping Sparrow, Rose-breasted Grosbeak, Indigo Bird, Orchard and Baltimore Orioles, Wood Pewee, and once in that of the Meadow Lark; F. M. Falconer finds the eggs most frequently in the nest of the Yellow Warbler; and in two cases he has found the eggs covered over and a new set deposited; Dr. Atkins reports finding eggs in the nest of the Golden Crowned Thrush, Rose-breasted Grosbeak and Hooded Warbler; in this peculiar habit this bird is like the European Cuckoo " (usually) lays eggs in nests of small birds which have a longer period of incubation, thus giving its young the first chance and 'freezing out' the rightful possessor" (C. J. Davis); S. E. White reports this bird at Mackinac Island but only as a migrant, and E. E. Brewster writes that it is common at Iron Mountain. "A male was seen daily the winter of 1892 at Alma, Michigan, with a flock of English Sparrows." "I have seen eggs walled in in Yellow Bird's nests" (Prof. C. A. Davis). A. H. Boies has given a similar case in O. and O., Vol. IX, 1884, p. 128. For interesting article on this species by Dr. M. Gibbs, see O. and O., Vol. XV, 1890, p. 5.

GENUS XANTHOCEPHALUS BONAP.

207-497-(319). *Xanthocephalus xanthocephalus* (Bonap.). YELLOW-HEADED BLACKBIRD.

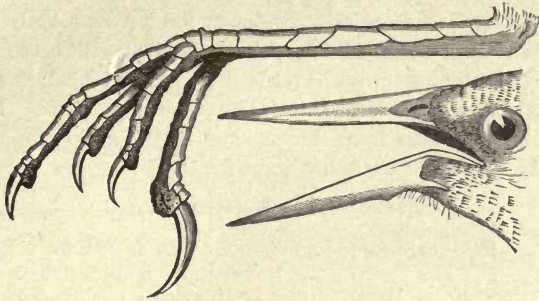
Very rare; "extreme southwestern part of the State; probably breeds" (Gibbs); "never seen at Ann Arbor" (Dr. J. B. Steere); "very doubtful if it breeds in the State" (A. H. Boies); one taken at Iron Mountain, Northern Peninsula, May 17, 1890, by E. E. Brewster; "common in Northern Wisconsin and presumably in the Northern Peninsula" (Prof. Ludwig Kumlein); "breeds in Lake County Indiana" (Butler's Birds of Indiana).

GENUS AGELAIUS VIEILL.

208-498-(316). *Agelaius phoeniceus* (Linn.). *RED-WINGED BLACKBIRD.

Exceedingly common; throughout the state; March to September; "Traverse City where it breeds" (L. W. Watkins); "common at Mackinac Island" (S. E. White); "common at Iron Mountain" (E. E. Brewster); "Keweenaw Point" (Kneeland); breeds; two broods; nests in May, in grass clumps or low brush-wood in marshes; nests usually surrounded by water; eggs four to five, rarely six, light blue, streaked and specked with brown or black; food insects and grain, principally corn; often seen in flocks especially in autumn.

GENUS STURNELLA VIEILL.



Meadow Lark, natural size.

209-501-(320). *Sturnella magna* (Linn.). * MEADOW LARK; MEADOW STARLING; FIELD LARK.

Exceedingly abundant; throughout the state; March to October; often seen every month in the year; "very rare at Mackinac Island, seen in July, 1889" (S. E. White); "does not occur at Iron Mountain, as I have not seen it or heard its note" (E. E. Brewster); L. W. Watkins has found it breeding at Traverse City; nests in May on the ground; eggs five to seven, white with brown spots, rarely immaculate; "often shot for game" (Geo. D. Sones).

210-501b-(322). *Sturnella magna neglecta* (Aud.). * WESTERN MEADOW LARK.

Although this is included in Covert's and Stockwell's lists, I doubt its occurrence in our state. Dr. Gibbs writes me to the same effect. Dr. Atkins states that he saw a flock September 8, 1876. Were not these immature specimens of the preceding species? Prof. J. A. Allen writes me that he thinks Dr. Atkins was mistaken in his identification. Prof. A. W. Butler identified one from Cook County, Illinois, only two counties removed from Michigan.

GENUS ICTERUS BRISS.

211-506-(324). *Icterus spurius* (Linn.). * ORCHARD OROOLE.

Common summer sojourner; rare about Lansing; "common in Kent County" (S. E. White); "very common at Greenville, Montcalm County" (Prof. James Satterlee); "very common in Cass County, where it breeds in June" (J. W. Simmons); breeds abundantly at Plymouth, and usually lays five eggs" (J. B. Purdy); taken frequently in Ionia County by Mr. Levi Broas; "common in Wayne County where it breeds" (B. W. Swales); "rare but breeds at Ann Arbor" (Dr. J. B. Steere); breeds plentifully in the southern part of the state; Dr. Atkins took a specimen May 25, 1892, at Locke, Ingham County; "nests abundantly at Manchester, often in spruce trees, nests usually pendant, but shorter than in the next species, woven closely to twigs and much concealed" (L. W. Watkins); eggs four to six, smaller than in the next species, and the dashes shorter.

212-507-(326). *Icterus galbula* (Linn.). * BALTIMORE ORIOLE; HANG NEST; FIRE BIRD.

Common; throughout the Lower Peninsula at least; "never seen at Iron Mountain" (E. E. Brewster); "I have never seen it at Mackinac Island" (S. E. White); May, rarely April, to August; "common at Traverse City, where it breeds abundantly" (L. W. Watkins); "common even in the City of Ann Arbor" (Dr. J. B. Steere); breeds; nests "purse-shaped" (L. S. Foster), suspended; "I have a nest constructed wholly of

horse hair from mane and tail of a horse" (Prof. J. W. Simmons); nests usually at the ends of limbs of tall trees (it often selects elms or the top-most limbs of orchard trees); eggs four to six, pinkish white or bluish white, scratched with brown; feeds on insects (will even eat the large tomato worm) and fruit; beautiful bird; sweet singer; next to the Scarlet Tanager this is the most showy of our common birds. I have seen these birds eat the young bark lice from linden trees in the spring, and have seen them driven away by the bees and wasps that come for the honey-dew.

GENUS SCOLECOPHAGUS SWAIN.

213-509-(331). *Scolecophagus carolinus* (Müll.). *RUSTY BLACKBIRD; RUSTY GRACKLE.

Abundant throughout the state; migrant; "only a migrant at Ann Arbor" (Dr. J. B. Steere); observed at Sault Ste. Marie by A. H. Boies; E. E. Brewster has taken it at Iron Mountain; "Mackinac Island" (S. E. White); "Keweenaw Point" (Kneeland); "probably breeds" (Gibbs' Birds of Michigan); may possibly breed in Northern Peninsula.

GENUS QUISCALUS VIEILL.

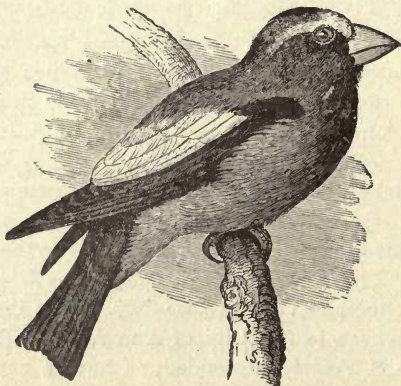
214-511d-(337). *Quiscalus quiscula æneus* (Ridgw.). *BRONZED GRACKLE; BRONZED CROW BLACKBIRD; CROW BLACKBIRD; COMMON BLACKBIRD.

March to September; exceeding abundant; throughout the state; "often in cities" (Geo. D. Sones); often in immense flocks especially in spring and fall; "decreasingly common in Monroe County" (Jereme Trombley); "Mackinac Island" (S. E. White); common at Iron Mountain" (E. E. Brewster); breeds; nests in May and June in large coarse nests in swamps, in bushes usually near the ground—R. H. Wolcott has found them in evergreens forty feet from the ground; eggs four to six, rarely seven, light blue to light brown, streaked and specked with brown and black; feeds on insects, especially white grubs, and pulls up corn and eats corn from the ear; Prof. Jas. Satterlee once found a nest in a hole in an old dead tamarack, and R. H. Wolcott reports the same from Ann Arbor, where the nest was in an old stub standing in the river. Dr. M. Gibbs writes me that he finds such nesting common in new regions where old trees are abundant.

FAMILY FRINGILLIDÆ. FINCHES, SPARROWS, ETC.

Feed on seeds and insects; our native species all beneficial. Many species are sylvan, while others frequent the cleared fields.

GENUS COCCOTHAUSTES BRISS.

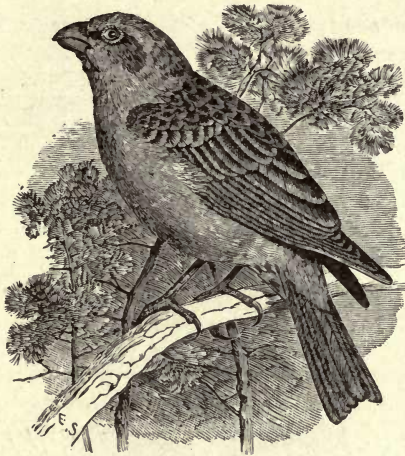


Evening Grosbeak, reduced.

215-514-(189). *Coccothraustes vespertina* (Coop.). EVENING GROSBEEK.

Winter; rarely seen; occasionally very common; type specimen described by Cooper was from Sault Ste. Marie; E. E. Brewster reports a large flock at Iron Mountain in the winter of 1882; Mr. L. H. Colburn sent me one shot from a flock in Van Buren County in 1887; winter of 1889-90 at the college in flocks; "Ann Arbor in 1887 and 1890" (Dr. J. B. Steere); "very abundant at Alma and Saginaw in winter of 1889-90" (Prof. C. A. Davis); "several small flocks in Monroe County in winter of 1889-90" (Jerome Trombley); "attracted into houses by feeding, caught and kept in cages for two years, all males and so could not breed" (L. W. Watkins); Dr. M. Gibbs saw this bird in company with the Rose-breasted Grosbeak in Kalamazoo County in late April, 1879 (*The Auk*, April, 1892). For very full monograph of this bird see article by Prof. A. W. Butler in *The Auk*, Vol. IX, July, 1892, pp. 238-247, also "Further Notes on the Evening Grosbeak," *The Auk*, April, 1893, pp. 155-157. This article refers largely to observations on this species in Michigan. He shows that this bird was general in Michigan in the winter of 1890 from January to May.

GENUS PINICOLA VIEILL.

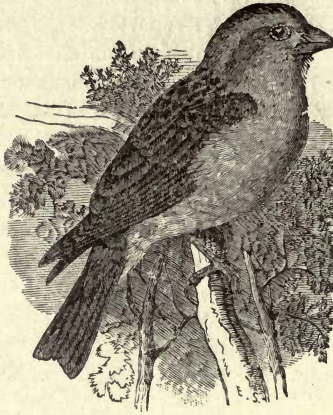


Pine Grosbeak, reduced.

216-515-(190). *Pinicola enucleator* (Linn.). *PINE GROSBEEK.

Occasional in winter; often in large flocks; "in flocks of thousands in Jackson County in 1881, where they were very tame" (Dr. H. A. Atkins); we have one in our museum from Ionia County, taken in January; "common in Bay County from November, 1883, to April, 1884" (N. A. Eddy, in *O. and O.*, Vol. IX, p. 41); "occasionally a straggler from the north in Kalamazoo County, in winter" (Dr. M. Gibbs); "Keweenaw Point" (Kneeland); "not uncommon at Iron Mountain and north, where I think it breeds" (E. E. Brewster); I was surprised to find but one in the large collection of Mr. Levi Broas, made in the northern part of Ionia County.

GENUS CARPODACUS KAUP.

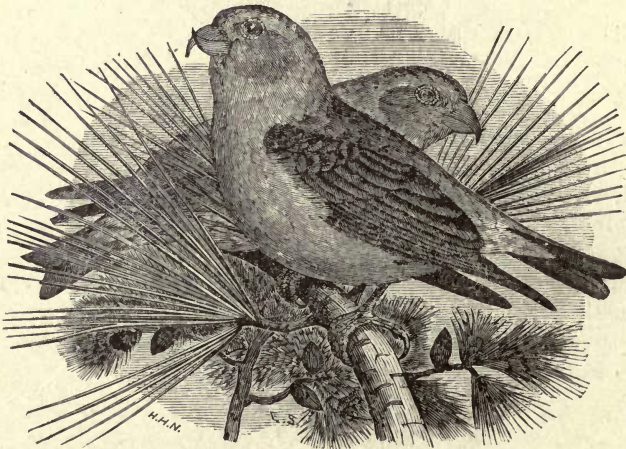


Purple Finch, male, reduced.

217-517-(194). *Carpodacus purpureus* (Gmel.). *PURPLE FINCH.

Rather common; throughout the state; flocks; usually a migrant; occasional in summer; "only a migrant at Ann Arbor" (Dr. J. B. Steere); F. L. Washburn reported a flock at Ann Arbor May 24 (The Auk, Vol. VI, p. 279); "not known in Kalamazoo in summer" (Dr. M. Gibbs); "Hillsdale and Lenawee Counties" (A. H. Boies); "does not breed in Plymouth" (J. B. Purdy); "rare in Wayne County" (B. W. Swales); "breeds abundantly at Mackinac Island" (S. E. White); "Keweenaw Point" (Kneeland); "rare at Iron Mountain" (E. E. Brewster); occasionally breeds; nests in May, in trees, often close about houses; Mr. Howard B. Baker knew it to nest in an evergreen close by his father's house in Lansing; eggs four to five, very light dull green, speckled with dark spots; sweet singer.

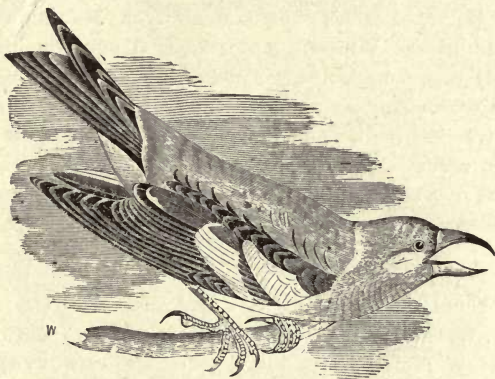
GENUS LOXIA LINN.



Red Crossbill, male and female, reduced.

218-521-(199). *Loxia curvirostra minor* (Brehm). *AMERICAN CROSSBILL; RED CROSSBILL.

Often very common; throughout the Southern Peninsula at least; winter; Nov. to May; occasional in summer; "irregular at Ann Arbor" (Dr. J. B. Steere); "only in winter and spring at Plymouth" (J. B. Purdy); "not common in Lenawee and Hillsdale Counties" (A. H. Boies); "common in Grand Traverse County" (M. L. Leach); "very common at Iron Mountain, think it breeds" (E. E. Brewster); F. M. Falconer reports it from Hillsdale in March and April, where a nest was found by Mr. Dempel March 24, 1892, in a spruce, twenty feet from the ground, and one egg taken; "summer resident at Mackinac Island, where it breeds" (S. E. White); "Keweenaw Point" (Kneeland); breeds north; "I think it nests in March or earlier" (Dr. M. Gibbs); "usually February and March" (Davie, p. 289); nests in trees; eggs three to five, greenish gray speckled with brown; Dr. Atkins reports taking the nest of this bird at Locke; he also states that he has known it to peck holes in apples to secure the seeds.



White-winged Crossbill, reduced.

219-522-(198). *Loxia leucoptera* Gmel. *WHITE-WINGED CROSSBILL.

Often common; throughout the Lower Peninsula at least; south only in winter; Dr. Atkins reports killing one at Locke, August 9, 1875; "common in Kent County in winter" (S. E. White); "uncertain winter visitor at Ann Arbor" (Dr. J. B. Steere); "one pair killed at Plymouth" (J. B. Purdy); Samuel Spicer, of Genesee County, reports finding one nesting Sept. 28, 1888 (O. and O., p. 43, 1889); "Keweenaw Point" (Kneeland); S. E. White finds it in July and August at Mackinac Island, where it probably breeds; "breeds in Northern Wisconsin and Northern Peninsula of Michigan" (Ludwig Kumlein); this bird is a rather fine singer.

GENUS ACANTHIS BECH.

220-528-(207). *Acanthis linaria* (Linn.). *REDPOLL; COMMON OR LESSER REDPOLL; REDPOLL LINNET.

Occasional winter resident; November to March or April; flocks; "irregularly abundant at Ann Arbor, there were thousands in 1888, very rare since" (Dr. J. B. Steere); "often common in Lenawee County" (A. H. Boies); "common in winter at Iron Mountain" (E. E. Brewster); "Keweenaw Point" (Kneeland); I have it reported from Thunder Bay Island; very sweet singer; feeds mostly on buds and seeds, especially seeds of the arbor vitae.

221-528b-(208 part). *Acanthis linaria rostrata* (Coues). *THE GREATER REDPOLL.

"Occasional straggler, taken in flocks of last species" (Dr. M. Gibbs). Dr. Gibbs' specimen taken at Kalamazoo was identified by Mr. Robt. Ridgway. These birds are often given as *Acanthis linaria holboellii*, which is without doubt an error (see Butler's Birds of Indiana, p. 69).

GENUS SPINUS KOCH.

222-529-(213). *Spinus tristis* (Linn.). *AMERICAN GOLDFINCH; YELLOW BIRD; THISTLE BIRD.

Very common; throughout the Lower Peninsula; every month in the year; more common in summer; yellow in summer, darker in autumn and winter; occasional in midwinter; in fall and winter feeds on seeds; gregarious at all seasons except while breeding; but the largest flocks occur in winter and July" (E. L. Moseley); "Grand Traverse County" (M. L. Leach); "common at Iron Mountain" (E. E. Brewster); "Mackinac Island" (S. E. White); "not seen in Upper Peninsula" (A. H. Boies); breeds; nests in July and August; "never before July" (R. H. Wolcott); "usually as late as July and often in August and September" (Prof. Ludwig Kumlein); we have found nests with five eggs Sept. 10, one reported found Sept. 28, 1888 (O and O., Vol. XIV, 1889); nests in orchard trees and occasionally in low shrubs; eggs three to six, bluish white; Dr. H. A. Atkins and Mr. L. W. Watkins have both reared the young by putting the eggs under a common canary.

223-533-(212). *Spinus pinus* (Wils.). PINE SISKIN; PINE LINNET; PINE FINCH.

Rather rare; throughout the state; "rare at Ann Arbor" (Dr. J. B. Steere); "common in Wayne" (B. W. Swales); "transient in Monroe County, often in flocks in spring even to April and May" (Jerome Trombley); "very abundant in the pine forests north and often seen in southern counties" (Dr. M. Gibbs); winter; "killed from flocks at Iron Mountain, May 23, 1892" (E. E. Brewster); "Keweenaw Point" (Kneeland); "common in winter in Kent County, and a summer resident on Mackinac Island" (S. E. White); Dr. Atkins reports taking it in February and twice in May; "breeds in Michigan" (Davie's Nests and Eggs of North American Birds, p. 293).

GENUS PLECTROPHENAX STEJ.

224-534-(219). *Plectrophenax nivalis* (Linn.). *SNOWFLAKE; SNOW BUNTING; WHITE SNOW BIRD.

Common, though fitful, not seen every winter; throughout the entire State; November to March; often migrant; "Lenawee and Hillsdale Counties, and common in the Upper Peninsula," (A. H. Boies); "Keweenaw Point" (Kneeland) "immense flocks at Morrice, Shiawassee County, Feb., 1893" (Dr. W. C. Brownell); "common at Iron Mountain from late October till snow flies" (E. E. Brewster); saw a flock of hundreds near Owosso, January, 1892, they would follow the manure wagon to gather seeds" (Bert B. Cook); "present in Kent county from October 28, 1890 to March 7, 1891" (S. E. White); reported from Mackinac Island; "usually does not come till snow covers the ground" (Prof. C. A. Davis).

GENUS CALCARIUS BECHST.

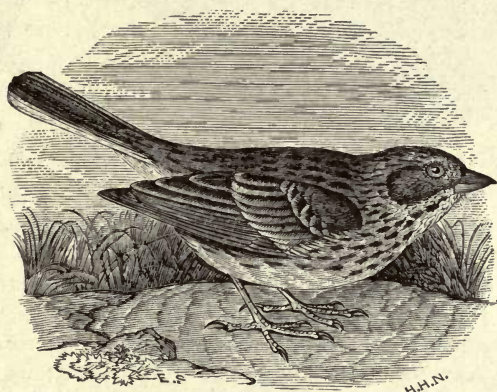
225-536-(220). *Calcarius lapponicus* (*Linn.*). LAPLAND LONGSPUR.

Rare; migrant; spring and autumn; often winters in Southern Michigan; "one pair killed at Plymouth" (J. B. Purdy); "generally a transient visitor from the north, occasionally spends the winter south of 43° north latitude" (Gibbs' Birds of Michigan); October to April; reported from Wayne County and Mackinac Island; "Keweenaw Point" (Kneeland); it is said to be a common spring migrant in Northern Indiana (Butler's Birds of Indiana).

226-537-(221). *Calcarius pictus* (*Swain.*). SMITH'S LONGSPUR; PAINTED LONGSPUR.

Reported common on the southern shore of Lake Michigan (Butler's Birds of Indiana); Dr. M. Gibbs thinks this may be found in Michigan; migrant; in flocks.

GENUS POOCÆTES BAIRD.

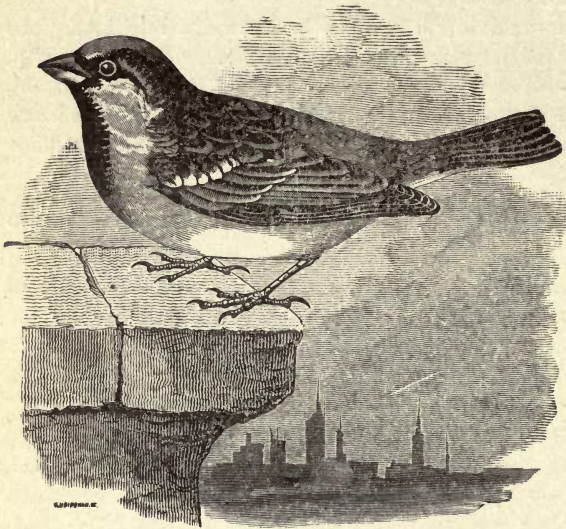


Grass Finch, reduced.

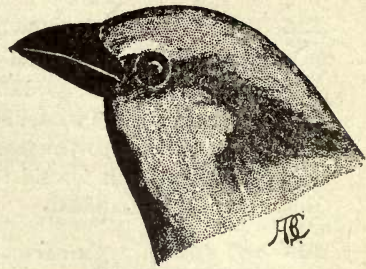
227-540-(232). *Pooecetes gramineus* (*Gmel.*). *VESPER SPARROW; BAY-WINGED BUNTING; GRASS FINCH; GROUND BIRD.

One of our most common finches; throughout the State; April to October; "Mackinac Island" (S. E. White); "common at Iron Mountain" (E. W. Brewster); "Keweenaw Point" (Kneeland); "next to song sparrow our most common finch" (J. Trombley); its pretty evening song—vesper song—gives it one of its common names; breeds; two or three broods a year; nests in May, June or July, on the ground, in pasture, meadow, and by the roadside; eggs four, gray, specked with dull brown; birds not shy; like all our native sparrows, insectivorous and valuable.

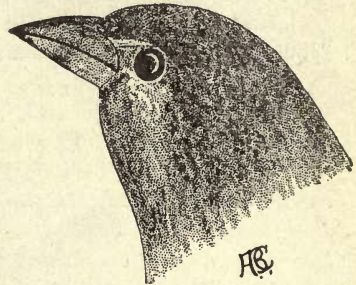
GENUS PASSER BRISS.



English Sparrow, male.



Male, nat. size original.



Female, nat. size original.

228-000-(192). *Passer domesticus* (Linn.). *ENGLISH SPARROW; EUROPEAN SPARROW; HOUSE SPARROW; PARASITE; TRAMP; HOODLUM; GAMMON; PHILIP SPARROW.

Imported species; introduced into New York in 1850; introduced into Michigan in 1879; "first seen at Hubbardston, Ionia County, 1885" (Prof. C. F. Wheeler); very common; already throughout the Lower Peninsula; more common in towns but pushing into the country; noxious species; "like the poor, always with us, at Iron Mountain" (E. E. Brewster); "already at Mackinac Island" (S. E. White); eats grain, often very extensively, especially peas, vegetables and insects; drives away our native birds; is very filthy about houses; a three cent bounty is thinning its ranks, and often, through incorrect determination, the ranks of other Sparrows, etc. (see bulletin No. 62, Michigan Experiment Station, or report of the Michigan State Board of Agriculture, 1890, p. 275); breeds abundantly; it is reported that thirty young may be reared from a single pair in a season; nests about cornices, etc., about houses and concealed places, "often in Grand Rapids in trees, the nests being bulky and open on the side" (R. H. Wolcott); eggs four or five, occasionally six, very rarely nine; soiled white specked with brown. For full account of this bird-pest see excellent report by the United States Department of Agriculture.

GENUS AMMODRAMUS SWAIN.

229-542a-(227). *Ammodramus sandwichensis savanna* (Wils.). *SAVANNA SPARROW.

Not uncommon; migrant; Dr. Atkins took it May 10, 1882; "not sure that it breeds in Michigan" (A. H. Boies); "Monroe County, but does not breed, seeing a bird in summer is not sure proof that it breeds" (Jerome Trombley); "it is evidently a transient" (Dr. M. Gibbs).

230-546-(234). *Ammodramus savannarum passerinus* (Wils.). GRASSHOPPER SPARROW; YELLOW-WINGED SPARROW; CRICKET SPARROW.

Summer resident; southern part of the state (Prof. J. A. Allen); "breeds" (Gibbs' Bird of Michigan); "Hillsdale and Lenawee Counties" (A. H. Boies); "increasingly abundant at Plymouth" (J. B. Purdy); Jerome Trombley has found it breeding in a meadow in Monroe County; "is becoming very common as the forests are cleared off" (Dr. M. Gibbs); two of its common names come from its stridulating note.

231-547-(236). *Ammodramus henslowii* (Aud.). HENSLOW'S SPARROW; HENSLOW'S BUNTING.

Rare; Northwestern Indiana, Lake County (Butler's Birds of Indiana); included in the list of Michigan birds by both Boies and Covert. Mr. A. W. Butler thinks that this and also Leconte's Sparrow *Ammodramus leconteii* will both be found to belong to our Michigan fauna.

232-549a-(241). *Ammodramus caudacutus nelsoni* Allen. NELSON'S SPARROW; NELSON'S SHARP-TAILED FINCH.

Rare; two specimens reported taken Oct. 5, 1878, in Gibbs' Michigan Birds; reported from Northwestern Indiana, where perhaps it is a summer resident (Butler's Bird's of Indiana).

GENUS CHONDESTES SWAIN.



Lark Sparrow, natural size.

233-552-(281). *Chondestes grammacus* (Say). LARK SPARROW; LARK FINCH.

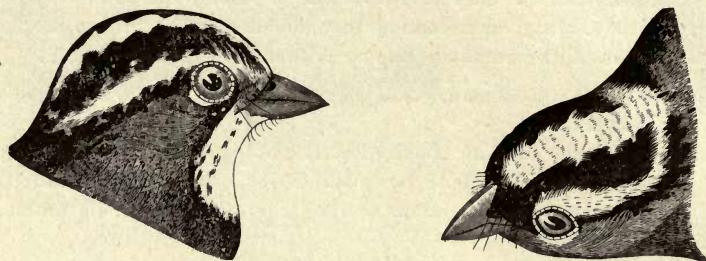
Not rare in northern part of the state; summer months; "rare and irregular at Ann Arbor" (Dr. J. B. Steere); "Sault Ste. Marie" (A. H. Boies); "rare in Monroe County, where two nests have been found" (Jerome Trombley); May to Aug.; arrives in flocks; "breeds irregularly and often very locally" (Dr. W. C. Brownell); "breeds in the Northern Peninsula" (Prof. Ludwig Kumlein); nests in June on the ground or in bushes; eggs four to six, white with irregular lines of black or brown; "locally common, breeds" (Gibbs). Dr. Atkins makes no mention of this bird but we have taken it here.

GENUS ZONOTRICHIA SWAIN.

234-554-(276). *Zonotrichia leucophrys* (Forst.). WHITE-CROWNED SPARROW; WHITE-BROWED SPARROW; WHITE-BROWED CROWNED SPARROW.

Common; throughout the entire state; May and October; "Mackinac Island" (S. E. White); "Keweenaw Point" (Kneeland); "breeds in the Northern Peninsula" (Lud-

wig Kumlein); "doubtful if it breeds in Northern Peninsula" (Dr. A. K. Fisher); migrant in Lower Peninsula; "less common in Monroe County than the White-throated Sparrow" (Jerome Trombley); solitary; "generally gregarious during migration" (Dr. M. Gibbs).



White-throated Crown Sparrow, natural size.

235-558-(275). *Zonotrichia albicollis* (Gmel.). *WHITE-THROATED SPARROW.

Abundant; throughout the entire state; September, April and May; migrant; not uncommon migrant at this place; "though a migrant at Ann Arbor, nests abundantly at Petoskey as late as July" (Dr. J. B. Steere); "common in Grand Traverse County" (M. L. Leach); "common at Iron Mountain" (E. E. Brewster); "very abundant on Keweenaw Point" (Kneeland); "breeds freely in Northern Peninsula" (Prof. Ludwig Kumlein); "summer resident as far south as Grand Rapids" (Dr. M. Gibbs); S. E. White reports this as breeding abundantly at Mackinac Island; eggs four to five; beautiful singers; usually seen in flocks.

GENUS *SPIZELLA* BONAP.

236-559-(268 part). *Spizella monticola* (Gmel.). *TREE SPARROW.

Very common throughout the entire state; "often in flocks with the Junco Snow Birds; "common at Iron Mountain" (E. E. Brewster); "Keweenaw Point" (Kneeland); winter resident; October to April; flocks.

237-560-(269). *Spizella socialis* (Wils.). *CHIPPING SPARROW; CHIPPY; HAIR BIRD.

Very common; throughout the state; April to October; "Mackinac Island" (S. E. White); "common at Iron Mountain" (E. E. Brewster); "not seen in the Northern Peninsula" (A. H. Boies); "Keweenaw Point" (Kneeland); breeds abundantly; nests in May and June, in orchard trees, evergreens, thorn bushes, etc., occasionally in buildings, "sometimes on the ground" (Dr. J. B. Steere); eggs three to five, bluish green with specks of black and obscure brown; migrate south in flocks; one of our best known and most friendly Sparrows.

238-561-(272). *Spizella pallida* (Swain.). CLAY-COLORED SPARROW.

"Rare in Western Indiana and Northern and Western Illinois, probably visits Michigan" (A. W. Butler); "breeds in Upper Peninsula" (Prof. Ludwig Kumlein); "doubtful if it breeds in Northern Peninsula" (Dr. A. K. Fisher); "a very rare migrant" (A. B. Covert's Birds of Washtenaw County, Michigan).

239-563-(271). *Spizella pusilla* (Wils.). *FIELD SPARROW.

Exceedingly abundant; throughout the entire state; "not abundant at Ann Arbor" (Dr. J. B. Steere); "rare in Wayne County" (B. W. Swales); "abundant in Monroe

County" (Jerome Trombley); from April to October; "Mackinac Island" (S. E. White); nests in May, in bushes or on the ground; eggs three to five, grayish white, specked with brown; more shy than the Chipping Sparrow. This delightful singer is a favorite with all lovers of nature.

GENUS JUNCO WAG.

240-567-(261 part). *Junco hyemalis* (Linn.). *SLATE-COLORED JUNCO; COMMON SNOW BIRD; JUNCO; BLACK SNOW BIRD.

Very common; flocks; winter; more common in spring; not rare in summer, north; "summer resident in Montcalm County, but a migrant at Ann Arbor" (Dr. J. B. Steere); "Monroe County from early spring to May" (Jerome Trombley); "common at Iron Mountain" (E. E. Brewster); breeds in the northern part of the state; "builds in Northern Peninsula" (H. Nehrling); "Keweenaw Point" (Kneeland); "nests at Traverse City, in excavations under logs" (L. W. Watkins); "in bushes two to six feet high" (Gibbs); "on the ground" (Coues); or "hole in stump" (Samuels); eggs four, white with reddish specks; reported by Dr. Atkins at Locke July 8, 1879, and by C. W. Gunn at Grand Rapids, a pair apparently breeding July 13, 1878 (Bull. Nuttall Ornithological Club, Vol. IV, p. 238); Mr. S. E. White says this bird may breed in Kent County, as he has taken it in June. These Snow Birds often appear in quite large flocks.

241-567a-(263). *Junco hyemalis oregonus* (Towns.). *OREGON JUNCO; OREGON SNOW BIRD.

"Accidental visitor" (Dr. M. Gibbs); rare; Dr. Atkins reports taking this bird twice in April. This is quite probably an error. Prof. A. W. Butler thinks these notes may refer to *Junco hyemalis shufeldti*, which has been taken at Lafayette, Ind.

GENUS MELOSPIZA BAIRD.

242-581-(244). *Melospiza fasciata* (Gmel.). *SONG SPARROW.

Very common; throughout the entire State; from early spring till late fall; occasional in February; "a few remain through the winter in Monroe County" (Jerome Trombley); "Mackinac Island" (S. E. White); "common at Iron Mountain" (E. E. Brewster); breeds; "Keweenaw Point" (Kneeland); "rears two or three broods a season" (Dr. W. C. Brownell); nests in April and May and August, in bushes, occasionally ten feet high, "have been found in holes of apple trees" (Davie), or on the ground, often surrounded with snow; eggs four or five, sometimes six and very rarely seven. R. H. Wolcott reports a nest at Ann Arbor, 1892, with seven sparrow eggs and one cow bird's egg, grayish or bluish white, thinly, rarely thickly, dotted with varying shades of brown; beautiful singer; very desirable bird. This is a great favorite with all lovers of birds. I have seen these birds take the half grown bark lice clean, from the linden twigs, in early spring.

243-583-(642). *Melospiza lincolni* (Aud.). LINCOLN'S SPARROW.

Very rare; Dr. M. Gibbs reports two specimens taken May 1875, and September 28 and October 9, 1879, and several specimens more recently; E. L. Moseley reports one taken at Grand Rapids in 1887; "should be found breeding in Michigan" (A. W. Butler); "breeds in Northern Peninsula" (Prof. Ludwig Kumlein).

244-584-(243). *Melospiza georgiana* (Lath.). SWAMP SPARROW.

Not rare; probably throughout the State; April and August; "common at Ann Arbor, nesting in the open swamps" (Dr. J. B. Steere); "nests freely about swampy lakes at Plymouth" (J. B. Purdy); "Southern Michigan and Upper Peninsula" (A. H. Boies); "very common in Kent County, have taken the eggs and seen thousands of the birds" (S. E. White); nests on ground usually in swamps; F. M. Falconer reports taking a nest at Hillsdale, three feet from the ground; eggs four to five, bluish or grayish white, specked with brown.

GENUS PASSERELLA SWAIN.



Fox Sparrow, natural size.

245-585-(282). *Passerella iliaca* (Merr.). *FOX SPARROW.

Common; throughout the state; migrant; "common migrant at Iron Mountain" (E. E. Brewster); "taken at Ann Arbor" (Dr. J. B. Steere); "an abundant transient" (Dr. M. Gibbs); March and April, and October and November; "Mackinac Island" (S. E. White); "Keweenaw Point" (Kneeland); a very beautiful singer.

GENUS PIPILO VIEILL.

246-587-(301). *Pipilo erythrophthalmus* (Linn.). *TOWHEE; TOWHEE BUNTING; CHEWINK; MARSH ROBIN; GROUND ROBIN; JEWEE; JOE-WINK.

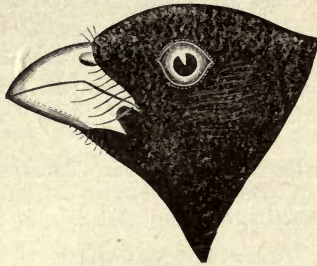
Very common; throughout the state; March to October; reported at Ann Arbor by F. L. Washburn in December (The Auk, Vol. VI, p. 279); Prof. James Satterlee saw it at Greenville the last of November, 1892; "Mackinac Island" (S. E. White); breeds; "very common at Iron Mountain" (E. E. Brewster); nests in June and July, in bushes, low trees, on grass tufts, near the ground, or on the ground. Dr. Atkins once found a nest on a beech knot, one foot from the ground; eggs three to five, very variable, usually grayish or pinkish white, specked with reddish brown.

GENUS CARDINALIS BONAP.

247-593-(299). *Cardinalis cardinalis* (Linn.). *CARDINAL; CARDINAL GROSBEEK; VIRGINIA RED BIRD.

Very rare; "never seen at Ann Arbor" (Dr. J. B. Steere); "have taken a few specimens in Hillsdale and Lenawee Counties" (A. H. Boies); "a few are seen in Monroe County every spring" (Jerome Trombley); "a pair taken in Kent County" (S. E. White); set of eggs taken at Detroit, June 19, 1892 (W. A. Davidson in O. and O., Vol. XVII, 1892, p. 111); Dudley E. Waters took a female in Kent County Aug. 10, 1883, and a male Oct. 24, of the same year. He thinks he saw a young bird. Mr. Jerome Trombley writes me that a pair have nested in Monroe for two years past.

GENUS HABIA REICH.



Rose-breasted Grosbeak, natural size.

248-595-(289). *Habia ludoviciana* (Linn.). *ROSE-BREASTED GROSBK; ROSE-BREASTED SONG GROSBK.

Common; throughout the Southern Peninsula at least; May to Sept.; "Mackinac Island" (S. E. White); "Keweenaw Point" (Kneeland); "said to be common in hard wood district about Iron Mountain, but I have not taken it" (E. E. Brewster); beautiful singer; often seen in flocks; breeds; Mr. L. W. Watkins informs me that he took a male from a nest of five eggs, on which he was sitting; nests in May and June, in orchards, tall shrubs, forest trees, etc., occasionally high up. E. B. Boies reports a nest in a thorn bush, April 19, 1891. Eggs three to five, bluish green, dotted with brown; "male often incubates" (R. H. Wolcott); very beneficial to the farmer and horticulturists, even eats potato beetles as I have observed on several occasions; Forbes says, (report State Horticultural Society, 1881, p. 204) that 66 per cent of food of many examined, consisted of canker worms; L. W. Watkins informs me that this bird nests at Manchester in low bushes, and also breeds at Traverse City; the song of this bird is delightful.

GENUS PASSERINA VIEILL.

249-598-(295). *Passerina cyanea* (Linn.). *INDIGO BUNTING; INDIGO PAINTED FINCH; INDIGO BIRD; BLUE LINNET.

Common; throughout the state; May to October; "Mackinac Island" (S. E. White); "common at Iron Mountain" (E. E. Brewster); nests in May and June, in low bushes, often in gardens; eggs four, white with a bluish tinge. Prof. S. A. Forbes (Bulletin No. 3) found 78 per cent of the food of several which he examined to be canker worms.

250-600-(293 part). *Passerina versicolor* (Bonap.). *VARIED BUNTING.

Dr. Atkins reported taking this rare bird; said to have been observed in Michigan by A. H. Boies. "I think I have seen it" (Dr. Robt. Ridgway); taken by Dr. Atkins May 18, 1874, identified by Ridgway, and now in the collection of Dr. J. M. B. Sill, of Ypsilanti (Dr. Atkins in O. and O., Vol IX, 1884, p. 81).

GENUS SPIZA BONAP.

251-604-(287). *Spiza americana* (Gmel.). *DICKCISSEL; BLACK-THROATED BUNTING; LITTLE MEADOW LARK.

Very common in some localities in Southern Michigan; rare at the college; "a recent arrival" (Dr. J. B. Steere); May to August; "occasional at Ann Arbor" (Dr. J. B. Steere); "Hillsdale County" (A. H. Boies); breeds; nests usually in bushes, sometimes

on the ground; eggs four, immaculate, greenish blue; "very common at Manchester, summer of 1892, and the nests were abundant in clover fields" (L. W. Watkins); food largely insects; some examined by Prof. S. A. Forbes (Michigan Horticultural Report 1881, p. 204) showed one-half the food to be canker worms; "not known in Michigan twenty years ago, but becoming more common each year, still rarely found north of 44° north latitude" (Dr. M. Gibbs).

FAMILY TANAGRIDÆ. TANAGERS.

Highly colored, purely insectivorous.

GENUS PIRANGA VIEILL.

252-608-(154). *Piranga erythromelas* Vieill. *SCARLET TANAGER; BLACK-WINGED REDBIRD.

Common throughout Southern Michigan at least; May to August, occasionally to October; "Mackinac Island" (S. E. White); "common at Iron Mountain" (E. E. Brewster); breeds; nests in May or June, usually on top of horizontal limb, in orchard or small trees, "from twenty to fifty feet from ground on or near ends of swaying branches" (Dr. W. C. Brownell); "often twenty or thirty feet, and rarely, as many as forty feet from the ground" (Prof. Ludwig Kumlein); "nest loose, shallow and coarse" (Prof. J. W. Simmons); eggs three to five, greenish blue spotted with brown; not only a sweet singer, but our most showy bird. Mr. Geo. D. Sones writes me that the nests are often so poorly built that the eggs may be counted from below looking up through the nests. This bird, of late, comes close to our houses on the college campus.

253-610-(155). *Piranga rubra* (Linn.). *SUMMER TANAGER; SUMMER REDBIRD.

Exceedingly rare, and only in extreme southern limit; straggler from the south; not so brilliant as the preceding species, and the male has not the black wings. E. L. Moseley reports one from Michigan; "not seen at Ann Arbor" (Dr. J. B. Steere); "never seen in Monroe County" (Jerome Trombley); if ever seen in Michigan an accidental and very rare straggler.

FAMILY HIRUNDINIDÆ. SWALLOWS.

These feed wholly on insects; are very beneficial, and very amiable toward each other.

GENUS PROGNE BOIE.

254-611-(165). *Progne subis* (Linn.). *PURPLE MARTIN.

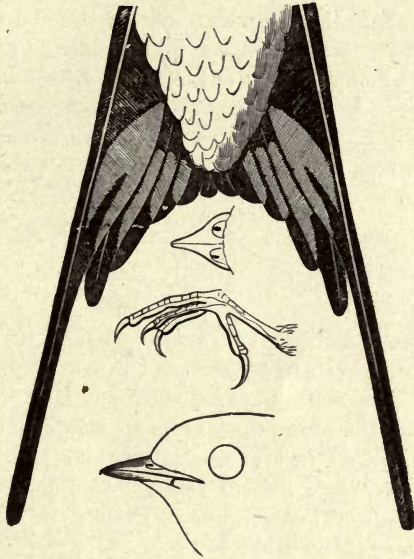
Common throughout the summer, or was so, prior to the reign of the English Sparrows; throughout the state; "rare in Monroe County" (Jerome Trombley); "common at Iron Mountain" (E. E. Brewster); "rare outside Detroit, I hunted for four years to find a set of eggs for my collection" (Dr. W. C. Brownell); "common every year at Hubbardston, where it arrives April 7th to 9th each year" (Prof. C. W. Wheeler); "rare and local in Washtenaw County" (Dr. J. B. Steere); "becoming very rare at Plymouth" (J. B. Purdy); "Grand Traverse County" (M. L. Leach); "Mackinac Island" (S. E. White); "nests commonly at Alma, Gratiot County, in the false fronts of stores, where it successfully combats the European Sparrow" (Prof. C. A. Davis); will oppose the European successfully for a time but will finally yield the fort; "nests in Hillsdale in the hoods over electric lights" (F. M. Falconer); breeds; nests in June, in boxes, holes in trees, etc.; eggs four to six, white; food insects, even Wasps and May Beetles.

GENUS PETROCHELIDON CAB.

255-612-(162). *Petrochelidon lunifrons* (Say). *CLIFF SWALLOW; EAVE SWALLOW; MUD DAUBER; SQUARE-TAILED BARN SWALLOW.

Very common; throughout the State; May to August; "rare and local in Washtenaw County" (Dr. J. B. Steere); "I have counted one hundred and ninety-three nests under the eaves of one barn, from which I think over two thousand young were hatched in one season" (Dr. W. C. Brownell); "occurs at Chandler's Falls, on the Escanaba river, Upper Peninsula, where it breeds" (L. W. Watkins) "Mackinac Island" (S. E. White); breeds; nests under eaves, on sides of embankments, rocks, etc., preferring the southeast or west side; nests of mud; eggs four to six, white, specked with quite large brown spots. Like other birds that nest around our farm buildings, they are being driven off by the English Sparrow. L. W. Watkins reports an entire brood of albinos.

GENUS CHELIDON FORSTER.

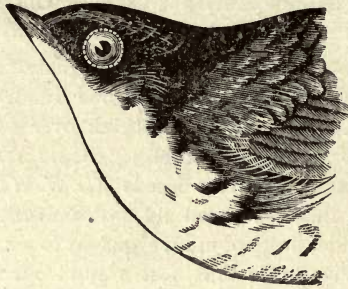


Generic details of Barn Swallow.

256-613-(159). *Chelidon erythrogaster* (Bodd.). *BARN SWALLOW.

Very abundant throughout the State; April to August; "Mackinac Island" (S. E. White); "Keweenaw Point" (Kneeland); breeds; nests in May, in barns and other buildings; "I saw about 300 at my farm at Plymouth, Sept. 4, 1886, and not one after that date" (Dr. W. C. Brownell); two broods and sometimes three; eggs three to six, white, finely spotted with brown, especially at the large end; the tail of this bird is deeply forked. This graceful bird is justly a favorite with farmers and farmers' boys. They are often seen in large flocks just before leaving in early September.

GENUS TACHYCINETA CAB.



White-bellied Swallow, natural size.

257-614-(160). *Tachycineta bicolor* (Vieill.). *TREE SWALLOW; WHITE-BELLIED SWALLOW; BLUE-BACKED SWALLOW; FIELD SWALLOW.

Very common; throughout the state; March or April to August; "common at Iron Mountain" (E. E. Brewster); "Keweenaw Point" (Kneeland); breeds; often two broods; nests in May and June, in hollow stumps or holes in trees or buildings, "often in stubs in or near water" (Dr. W. C. Brownell); eggs four to seven, occasionally nine, white. I have taken several nests from hollow stumps, and always found them lined with pure white feathers, many of which were too large to have come from this bird.

GENUS CLIVICOLA FORST.

258-616-(163). *Clivicola riparia* (Linn.). *BANK SWALLOW; SAND SWALLOW; SAND MARTIN.

Very abundant; throughout the state; May to August; "Mackinac Island" (S. E. White); breeds abundantly; nests in May in sand banks; A. B. Covert, of Ann Arbor, once saw it nesting in a crevice of a building (does not Mr. Covert's note refer to the next species?); eggs five or six, white; these birds are very amiable, never seen quarrelling; "I have found three nests in branches of one hole" (Dr. W. C. Brownell); Mr. Robt. M. Wolcott saw at White Lake, Muskegon County, July, 1891, an immense colony, numbering hundreds. The bank was very sandy and several nests had a common vestibule near the face of the bank.

GENUS STELGIDOPTERYX BAIRD.

259-617-(164). *Stelgidopteryx serripennis* (Aud.). *ROUGH-WINGED SWALLOW.

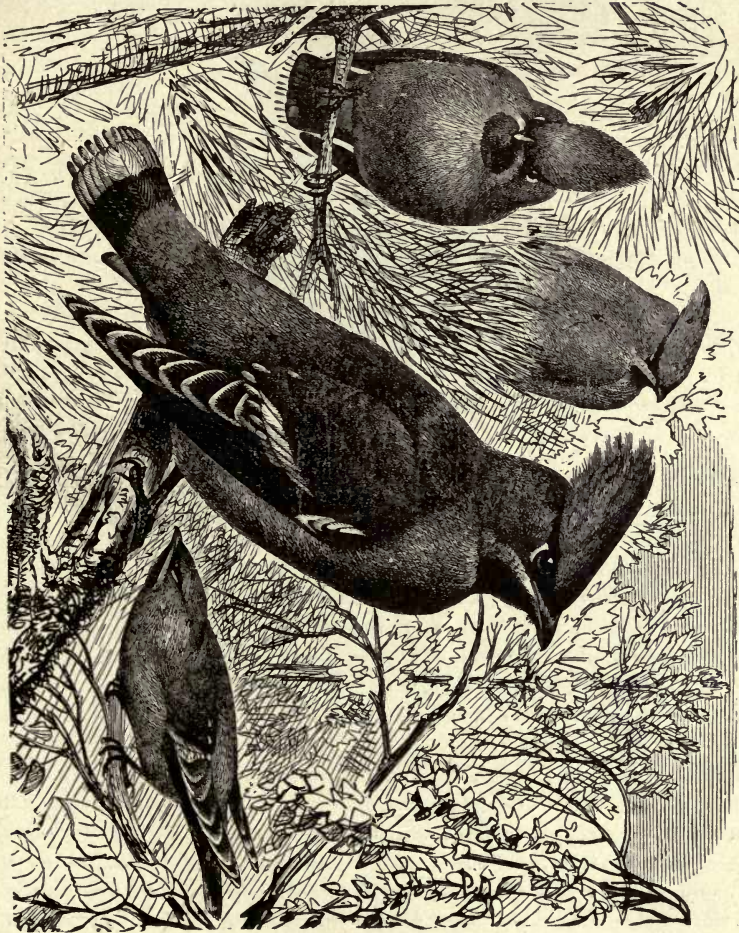
Rather common; "in the southern part of the state" (Prof. J. A. Allen); May to August; nests in May, in sand banks, or "buildings or crevices in stone walls" (A. W. Butler); eggs and food habits much as in bank swallows. Dr. Gibbs informs me that the opening to the nest is circular, and not elliptical as it always is in case of the Bank Swallow. He adds further that this bird often builds in crevices in bridges, etc.

FAMILY AMPELIDÆ. WAXWINGS, ETC.

Beautiful birds; fly in flocks; feed on seeds, insects and fruit.

SUBFAMILY AMPELINÆ. WAXWINGS.

GENUS AMPELIS LINN.



Bohemian Waxwing, one-half natural size.

260-618-(166). *Ampelis garrulus* Linn. * BOHEMIAN WAXWING.

Very rare; winter visitor; occasional in spring. Dr. G. W. Topping, DeWitt, Michigan, took from one to three in April of each of the years 1879-80-81 from flocks going north; "in flocks in Kent County nearly every spring, often as many as one hundred" (Dudley E. Waters); does not Mr. Waters refer to the next species?

Mr. Levi Broas has several in his collection, which he took in Ionia County; "seen in early spring at Bay City in 1884" (N. A. Eddy, in O. and O., Vol. IX, 1884, p. 41); Dr. Atkins took this bird at Locke several times in March and once in April; E. L. Moseley reports two from Michigan; "four seen in Kent County, April 4, 1889" (S. E. White); "often exceedingly abundant in Northern Michigan" (H. Nehrling); "several flocks seen at Charlevoix in the fall several years since" (M. L. Leach); "Upper Peninsula" (A. H. Boies); "Keweenaw Point" (Kneeland); "Traverse City" (M. L. Leach). "Has been taken in southern Indiana several times" (A. W. Butler).



Cedar Bird, natural size.

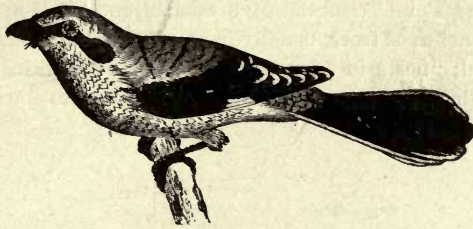
261-619-(167). *Ampelis cedrorum* (Viell.). *CEDAR BIRD; CEDAR WAX-WING; CHERRY BIRD.

Very common; throughout the State; April to August; not rare in winter; embraced in Cabot's Birds of Lake Superior; "common at Iron Mountain" (E. E. Brewster); "Keweenaw Point" (Kneeland); migrates frequently for short distances; in flocks; breeds; nests in bushes, trees of the orchard or woodland, etc., in July and August; eggs four to six, light drab or clay white, specked with black and brown; eats cherries, apple blossoms, berries and insects, "eats three thousand canker worms daily" (Forbes report Michigan State Horticultural Society, 1881, p. 204); "I have seen them feeding extensively on canker worms" (Prof. C. A. Davis); "eat elm beetles and many other insects" (Dr. A. K. Fisher). From a preliminary report by F. E. L. Beal for the United States Department of Agriculture, manuscript kindly loaned to me, I find that 125 stomachs of these birds from 14 states were examined. The conclusions reached were these: 1st, that the Cedar Birds eat a certain amount of insect food at all times, when it can be obtained, aggregating in this case 17% of the food for the whole year; 2d, that the greatest amount of insect food is eaten during the month when fruit is the most abundant; 3d, that the greatest number of insects is eaten in the month of May, with a decrease, during the succeeding months until September, when the percentage again rises; 4th, that the young, while in the nest, are fed to a great extent upon insect food; eats mountain-ash berries, etc., in winter. These beautiful birds do not seem to be exclusively insectivorous, and a flock will destroy an immense number of cherries; Dr. M. Gibbs writes me that he has reared the young, taken from the nests, entirely on fruit.

FAMILY LANIIDÆ. SHRIKES.

Feed on insects, small birds, mice, etc., on the whole probably our friends.

GENUS LANIUS LINN.



Butcher Bird, reduced.

262-621-(186). *Lanius borealis* Vieill. * NORTHERN SHRIKE; BUTCHER BIRD.

Rather common; throughout the State; "rare at Ann Arbor" (Dr. J. B. Steere); winter; November to March or April; "occasionally in winter in Wayne County" (B. W. Swales); seen at Iron Mountain by E. E. Brewster; "Keweenaw Point" (Kneeland); "this shrike is not known to breed in United States" (Dr. A. K. Fisher); Prof. J. A. Allen thinks it may breed in Upper Peninsula; impales mice, insects, and small birds, frogs, etc., on thorns, probably for future use; "kills English Sparrows, and impales insects on barbs of wire in fences" (Dr. W. C. Brownell); Prof. Chas. A. Davis tells me that an observant friend suggests that this habit has arisen because the bird has no talons, so it hangs bird, mouse, or insect up to aid in tearing it to pieces; "all winter at Manchester, chasing and killing English Sparrows" (L. W. Watkins); these birds are reported to attract other birds by mimicry and then destroy them; Dr. G. W. Topping, Dr. W. C. Brownell, and Mr. J. B. Purdy speak of the nesting of this bird. They must refer to the White-rumped Shrike.

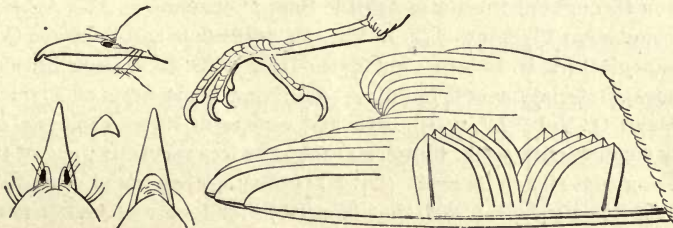
263-622a-(188 part). *Lanius ludovicianus excubitorides* (Swains.). * WHITE-RUMPED SHRIKE.

Common from April to October; "the common variety in Monroe County" (Jerome Trombley); breeds; nests in May in orchards; "nests rarely at Ann Arbor" (Dr. J. B. Steere); eggs four to six, dirty white specked with brown. These birds do destroy small birds, but as they destroy so many insects, especially locusts, they are to be considered as beneficial to the farmer. This species is often mistaken for the Loggerhead Shrike, *Lanius ludovicianus*, which species does not occur in Michigan.

FAMILY VIREONIDÆ. VIREOS OR GREENLETS.

Beautiful singers; exclusively insectivorous; very beneficial.

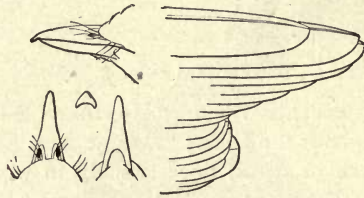
GENUS VIREO VIEILL.



Red-eyed Vireo, natural size.

264-624-(170). *Vireo olivaceus* (Linn.). *RED-EYED VIREO; RED-EYED GREENLET

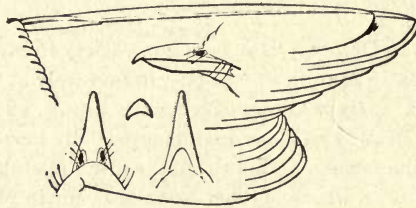
One of our most common birds; throughout the state; frequents parks and woodlands; April to September; included in Cabot's list of Birds of Lake Superior; "Mackinac Island" (S. E. White); E. E. Brewster finds this species very common at Iron Mountain; "Keweenaw Point" (Kneeland); breeds; often double brooded; nests in June on the horizontal branches of trees, usually in woodlands, occasionally in orchards; the nest is very beautiful; "nests in Traverse City" (L. W. Watkins); nests suspended below limb, not hanging like those of Orioles; eggs three to four, rarely five, white, spotted with blackish dots.



Brotherly Love Vireo, natural size.

265-626-(173). *Vireo philadelphicus* (Cass.). *PHILADELPHIA VIREO; BROTHERLY-LOVE VIREO; BROTHERLY-LOVE GREENLET.

Rare; migrant; taken at the college Sept. 11, 1889; "rare in Kalamazoo County" (Dr. M. Gibbs); Dr. M. Gibbs writes me that he has taken it in Kalamazoo and Ottawa Counties; "quite common fall migrant at Mackinac Island, have taken several in Kent County" (S. E. White); we find it not uncommon here this May, 1893; Forbes found (report Michigan State Horticultural Society, 1881, p. 204) that 35 per cent of food consisted of canker worms.

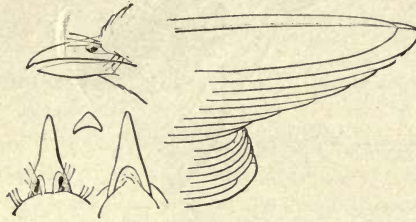


Warbling Greenlet.

266-627-(174, 175). *Vireo gilvus* (Vieill.). *WARBLING VIREO; WARBLING GREENLET.

Common throughout the state; April to Sept.; "common at Ann Arbor" (Dr. J. B. Steere); "common at Plymouth" (J. B. Purdy); "Hillsdale and Lenawee Counties and Upper Peninsula" (A. H. Boies); "Mackinac Island" (S. E. White); breeds; has been known to steal material for nest building from King Birds' nests at Plymouth, Michigan (see O. and O., Vol. XIV, p. 93); nests and eggs as in *Vireo olivaceus*, except nests are slightly smaller, with softer lining, and the eggs less specked; "one of the very few birds that sing as it sits on its nest" (Dr. M. Gibbs); Forbes found (report of Michigan Horticultural Society, 1881, p. 204) that 35 per cent of food was canker worms; "nests

abundantly at Manchester, the nest hanging from the horizontal crotch of a limb" (L. Whitney Watkins). This sweet singer is a very valuable bird.



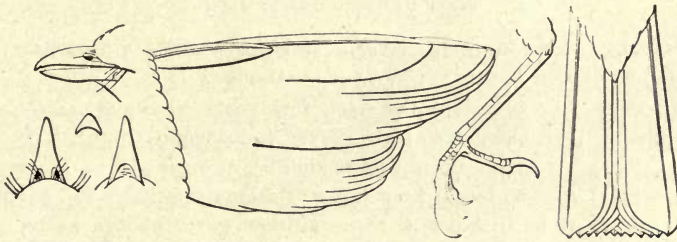
Yellow-throated Vireo, natural size.

267-628-(176). *Vireo flavifrons* (Vieill.). *YELLOW-THROATED VIREO.

Common; April to September; "common at Ann Arbor" (Dr. J. B. Steere); "rare in Wayne County" (B. W. Swales); "common in Hillsdale and Lenawee Counties" (A. H. Boies); "Mackinac Island" (S. E. White); breeds; nests in June, in trees; "nest from seven to thirty feet high, usually about twelve, and covered with lichens" (Dr. M. Gibbs); eggs rosy white, spotted with brown.

268-629-(177). *Vireo solitarius* (Wils.). *BLUE-HEADED VIREO OR GREENLET; SOLITARY GREENLET.

Rare; May and October; migrant; S. E. White finds this at Mackinac Island; E. E. Brewster has taken it at Iron Mountain; Dr. M. Gibbs writes me that it is a summer resident in Wexford County.



White-eyed Vireo, natural size.

269-631-(181). *Vireo noveboracensis* (Gmel.). *WHITE-EYED VIREO OR GREENLET.

"Scarce summer sojourner, breeds" (Dr. M. Gibbs on authority of Messrs. A. B. Covert and the late D. D. Hughes); "Keweenaw Point" (Kneeland); embraced in Cabot's Birds of Lake Superior.

FAMILY MNIOTILTIDÆ. WARBLERS, WOODLAND WARBLERS.

Small birds; often sweet singers; usually beautiful; mostly insectivorous; eggs almost always bluish white or cream colored specked with brown. Of many killed this spring—1893—the stomachs almost invariably contained both seeds and insects.

GENUS MNIOTILTA VIEILL.



Black and White Creeper, natural size.

270-636-(91, 92). *Mniotilta varia* (Linn.). BLACK AND WHITE WARBLER; BLACK AND WHITE CREEPER.

Throughout the lower Peninsula at least; common; rare in some localities; a pair taken at college by A. B. Cook, May 10, 1893; "Mackinac Island" (S. E. White); breeds; "not observed nesting at Ann Arbor" (Dr. J. B. Steere); "not common but breeds in Monroe County and always on the ground" (Jerome Trombley); "Dennis Nolan found a nest under a log in Kalamazoo County" (Dr. M. Gibbs); "never found a nest at Plymouth" (J. B. Purdy); "found one nest in Wayne County" (Dr. W. C. Brownell); nests in May, usually on the ground, under logs, very rarely in hollow trees; eggs four or five, white with yellowish tinge, and specked with brown, most of the brown is in the form of a wreath around the large end; eats insects and insects' eggs; very beneficial. This bird reminds us of the Creepers and Titmice, in its climbing along branches in quest of insects.

GENUS PROTONOTARIA BAIRD.

271-637-(95). *Protonotaria citrea* (Bodd.). * PROTHONOTARY WARBLER; GOLDEN SWAMP WARBLER; WILLOW WARBLER.

Rare at Lansing; "abundant the last few years in Southwestern Michigan" (Dr. M. Gibbs); "rare along Kalamazoo river in Allegan County" (S. E. White); "Lenawee County" (A. H. Boies); "has not been observed in Monroe County" (Jerome Trombley); breeds; found breeding in Michigan, latitude 42° north, by K. R. Wilhelm; nests in June, in holes in trees, stumps etc.; "always nests near water, usually over it" (Dr. M. Gibbs); "at St. Joseph" (Butler's Birds of Indiana); "not rare in Cass County, found in swamps and thickets" (Prof. J. W. Simmons). For interesting account of its migration routes, see "Notes on the range of the Prothonotary Warbler in Indiana," by Amos W. Butler, O. and O., March, 1888, pp. 33-34; also "Proceedings Indiana Academy of Science, 1891, p. 165.

GENUS HELMITHERUS RAFIN.



Worm-eating Warbler, natural size.

272-639-(96). *Helminthophila vermivorus* (Gmel.). WORM-EATING WARBLER.

Rare; "Lenawee and Hillsdale Counties" (A. H. Boies); "Northern Indiana, song very like that of Chipping Sparrow" (A. W. Butler).

GENUS HELMINTHOPHILA RIDG.

273-641-(98). *Helminthophila pinus* (Linn.). BLUE-WINGED WARBLER, BLUE-WINGED YELLOW WARBLER.

Rare; "summer sojourner" (Gibbs' Birds of Michigan); "very rare in Monroe County, where it is transient, only two ever seen" (Jerome Trombley); "locally distributed" (Dr. M. Gibbs); breeds; nests in May on the ground; eggs four to five; "this and the preceding species are very rare in Northern Indiana" (A. W. Butler); S. E. White took two of these on Mackinac Island July 1, 1889. *Helminthophila leucobronchialis* (Brewst.), which has been reported from Michigan, (The Auk, Vol. I, pp. 359-363), is now regarded as a hybrid between this and the next species, as I learn from Prof. J. A. Allen. The same is doubtless true of the bird described as *Helminthophila gunnii* in the Grand Rapids Daily Democrat, June 1, 1879.

274-642-(102). *Helminthophila chrysoptera* (Linn.). *GOLDEN-WINGED WARBLER; BLUE GOLDEN-WINGED WARBLER.

Throughout the state; May to August; "common summer resident in Monroe County" (Jerome Trombley); "Mackinac Island" (S. E. White); "have found nests with four eggs at Plymouth" (J. B. Purdy); breeds; nests in May, on the ground; eggs four to five, rarely six; one of our most beautiful warblers. Dr. M. Gibbs writes me that he has taken many nests in Kalamazoo County; Mr. Davie says that Mr. J. P. Norris has a set of four eggs from Monroe County, Mich., and a set of five from near Detroit (Nests and Eggs of North American Birds, p. 360).

275-645-(106 part). *Helminthophila ruficapilla* (Wils.). *NASHVILLE WARBLER.

Rather common; migrant; May; "very common migrant in Lake County, Indiana, and also a rare resident" (Dr. Brayton's Birds of Indiana, p. 105); "often common in Monroe County" (Jerome Trombley); "Mackinac Island, where it breeds" (S. E. White); "common at Iron Mountain" (E. E. Brewster); possibly breeds; nests in June, on the ground; eggs three to five; feeds on insects; beneficial.

276-646-(107). *Helminthophila celata* (Say). *ORANGE-CROWNED WARBLER.

Rare; May and September; migrant; this one is easily mistaken for the last mentioned species; "Plymouth" (J. B. Purdy); "common but migrant at Ann Arbor" (Dr. A. K. Fisher); reported several times by Dr. Atkins at Locke.

277-647-(109). *Helminthophila peregrina* (Wils.). *TENNESSEE WARBLER.

Not common; "rare in Monroe County" (Jerome Trombley); taken at Plymouth by J. B. Purdy; May and September and October; migrant; "breeds near L'Anse, Upper Peninsula" (Prof. Ludwig Kumlein); often mistaken for the Nashville Warbler. S. E. White finds this common in late September, and late October at Mackinac Island, where it is also a migrant.

GENUS COMPSOTHYLPIS CAB.

278-648 (93). *Compsothlypis americana* (Linn.). *PARULA WARBLER; BLUE YELLOW-BACKED WARBLER.

Rare; May and June; "Lenawee and Hillsdale Counties" (A. H. Boies); "Mackinac Island" (S. E. White); occasionally breeds; nests in June, in trees, "often in a bunch of lichens" (Dr. A. K. Fisher); nest elaborate; eggs four to five, white with yellowish tinge and specked with brown. "Never found a nest at Plymouth" (J. B. Purdy); "this bird is a transient in Monroe County, where it is becoming very rare" (Jerome Trombley).

GENUS DENDROICA GRAY.

279-650-(126). *Dendroica tigrina* (Gmel.). CAPE MAY WARBLER.

Not rare in spring and autumn; "common in Kent County in spring migrations, not rare in autumn; migrant; frequents the orchards and pines" (S. E. White); "see them every year in Kent County from May 7 to May 15, have killed fifteen in one day" (Dudley E. Waters); I have it reported from Thunder Bay Island; "Lenawee County" (A. H. Boies); "Monroe County, very rare, only two seen" (Jerome Trombley); "Mackinac Island" (S. E. White); in Cabot's list of Birds of Lake Superior; "known to breed near Green Bay, Wisconsin" (Prof. Ludwig Kumlein).

280-652-(111 part). *Dendroica aestiva* (Gmel.). *YELLOW WARBLER; YELLOW BIRD; SUMMER YELLOW BIRD.

Our most common resident warbler; April and May to August and September; taken at college by A. B. Cook, May 10, 1893, who finds it common; "not observed in Upper Peninsula" (A. H. Boies); "Mackinac Island" (S. E. White); "taken at Iron Mountain" (E. E. Brewster); "Keweenaw Point" (Kneeland); breeds; nests in May, in thick foliage, in bushes or small trees, especially in willows along streams; nests exquisite; eggs four, occasionally five, yellowish white or greenish gray, specked with brown; J. B. Purdy reports a full set of albino eggs; Forbes found (see report of Michigan Horticultural Society, 1881, p. 204) that 66% of the food of several birds examined consisted of canker worms. "It feeds extensively on the larvæ of elm beetles" (Dr. A. K. Fisher). This is an excellent little bird friend.

281-654-(117). *Dendroica caerulescens* (Gmel.). *BLACK-THROATED BLUE WARBLER.

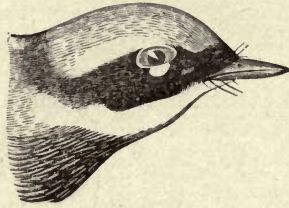
Common; migrant; two pairs taken at college by A. B. Cook May 10, 1893; "Mackinac Island" (S. E. White); possibly breeds north; "C. W. Gunn found it breeding in Ottawa County" (Dr. M. Gibbs); "migrant in Southern Michigan" (Jerome Trombley); "taken at Iron Mountain in spring" (E. E. Brewster); nests in low brushwood; eggs four to five, rosy white, and like those of most warblers specked with brown.



Yellow-rumped Warbler, natural size

282-655-(119). *Dendroica coronata* (Linn.). *MYRTLE WARBLER; YELLOW-RUMPED WARBLER; GOLDEN-CROWN WARBLER.

Very common; throughout the entire state; several taken in May, 1893, at college, by A. B. Cook; migrant in the southern part of the state; one nest found near Detroit by B. W. Swales (O. and O., Vol. XVI, 1891, p. 148); April or May and October; "our earliest migrant at Morrice" (Dr. W. C. Brownell); "our earliest warbler at Iron Mountain, taken April 16, 1890" (E. E. Brewster); breeds north; "nests at Mackinac Island in July and August" (S. E. White); "Keweenaw Point" (Kneeland); "nests in evergreens, eggs four" (J. W. Simmons).



Black and Yellow Warbler, natural size.

283-657-(125). *Dendroica maculosa* (Gmel.). *MAGNOLIA WARBLER; BLACK AND YELLOW WARBLER.

Common; migrant; "quite common migrant in Monroe County" (Jerome Tromb-ley); "common but shy in Lenawee County" (A. H. Boies); taken by E. E. Brewster at Iron mountain; "Keweenaw Point" (Kneeland); May and June, and September and October; embraced in Cabot's Birds of Lake Superior; "abundant at Mackinac Island where it breeds" (S. E. White); "builds in Northern Michigan" (Davie's Nests and Eggs of North American Birds); a beautiful species.

284-658-(118). *Dendroica cerulea* (Wils.). *CERULEAN WARBLER; BLUE WARBLER.

Rather common; "Lenawee County" (A. H. Boies); "DeWitt" (Dr. G. W. Top-ping); "next to Yellow Warbler the most common warbler breeding in Monroe County" (Jerome Tromb-ley); "have only taken one in Kent County" (S. E. White); May and June; very handsome; breeds; "several nests taken in Wayne County" (Dr. W. C. Brownell); nest taken near Detroit June 19, by W. A. Davidson (O. and O., Vol. XVII, 1892, p. 111); nests in May in high trees; this is quite common in the thickets about the college.



Chestnut-sided Warbler, natural size.

285-659-(124). *Dendroica pensylvanica* (Linn.). *CHESTNUT-SIDED WARBLER.

Very common, some seasons; throughout the entire State; "migrant at Plymouth" (A. B. Purdy); "Mackinac Island where it breeds" (S. E. White); "very common resident

at Iron Mountain" (E. E. Brewster); "more commonly found in swamps" (Prof. J. W. Simmons); several taken at college—the first May 10—by A. B. Cook in May, 1893. He finds it the most common Warbler; breeds; "nests found near Detroit by B. Swales" (O. and O., Vol. XVI, 1891, p. 148). Dr. M. Gibbs writes me that he once found five nests in one day in Kalamazoo County, where it rarely builds now; said to be two brooded in Canada; nests in June, in low bushes; eggs four or five. This species rears many Cow Birds.

286-660-(123). *Dendroica castanea* (Wils.). * BAY-BREASTED WARBLER.

Rather common; migrant in Southern Michigan; May and October; "Lenawee County and Northern Peninsula" (A. H. Boies); "breeds in Northern Peninsula" (Prof. Ludwig Kumlein); male taken at college May 20, 1893, by A. B. Cook; "breeds in Northern Michigan" (Davie's Nests and Eggs of North American Birds, p. 373). S. E. White writes me that he shot immature specimens at Mackinac Island as late as July; we have taken this species here more frequently in the spring; Dr. Atkins reports this species as very rare at Locke. Its song is very charming.



Black-poll Warbler, natural size.

287-661-(122). *Dendroica striata* (Forst.). * BLACK-POLL WARBLER.

Common; migrant; a pair taken by A. B. Cook at the college May 20, 1893; "Monroe County, some years very common" (Jerome Trombley); "Mackinac Island" (S. E. White); "Keweenaw Point" (Kneeland); "Iron Mountain May 24, 1881" (E. E. Brewster); "common spring migrant in Upper Peninsula" (Prof. Ludwig Kumlein).

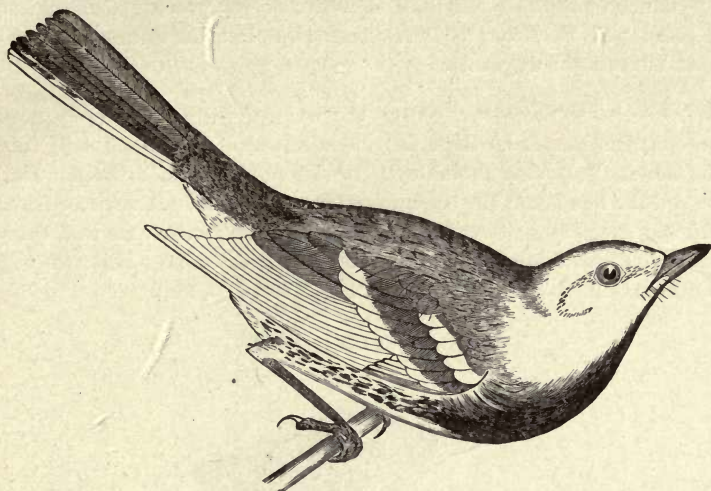
**288-662-(121). *Dendroica blackburniæ* (Gmel.). * BLACKBURNIAN WARBLER;
ORANGE-THROATED WARBLER; HEMLOCK WARBLER.**

Rare; "rare migrant in Monroe County" (Jerome Trombley); rare in summer; throughout the Southern Peninsula; "Mackinac Island" (S. E. White); "common at Iron Mountain" (E. E. Brewster); "Hillsdale and Lenawee Counties" (A. H. Boies); "DeWitt" (Dr. G. W. Topping); A. B. Cook took one male and two females of this handsome Warbler at the college May 18, the only ones seen up to this date, May 26, 1893; breeds north; "nests in Northern Peninsula" (Prof. Ludwig Kumlein); "has been found breeding in Southern Michigan where nests have been taken in pine trees, at an elevation of forty feet" (Davie's Nests and Eggs of North American Birds, p. 373); "B. F. Syke found two nests in Kalamazoo County, both quite high in tamarack trees" (Dr. M. Gibbs).

**289-663a-(130). *Dendroica dominica albilora* Baird. {SYCAMORE WARBLER;
WHITE-BROWED YELLOW-THROATED WARBLER.**

Rare; "early migrant" (Dr. M. Gibbs); "rather rare summer resident, breeds, nests in tall sycamores on Raisin river" (Jerome Trombley); Dr. M. Gibbs writes me that he

has found one nest in Kalamazoo County; "said to be often common about Detroit" (Butler's Birds of Indiana).



Black-throated Green Warbler, natural size.

290-667-(112). *Dendroica virens* (Gmel.). *BLACK-THROATED GREEN WARBLER.

April and May, and August and September; usually a migrant south; nests north of Montcalm County; "breeds sparingly in Kent County but abundantly at Mackinac Island" (S. E. White); "Keweenaw Point" (Kneeland); "taken in spring at Iron Mountain" (E. E. Brewster); "nests abundantly in Northern Peninsula" (Prof. Ludwig Kumlein); "breeds in Northern Michigan" (Davie's Nests and Eggs of North American Birds). This bird has been taken in Montcalm County by Dr. J. B. Steere, and in Ionia County by Mr. Levi Broas.

291-670-(131). *Dendroica kirtlandi* Baird. KIRTLAND'S WARBLER

"Rare straggler" (Dr. M. Gibbs); "one from Battle Creek May 11, 1883, identified by Robt. Ridgway; taken by Mr. Knapp at Ann Arbor May, 1888 (The Auk, Vol. VI, p. 279); one from Straits of Mackinaw, identified by Dr. C. Hart Merriam (The Auk, Vol. I, pp. 376 and 389); in 1879 nine specimens known, the fifth and ninth taken by A. B. Covert in Washtenaw County (H. A. Burdie in Bull. Nuttall Ornithological Club, Vol. IV, p. 185); reported by Dr. C. Hart Merriam from Straits of Mackinaw, May 21, 1885 (The Auk, Vol. I p. 376).

292-671-(134). *Dendroica vigosii* (Aud.). *PINE WARBLER; PINE-CREEPING WARBLER.

April and May and September and October; J. E. Nichols of Lansing has taken these often in October; not observed in Monroe County" (Jerome Trombley); "very common at Iron Mountain, and probably a summer resident" (E. E. Brewster); breeds north; "nests at Traverse City" (L. Whitney Watkins); "found all summer in Kent County, probably breeds" (S. E. White); "song resembles that of sparrow and is not warbler like" (Dr. M. Gibbs).

293-672-(132). *Dendroica palmarum* (Gmel.). *PALM WARBLER; YELLOW RED-POLLED WARBLER; WAG-TAILED WARBLER; TITLARK WARBLER.

Very common migrant; May and October; flocks; "occurs at Mackinac Island" (S. E. White); "E. E. Brewster has taken it at Iron Mountain; one of our most common and beautiful migrants.

294-673-(127). *Dendroica discolor* (Vieill.). PRAIRIE WARBLER.

"Rare migrant, breeds north of 44° north latitude" (Dr. M. Gibbs); "not observed in Monroe County" (Jerome Trombley); "breeds in Michigan" (Davie); Dr. M. Gibbs writes me that he has taken the eggs; found very common at Mackinac Island by S. E. White who has specimens taken there; Prof. J. A. Allen writes me that this bird does not go north of Central Michigan; Dr. M. Gibbs collected nest and two eggs May 26, 1879, in Ottawa County (Bul. Nutt. Orn. Club, Vol. IV, p. 186).

GENUS SEIURUS SWAINS.



Oven Bird, natural size.

295-674-(135). *Seiurus aurocapillus* (Linn.). *OVEN BIRD; GOLDEN-CROWNED THRUSH; WOOD WAGTAIL.

Very common; throughout the Southern Peninsula at least; April to September, rarely to October; "usually seen on the ground" (Prof. J. W. Simmons); "abundant at Ann Arbor" (Dr. J. B. Steere); "common in Lenawee and Hillsdale Counties" (A. H. Boies); "Mackinac Island" (S. E. White); taken at Iron Mountain by E. E. Brewster; breeds; nests in June on the ground, often under log; nest oven-like, hence common name of bird; nests common near marshes about the college; eggs four to six. This bird is retiring and usually found in dense thickets; "sings at all times of night" (Samuels). When we drive this bird from the nest it feigns lameness and flutters away to lure us from its eggs and young. This bird rears very numerous Cow Birds.

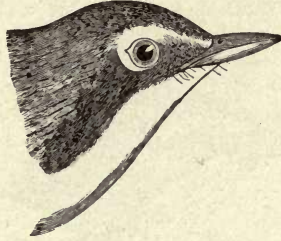
296-675-(136). *Seiurus noveboracensis* (Gmel.). *WATER THRUSH; SMALL-BILLED WATER THRUSH; WATER WAGTAIL.

Rare; migrant; April and May; "rare transient in Kalamazoo County" (Dr. M. Gibbs); "very rare in Kent County, one taken May 9, 1891" (S. E. White); "Keweenaw Point" (Kneeland); "taken in Hillsdale County" (A. H. Boies); "rare in Monroe County" (Jerome Trombley); frequents dense thickets in swamps; "breeds in Northern Indiana where it is a rare summer resident" (A. W. Butler); nests in June, among roots of turned up trees, in marshes or under stumps, logs, etc.; eggs four to six, delicate cream, densely specked with reddish brown.

297-676-(138). *Seiurus motacilla* (Vieill.). *LOUISIANA WATER THRUSH; LARGE-BILLED WAG TAIL WARBLER.

Not uncommon, especially in the southern part of the state; April to August; "common in Kalamazoo County" (Dr. M. Gibbs); "very common in Kent County" (S. E. White); breeds; nests on the ground, under logs, or as in the preceding species; eggs as in the preceding. Mr. Jerome Trombley writes me that this is the common "Water Thrush" of Monroe County.

GENUS GEOTHLYPIS CAB.



Kentucky Warbler, natural size.

298-677-(140). *Geothlypis formosa* (Wils.). * KENTUCKY WARBLER.

Exceedingly rare; Dr. Atkins reports taking one specimen June 24, 1878; Dr. M. Gibbs reports one specimen taken by him in Kalamazoo County.

299-678-(139). *Geothlypis agilis* (Wils.). * CONNECTICUT WARBLER.

Exceedingly rare, but becoming more common; "one of our rarest Warblers" (Dr. M. Gibbs); May and June; migrant; "first taken May, 1879, in Kalamazoo, Washtenaw, Ottawa and Ingham Counties within a week" (Dr. M. Gibbs); "one taken August 30, 1889, and the same date in 1890, and one taken a week later in Kent County" (S. E. White); Mr. Chas. W. Gunn reports one from Ingham and one from Ottawa County (Bull. Nuttall Ornithological Club, Vol. IV, p. 123); this is one of the latest Warblers to arrive in the spring.

300-679-(142). *Geothlypis philadelphia* (Wils.). * MOURNING WARBLER.

Occasionally quite common; May to August; "Hillsdale and Lenawee Counties" (A. H. Boies); "migrant at Plymouth" (J. B. Purdy); "rare in Monroe County" (Jerome Trombley); "rare in Kalamazoo County" (Dr. M. Gibbs); "Mackinac Island" (S. E. White); embraced in Cabot's Birds of Lake Superior; "Iron Mountain, May, 1888" (E. E. Brewster); "breeds north on edge of pinery" (Dr. M. Gibbs). Dr. Gibbs writes me that it is abundant in second growth clearings in the pine region north of 44 degrees north latitude; nest and eggs as in next species. Taken here by A. B. Cook, May 17, 1893.



Maryland Yellow-throat, male, natural size.

301-681-(141 part). *Geothlypis trichas* (Linn.). *MARYLAND YELLOW-THROAT;
YELLOW-THROATED GROUND WARBLER.

Very common; throughout the state; May to August; "abundant at Ann Arbor" (Dr. J. B. Steere); "common at DeWitt" (Dr. G. W. Topping); reported from Hillsdale and Lenawee Counties and at Sault Ste. Marie, July 16, 1892, by A. H. Boies, who thinks it breeds in the Northern Peninsula; "common at Mackinac Island" (S. E. White); "common at Iron Mountain" (E. E. Brewster); breeds; "two broods" (Dr. W. C. Brownell); nests from May to July, on the ground or in low thickets; nests often arched over; eggs four to six, clear white specked with reddish dots, though quite variable in size, form and markings; one of our finest singers and justly a favorite.

GENUS ICTERIA VIKILL.

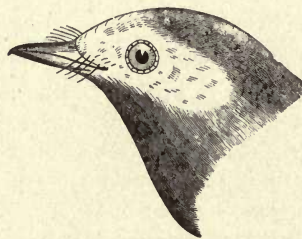


Yellow-breasted Chat.

302-683-(144). *Icteria virens* (Linn.). *YELLOW-BREASTED CHAT.

Exceedingly rare; "occasionally quite common" (Dr. H. A. Atkins); "not observed at Ann Arbor" (Dr. J. B. Steere); "once in Lenawee County" (A. H. Boies); "formerly nested in Monroe County, not seen since 1881" (Jerome Trombley); May to October; breeds; nests in May and June in bushes; eggs four; song varied and beautiful; "ventriloquist" (Butler's Birds of Indiana); "this is a southern species" (Prof. J. A. Allen).

GENUS SYLVANIA NUTT.



Hooded Warbler, natural size.

303-684-(146). *Sylvania mitrata* (Gmel.). *HOODED WARBLER; HOODED FLY-CATCHING WARBLER.

Quite common in southern part of State; generally a migrant; May and October; "breeds plentifully south of 42°, have taken many nests" (Dr. M. Gibbs); "common but transient in Monroe County" (Jerome Trombley); nests in May in low bushes; "eggs three, often only two" (Gibbs); an elegant bird.

304-685 (147). *Sylvania pusilla* (Wils.). WILSON'S WARBLER; GREEN BLACK-CAPPED YELLOW WARBLER.

"Tolerably common in Northern Indiana" (Butler's Birds of Indiana); "exceedingly abundant migrant at Mackinac Island and in spring in Kent County" (S. E. White); E. E. Brewster writes me that it is common at Iron Mountain; "often common migrant in Monroe County" (Jerome Trombley); "common migrant in Michigan" (Dr. M. Gibbs); I have never taken this bird about the college.



Canadian Flycatching Warbler, natural size.

305-686 (149). *Sylvania canadensis* (Linn.). * CANADIAN WARBLER; CANADIAN FLYCATCHING WARBLER.

Not rare; migrant; April and May and August and September; "rather common in Kalamazoo County" (Dr. M. Gibbs); Lenawee County" (A. H. Boies); common migrant in Monroe County" (Jerome Trombley); "Iron Mountain" (E. E. Brewster); "Keweenaw Point" (Kneeland); "common summer resident at Mackinac Island" (S. E. White); probably breeds in Northern Peninsula; nests in June on the ground; eggs four or five.

GENUS SETOPHAGA SWAINS.

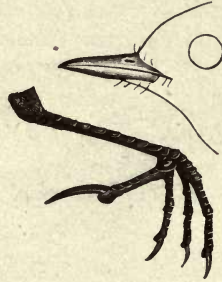
306-687 (152). *Setophaga ruticilla* (Linn.). * AMERICAN REDSTART.

Very common; throughout the entire State; May to August; "Mackinac Island" (S. E. White); "rare at Iron Mountain" (E. E. Brewster); breeds; nests in June in small trees, usually twelve to twenty feet from the ground, rarely forty feet; "nests at Manchester, neatly woven in vertical crotch of shrubs about twelve feet high" (L. W. Watkins); nests usually found in thick woods or dense swamps; "breeds abundantly at Ann Arbor" (Dr. J. B. Steere). Dr. Atkins gives dates of its arrival for 26 years in O. and O., Vol. VIII, p. 31.

FAMILY MOTACILLIDÆ. WAGTAILS AND PIPITS.

Small birds; insectivorous; often in flocks.

GENUS ANTHUS BECHST.



Titlark, natural size.

307-697-(89). *Anthus pensilvanicus* (Lath.). * AMERICAN PIPIT; AMERICAN TIT-LARK; WAG-TAIL; BROWN LARK; PIPIT.

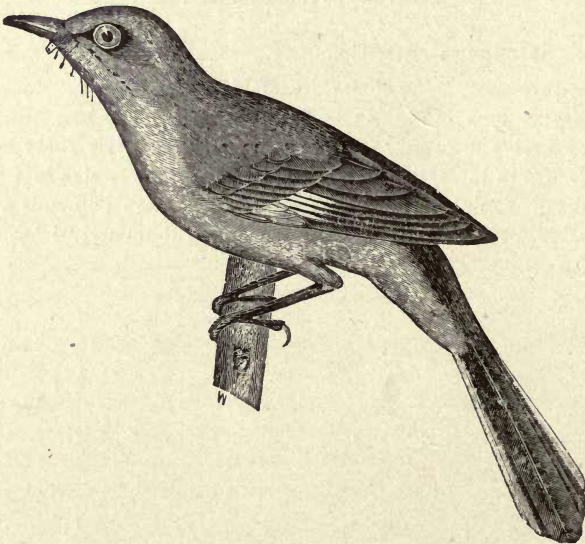
Common; throughout the state; in flocks; April and May, and Sept. to Nov., occasional in Dec. and Jan.; migrant; "common at Iron Mountain in autumn and probably in spring" (E. E. Brewster); "Keweenaw Point" (Kneeland); "winter sojourner" (A. H. Boies). Taken here by L. W. Watkins, May 10, 1893.

FAMILY TROGLODYTIDÆ. WRENS; THRASHERS, ETC.

Insectivorous birds; often sweet singers.

SUBFAMILY MIMINÆ. - THRASHERS.

GENUS MIMUS BOIES.



Mocking Bird, about two-thirds natural size.

308-703-(15). *Mimus polyglottos* (Linn.). *MOCKING BIRD.

Possibly a rare accidental straggler from the south. One reported by E. L. Moseley. This species is included in the manuscript list of the Birds about Detroit, by the late Rev. Chs. Fox.

GENUS GALEOSOPTES CAB.

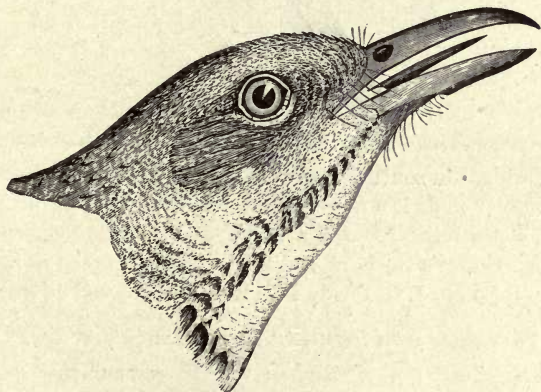


Cat-bird, natural size.

309-704-(16). *Galeoscoptes carolinensis* (Linn.). *CAT-BIRD.

Very common; throughout the state; usually in woodlands, though here at the college where we protect the birds, they even breed freely on the campus; April and May to Sept.; "Mackinac Island" (S. E. White); "rare at Iron Mountain" (E. E. Brewster); breeds; nests in shrubs; eggs four, rarely five, deep green; song pleasing and varied.

GENUS HARPORHYNCHUS CAB.



Brown Thrush, natural size.

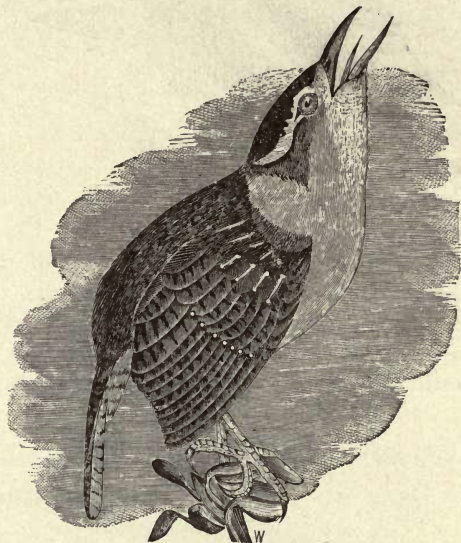
310-705-(17). *Harporhynchus rufus* (Linn.). *BROWN THRUSH; BIG BROWN WREN; BROWN THRASHER; BROWN MOCKING BIRD.

Very common, especially south; April to Sept.; "Grand Traverse County" (M. L. Leach); "April 28, 1891, at Grand Rapids" (E. B. Boies); "Mackinac Island" (S. E. White); "not seen in Upper Peninsula" (A. H. Boies); "very common at Iron Mountain, where with many other song birds they suffer seriously at the hands of the Italians, who kill them for stews" (E. E. Brewster); not shy; strong singers; "song wonderfully rich, melodious and varied" (L. S. Foster); breeds; nests in bushes, occa-

sionally on the ground; nest rude, coarse and bulky; eggs three to five, dirty white, specked with brown; food small fruits and insects; "Forbes found 23 per cent of food which he examined to be canker worms" (report State Horticultural Society, 1891, p. 204); like the Robin, this bird often returns to the same place year after year.

SUBFAMILY TROGLODYTINÆ. WRENS.

GENUS THRYOTHORUS VIEILL.



Carolina Wren.

311-718-(68). *Thryothorus ludovicianus* (Lach.). CAROLINA WREN.

Rare summer resident in southern part of the State; "Lenawee County" (A. H. Boies); Jerome Trombley finds it a rare summer resident in Monroe County, where he took a nest in 1892, beneath the roots of a fallen tree, with six eggs in it; "northern counties of Indiana" (Butler's Birds of Indiana). Said to breed at nearly all seasons. We have never seen it here. J. B. Purdy says it does not breed at Plymouth.

312-719-(71). *Thryothorus bewickii* (Aud.). BEWICK'S WREN.

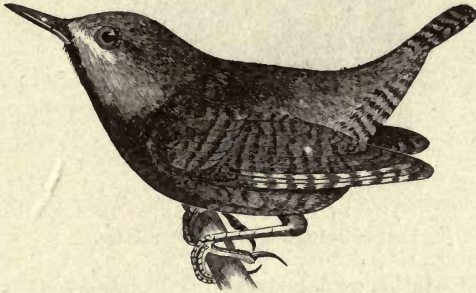
"Very rare, in spring" (Dr. M. Gibbs); very rare; "summer resident in Monroe County, where it has nested three years in a bird box, identification certain" (Jerome Trombley); "rare, but several taken in Kalamazoo County" (Dr. M. Gibbs); we have never taken this here, and J. B. Purdy says the same of Plymouth.

GENUS TROGLODYTES VIEILL.

313-721-(74). *Troglodytes ædon* (Vieill.). HOUSE WREN.

Very common in some localities; April to October; "abundant at Grand Rapids" (E. B. Boies); "becoming rare at Plymouth" (J. B. Purdy); "not rare at Ann Arbor" (Dr. J. B. Steere); "not seen in Upper Peninsula" (A. H. Boies); "Mackinac Island" (S. E. White); "common at Iron Mountain" (E. E. Brewster); breeds; nests in holes in

trees, stumps, in niches under porches, boxes, etc., in June, occasionally second time in August; eggs four to ten, white, thickly specked with reddish brown. This bird is very rare at Lansing, especially since the advent of the English Sparrow, but "very common at Traverse City" (L. W. Watkins; "this bird leaves the vicinity of our dwellings after breeding" (L. S. Foster). This little Wren nested in my whirling horse-tether box, and repaired its nest time after time, as it would be destroyed by the turning of the box—there were six eggs.



Winter Wren. slightly reduced.

314-722-(76). Troglodytes hiemalis Vieill. * WINTER WREN.

Common migrant; "transient in Monroe County, seen oftener in spring than in fall" (Jerome Trombley); "migrant at Plymouth" (J. B. Purdy); "very common in spring, summer and fall, and occasionally in late winter, breeds" (Dr. M. Gibbs); reported by S. E. White at Grand Rapids, June 11, 1891; "rare at Ann Arbor" (Dr. J. B. Steere); it is very rare at Lansing; "Kent County, where it breeds, and Mackinac Island" (S. E. White); "Keweenaw Point" (Kneeland); rather shy; "breeds in Upper Peninsula" (Prof. Ludwig Kumlein); E. W. Durfee took a nest near Grand Rapids; "nesting habits much as in last species" (Davie's Nests and Eggs on North American Birds, p. 407); though it may nest in brush-piles, etc.; nest lined with feathers; eggs four to nine, white, minutely specked with brown; feeds on insects and insects' eggs; "song loud and hearty, scolds vigorously at intrusion" (E. L. Moseley).

GENUS CISTOTHORUS CAB.



Short-billed Marsh Wren, natural size.

315-724-(81). Cistothorus stellaris (Licht.). * SHORT-BILLED MARSH WREN.

Rather common; summer; "rare at Ann Arbor" (Dr. J. B. Steere); "Lenawee County" (A. H. Boies); "common in marshes at the west end of Lake Erie"

(Jerome Trombley); breeds; nests in July; nesting habits as in next species, except that it nests in clear places and in moist meadows, not over water (R. H. Wolcott); and the nest is formed of fresh reeds and flags and beautifully lined with cotton like down; E. W. Durfee finds nests not uncommon in Wayne County; eggs six to nine, white. Mr. E. W. Durfee states that these, like the next species, make two or three duplicate nests.



Long-billed Marsh Wren, natural size.

316-725-(79, 80). *Cistothorus palustris* (Wils.). *LONG-BILLED MARSH WREN.

Rather common in summer; "rare at Ann Arbor" (Dr. J. B. Steere); "St. Joseph County" (A. H. Boies); "abundant in the marshes at the west end of Lake Erie" (Jerome Trombley); "nests found in Wayne County" (E. F. Durfee); breeds; nests in colonies, near the ground, in marshes, in spherical nests of coarse grass, etc., "fastened to old flags two or three feet above the water or mud" (E. L. Moseley), the opening on the side; eggs five to ten, very small, dark chocolate brown, rarely almost white; "while the female is sitting the male partially builds one or more nests" (Dr. A. K. Fisher); Dr. W. C. Brownell writes me that there are sometimes eight of these duplicate and unlined nests.

FAMILY CERTHIIDÆ. CREEPERS.

Small, narrow-billed birds; seen creeping up tree trunk; food insects and insects' eggs.

GENUS CERTHIA LINN.



Head, foot and tail-feather of Certhia, natural size.

**317-726-(62 part). *Certhia familiaris americana* (Bonap.). *BROWN CREEPER;
AMERICAN CREEPER.**

Rather common; throughout the entire state; all seasons; "does not breed at Plymouth" (J. B. Purdy); "rather rare at Ann Arbor" (Dr. J. B. Steere); "formerly nested

in Monroe County, now only a migrant, found a nest behind loose bark of a tree in 1865" (Jerome Trombley); "rather common in Kent County in summer and at Mackinac Island" (S. E. White); "common at Iron Mountain" (E. E. Brewster); "common in November at Au Sable" (N. A. Eddy, O. and O., Vol. IX, p. 91); breeds; nests, between loosened bark and tree" (Dr. A. K. Fisher); "under bark of stub thirty feet high in Ottawa County" (Dr. M. Gibbs); see Davie's Nests and Eggs of North American Birds, p. 410; in May; eggs five to eight, white, specked with brown. This bird climbs spirally up tree trunks.

FAMILY PARIDÆ. NUTHATCHES AND TITS.

Food insects and insects' eggs; they creep up tree trunks and along limbs much as do the Sapsuckers and Creepers, except they usually go downwards head foremost as they hunt for their food. They are exceedingly valuable birds.

SUBFAMILY SITTINÆ. NUTHATCHES.

GENUS SITTA LINN.

318-727-(57). *Sitta carolinensis* Lath. *WHITE-BREASTED NUTHATCH; TOMTIT; WHITE-BELLIED NUTHATCH.

Common; throughout the entire state; every month of the year; "common at Ann Arbor" (Dr. J. B. Steere); "Au Sable" (N. A. Eddy); "never seen at Iron Mountain, Upper Peninsula" (E. E. Brewster); "Mackinac Island" (S. E. White); breeds; nests in April; nests usually made in ready formed holes in trees from ten to fifty feet from the ground; eggs four to eight, rarely nine or ten, white to roseate, specked with brown; this bird is often seen creeping down trees head foremost; will place acorns containing weevil grubs in some cavity in bark to hold them secure and then pick out the delicate tit-bit.



Red-bellied Nuthatch, natural size.

319-728-(59). *Sitta canadensis* Linn. *RED-BREASTED NUTHATCH; RED-BELLIED NUTHATCH; CANADA NUTHATCH.

Rather rare; more common north; "rare fall and spring migrant in Monroe County, none remaining to breed" (Jerome Trombley); "rare in Wayne County" (B. H. Swales); "common during migration" (E. L. Moseley); "rarely seen at Ann Arbor" (Dr. J. B. Steere); "does not breed at Plymouth" (J. B. Purdy); "very common at Iron Mountain in the Upper Peninsula" (E. E. Brewster); "Keweenaw Point" (Kneeland); "abundant at Mackinac Island, and occurs in winter in vast flocks, in Upper Peninsula, in Iron County" (S. E. White); "breeds" (Dr. M. Gibbs); nests and eggs as in the preceding species except that the eggs are slightly smaller; we find this more rare here than the preceding species.

SUBFAMILY PARINÆ. TITMICE.

GENUS PARUS LINN.



Tufted Titmouse, natural size.

320-731-(40). *Parus bicolor* (Linn.). *TUFTED TITMOUSE; SUGAR BIRD; BLACK-FRONTED TITMOUSE.

Common in more southern parts of the state; winter; occasional in April and May and Sept.; "is regular winter resident at Ann Arbor" (Dr. J. B. Steere); "common in Lenawee and Hillsdale Counties" (A. H. Boies); "every year in Monroe County often until late May" (Jerome Trombley); "Benjamin Syke found this abundantly in Van Buren County one year" (Dr. M. Gibbs); "only taken once at Plymouth" (J. B. Purdy); "rarely found north of 40 degrees" (H. Nehrling); "summer resident in northern counties of Indiana" (Butler); Dr. Atkins reports taking this in April and May at Locke; we have taken it at this place; two specimens taken by Stewart E. White in Kent County in June, 1891; these valuable birds eat a great many leaf rollers and other insects during the winter season; J. E. Nichols, of Lansing, has this bird in his collection taken in Sept., 1881; he has often taken it about Lansing in fall and spring.



Black-capped Chickadee. reduced.

321-735-(44). *Parus atricapillus* Linn. *CHICKADEE; BLACK-CAPPED CHICKADEE.

Very common; throughout the entire state; every month of the year; "very common at Ann Arbor" (Dr. J. B. Steere); "resident in Monroe County, but much more common in winter" (Jerome Trombley); "Grand Traverse County" (M. L. Leach); "Mackinac Island" (S. E. White); "Keweenaw Point" (Kneeland); "very common at Iron Mountain" (E. E. Brewster) common at Bay City in the spring, 1884 (N. A. Eddy in O. and O., Vol. IX, p. 41); breeds; nests in a hole in a tree or stump; "breeds year after year in same nest, where they may roost in winter" (Dr. W. C. Brownell); "breeds at Traverse City" (L. W. Watkins); "have found full sets of eggs in April" (Dr. W. C. Brownell); eggs five or six, eight taken by Gilbert White in Kent County, May, 1892, ten young found in nest by F. M. Falconer, white specked with brown; "this bird is very familiar, may alight on a person" (E. L. Moseley, Forest and Stream, Sept., 1886); Dr. Atkins reported seeing them eat tent caterpillars extensively.

322-740-(49). *Parus hudsonicus* Forst. HUDSONIAN CHICKADEE.

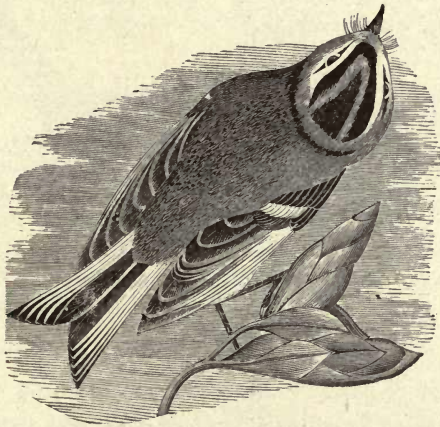
Rare; "Northern Michigan" (Dr. A. K. Fisher); "a rare winter resident of Northern Michigan" (H. Nehrling); "Keweenaw Point" (Kneeland); in Cabot's list of Birds of Upper Peninsula.

FAMILY SYLVIIDÆ. WARBLERS; KINGLETS; GNATCATCHERS.

Small, beautiful, insectivorous birds; feed largely on insects and insects' eggs.

SUBFAMILY REGULINÆ. KINGLETS.

GENUS REGULUS CUV.



Golden-crowned Kinglet.

323-748-(34). *Regulus satrapa* Licht. *GOLDEN-CROWNED KINGLET; GOLDEN-CROWNED WREN; GOLDEN-CRESTED KINGLET.

Common; migrant; Mar. to May and Oct. and Nov.; occasionally a winter resident; "more common at Ann Arbor than the next species" (Dr. J. B. Steere); "more timid

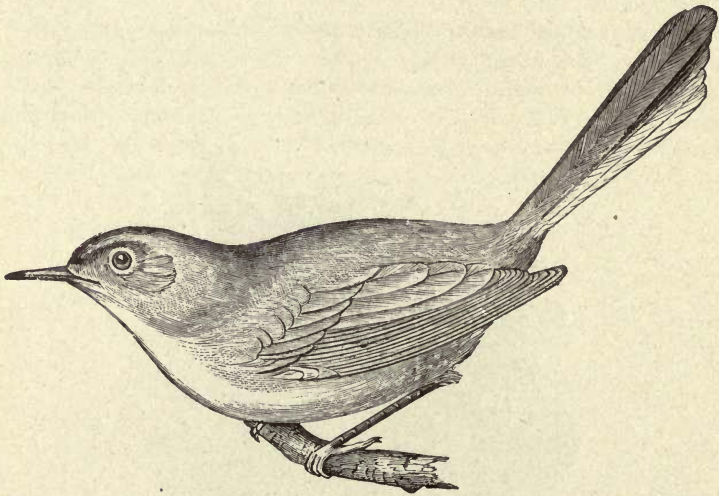
and retiring than the next species and comes and goes in flocks; probably does not breed in Southern Michigan" (A. H. Boies); "saw them at Plymouth, but they do not breed here" (J. B. Purdy); "Grand Rapids, April 14, 1891" (E. B. Boies); "common in winter in Wayne County" (B. H. Swales); "abundant migrant in Kent County" (S. E. White); found in woods; "common at Iron Mountain" (E. E. Brewster); included in Cabot's Birds of Lake Superior; found breeding at Ontonagon by Prof. Ludwig Kumlein; "breeds abundantly at Mackinac Island in July" (S. E. White); "eggs four to nine occasionally ten" (Prof. A. W. Butler); "nine" (E. E. Brewster); cream color, or creamy white, speckled with brown.

324-749-(33). *Regulus calendula* (Linn.). *RUBY-CROWNED KINGLET.

Rather common; throughout the state; migrant; April and May, and Oct. and Nov.; "rare at Ann Arbor" (Dr. J. B. Steere); "Dewitt" (Dr. G. W. Topping); "common at Iron Mountain" (E. E. Brewster); breeds in the Northern Peninsula; "nests with five young at Mackinac Island, July 26, 1890" (S. E. White); "breeds at L'Anse" (Prof. Ludwig Kumlein); "nests semipensile in trees" (Coues' North American Birds); "eggs five to nine, dull whitish, or pale buff, faintly spotted with light brown, chiefly at the larger end" (Davie); "often found in flocks with the preceding species" (Prof. J. W. Simmons); this and the preceding species are two of our most elegant birds. This species is not shy.

SUBFAMILY POLIOPTILINÆ. GNATCATCHERS.

GENUS POLIOPTILA SCLAT.



Blue-gray Gnatcatcher, natural size.

325-751-(36). *Polioptila caerulea* (Linn.). *BLUE-GRAY GNATCATCHER.

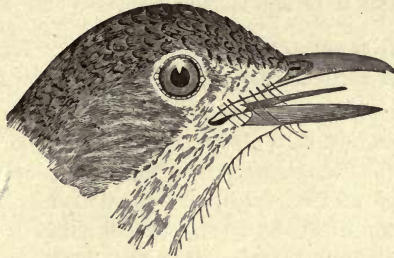
Very common; throughout Southern Michigan; April to Sept.; "very common at Ann Arbor" (Dr. J. B. Steere); we find it common at this place; S. E. White reports it rare at Mackinac Island and says it is found in the Northern Peninsula; breeds; nests in trees in May; nest elegant, softly lined and covered outside with lichens; often secures material for nest from nests of other birds; eggs four to seven, white, speckled with brown; habits much like those of Creepers and Nuthatches.

FAMILY TURDIDÆ. THRUSHES; BLUE BIRDS, ETC.

Food principally insects, often fruit; usually sweet singers.

SUBFAMILY TURDINÆ. THRUSHES.

GENUS TURDUS LINN.



Wood Thrush, natural size.

326-755-(6). *Turdus mustelinus* (Gmel.). * WOOD THRUSH; SONG THRUSH.

Not rare; throughout the state; April and May to October; numbers decreasing as the thickets are cleared up; "occurs at Mackinac Inland" (S. E. White); "Keweenaw Point" (Kneeland); breeds at least in Southern Peninsula; nests in May and June in trees or shrubs, "in orchards" (Dr. A. K. Fisher); I have found the nests more commonly in damp, thick woods, and generally on low beech limbs; "nests at Traverse City" (L. W. Watkins); eggs like those of the Robin, except a trifle smaller, two to five; "this bird is shy during molt" (Dr. A. K. Fisher); and is usually seen in dense woodlands and thickets; the food habits of the Wood Thrush are much the same as those of the Robin.

327-756-(7). *Turdus fuscescens* Steph. * WILSON'S THRUSH; VEERY; TAWNY THRUSH.

Common at least in southern part of the state; throughout the Lower Peninsula; April to Sept.; usually in swampy woods; "Keweenaw Point" (Kneeland); "occurs at Mackinac Island" (S. E. White); Mr. White informs me that it breeds in Kent County; breeds; "have seen them very abundant in Wayne County where they breed abundantly" (Dr. W. C. Brownell); nests on ground, occasionally in low shrubs or clumps of bushes, in May or June; eggs blue, four, occasionally five.

328-757-(12). *Turdus alicia* Baird. * GRAY-CHEEKED THRUSH.

One reported from Michigan in the museum of the Kent Scientific Institute by E. L. Mosely; taken in Kent County by S. E. White; "one taken at Locke, May 10, 1883" (Dr. H. A. Atkins); "this bird is recorded from Kalamazoo County by F. H. Chapin and from Kent County by Mr. Chas. W. Gunn" (Dr. M. Gibbs).

329-758a-(13). *Turdus ustulatus swainsonii* (Cab.). * OLIVE-BACKED THRUSH; SWAINSON'S THRUSH; SWAMP ROBIN.

Common; throughout the Southern Peninsula if not the entire state; May to Oct.; E. B. Boies reports a large flock at Grand Rapids April 17 and 18, 1891; (Was not this the

Hermit Thrush?) "rare in Wayne County" (B. H. Swales); "Lenawee County" (A. H. Boies); "rare and transient in Monroe County" (Jerome Trombley); "occurs at Mackinac Island" (S. E. White); "Keweenaw Point" (Kneeland); breeds north; we have never found it nesting here; J. B. Purdy of Plymouth, has never seen or found a nest at that place; Dr. M. Gibbs reports taking nests and eggs in Kalamazoo County; (Is not this a mistake?) nests in low shrubs in June; nest compact with no mud; eggs four, bluish green, and peculiar in being specked with varying shades of brown; this bird is a sweet and almost continuous singer. Dr. M. Gibbs gives an excellent description of this bird and its nesting and migration in O. and O., Vol. X, 1885, p. 26.

330-759b-(10). *Turdus aonalaschkæ pallasii* (Cab.). *HERMIT THRUSH; CATHEDRAL BIRD; RUFUS-TAILED THRUSH; GROUND SWAMP ROBIN; SWAMP ANGEL.

April and May to Oct.; "Monroe County, common, transient" (Jerome Trombley); "occurs at Mackinac Island" (S. E. White); "Upper Peninsula" (H. Nehrling); "common at Iron Mountain" (E. E. Brewster); breeds north; nests taken in Montcalm County, by Dr. Gibbs, June 23, 1882; also "in Ottawa County, May 15, 1879, by W. A. Gunn" (Dr. M. Gibbs); nests in June, usually on the ground, "in July at Mackinac Island" (S. E. White), rarely in low shrubs; the nest loosely constructed and without mud; eggs three or four, light blue, immaculate. For interesting account of the habits of this bird, see article by Dr. M. Gibbs in O. and O., Vol. X, p. 27.

GENUS MERULA LEACH.



Robin, natural size.

331-761-(1). *Merula migratoria* (Linn.). *AMERICAN ROBIN; ROBIN.

Very common; throughout the entire state; "very common at Iron Mountain" (E. E. Brewster); March to October; rarely throughout the winter; "Grand Rapids Feb. 28, 1892" (E. B. Boies); retires in winter to protected localities and so is not so often seen; "Traverse City" (Dr. M. L. Leach); "occurs at Mackinac Island" (S. E. White); "Keweenaw Point" (Kneeland); occasionally albinos; I knew an albino female, presumably the same bird, to nest two successive summers in the same nest; breeds; often two brooded; "always double brooded if undisturbed" (Dr. M. Gibbs); nests on fences, in trees, on ledges under eaves, in old nests, rarely of other birds, "in buildings" (O. and O., Vol. XIV, 1889, p. 43) etc.; eggs three to five, greenish blue, "rarely sprinkled with brown" (A. W. Butler); eats myriads of insects, mostly noxious species, angle worms and fruit, cherries, berries and grapes; 40 per cent of the food of birds examined by Prof. Forbes (report Michigan Horticultural Society, 1881, p. 204) was found to be canker worms.

GENUS SIALIA SWAINS.



Blue Bird, natural size.

332-766-(27). *Sialia sialis* (Linn.). *BLUE BIRD.

Common; throughout the entire state; less common than formerly; driven away by English Sparrows; Feb. or March to Nov.; "one of our earliest birds to arrive in the spring, Grand Rapids Feb. 26, 1891" (E. B. Boies); "Grand Traverse County" (M. L. Leach); "occurs at Mackinac Island" (S. E. White); "Keweenaw Point" (Kneeland); "very common at Iron Mountain" (E. E. Brewster); breeds; "double or triple brooded" (Prof. J. W. Simmons); nests in hollow trees, "either in holes which they excavate in rotten trees, or which other birds have excavated" (J. E. Nichols), in boxes, etc.; eggs four to six, light blue, rarely pure white; a very beautiful and valuable bird.



INDEX.

	Page.		Page.
Acadian Flycatcher.....	83	American Hawk Owl.....	71
Acadian Owl.....	69	American Herring Gull.....	28
Acanthis.....	93	American Long-eared Owl.....	68
hornemanii exilipes.....	5	American Magpie.....	85
linaria.....	93	American Night Heron.....	44
linaria rostrata.....	94	American Osprey.....	66
Accipiter.....	62	American Pipit.....	120
atricapillus.....	63	American Pochard Duck.....	35
cooperi.....	62	American Redstart.....	119
velox.....	62	American Robin.....	130
Accipitrinae.....	61	American Rough-legged Hawk.....	64
Actitis.....	53	American Scaup Duck.....	36
macularia.....	53	American Scoter.....	38
Æchmophorus.....	24	American Snipe.....	49
occidentalis.....	24	American Sparrow Hawk.....	66
Ægialitis.....	55	American Swan.....	40
meloda.....	55	American Three-toed Woodpecker.....	75
meloda circumcincta.....	56	American Titlark.....	120
semipalmata.....	55	American White-fronted Goose.....	39
vocifera.....	55	American White Pelican.....	31
Agelaius.....	88	American Widgeon.....	33
phoeniceus.....	88	American Woodcock.....	48
Aix.....	35	Ammodramus.....	96
sponsa.....	35	caudacutus nelsoni.....	97
Alaudidæ.....	84	henslowii.....	97
Alca.....	26	lecontei.....	5, 97
torda.....	26	sandwichensis savanna.....	96
Alcedinidæ.....	73	savannarum passerinus.....	97
Alcidæ.....	26	Ampelidæ.....	105
Alcyones.....	73	Ampelinae.....	105
American Avocet.....	48	Ampelis.....	105
American Barn Owl.....	67	cedrorum.....	106
American Bittern.....	41	garrulus.....	105
American Black Scoter.....	38	Alcidæ.....	26
American Coot.....	46	Alle.....	27
American Creeper.....	124	An act for the Protection of Birds.....	6
American Crossbill.....	93	Anas.....	32
American Dunlin.....	50	americana.....	33
American Eider Duck.....	38	boschas.....	32
American Golden-eye.....	36	carolinensis.....	33
American Golden Plover.....	55	discors.....	33
American Goldfinch.....	94	obscura.....	33
American Goshawk.....	63	strepera.....	33
American Green Sandpiper.....	52	Anatidæ.....	31

	Page.		Page.
Anatinae.....	32	Bewick's Wren.....	122
Ancient Murrelet.....	26	Bibliography.....	12
Anhinga Anhinga.....	5	Bird, Blue.....	131
Anser.....	39	Butcher.....	107
albifrons gambeli.....	39	Cat.....	121
Anseres.....	31	Cedar.....	106
Anserinae.....	38	Cherry.....	106
Anthus.....	120	Fire.....	89
pensilvanicus.....	120	Indigo.....	101
Antrostomus.....	77	Lettuce.....	94
vociferus.....	78	Snow.....	94, 99
Aphrizaide.....	56	Summer Red.....	102
Aquila.....	65	Thistle.....	94
chrysaetos.....	65	Yellow.....	94
Archibuteo.....	64	Birds, an act for the protection of.....	6
lagopus sancti-johannis.....	64	Birds of prey.....	60
Arctic Tern.....	29	Bittern.....	41
Arctic Three-toed Woodpecker.....	75	American.....	41
Ardea.....	42	Least.....	42
candidissima.....	48	Bitterns.....	41
cerulea.....	5	Black and White Creeper.....	110
egretta.....	43	Black and White Warbler.....	110
herodias.....	43	Black and Yellow Warbler.....	113
tricolor ruficollis.....	43	Black-backed Three-towed Woodpecker.....	75
virescens.....	48	Black-bellied Plover.....	54
Ardeide.....	41	Black-bellied Sandpiper.....	50
Ardeine.....	42	Black-billed Cuckoo.....	73
Arenaria.....	56	Blackbird.....	87
interpre.....	56	Bronzed Crow.....	90
Arenariinae.....	56	Common.....	90
Asio.....	67	Crow.....	90
accipitrinus.....	68	Red-shouldered.....	88
wilsonianus.....	68	Red-winged.....	88
Anks.....	25-26	Rusty.....	90
Authorities, list of.....	4	Skunk.....	87
Avocet.....	48	Swamp.....	88
American.....	48	Yellow-headed.....	88
Avocets.....	48	Blackbirds.....	87
Aythya.....	35	Blackburnian Warbler.....	114
affinis.....	36	Black-capped Chickadee.....	127
americana.....	35	Black Guillemot.....	26
collaris.....	36	Black-headed Gull.....	28
marila nearctica.....	36	Black Jack.....	38
vallisneria.....	36	Black-necked Stilt.....	48
Baird's Sandpiper.....	50	Blackpoll Warbler.....	114
Bald Eagle.....	65	Black-shouldered Kite.....	61
Baldpate.....	33	Black Tern.....	30
Baltimore Oriole.....	89	Black-throated Blue Warbler.....	112
Banded-backed Three-toed Woodpecker.....	75	Black-throated Bunting.....	101
Bank Swallow.....	104	Black-throated Diver.....	26
Barn Owl.....	67	Black-throated Green Warbler.....	115
Barn Swallow.....	103	Black-throated Loon.....	26
Barred Owl.....	68	Black-throated Murrelet.....	26
Barrel Maker.....	41	Black-winged Redbird.....	102
Barrow's Golden Eye.....	37	Black Woodpecker.....	76
Bartramia.....	52	Blue-backed Swallow.....	104
longicauda.....	52	Bluebird.....	131
Bartramian Sandpiper.....	52	Blue Golden-winged Warbler.....	111
Bartramian Tattler.....	52	Blue Goose.....	39
Bay-brested Warbler.....	114	Blue-gray Gnatcatcher.....	128
Bay-winged Bunting.....	95	Blue-headed Greenlet.....	109
Bee Martin.....	81	Blue-headed Vireo.....	109
Belted Kingfisher.....	74	Blue Jay.....	85
Belted Piping Plover.....	56	Blue Linnet.....	101
		Blue Warbler.....	113

	Page.		Page.
Blue-winged Teal	33	Calcarius, pictus	95
Blue-winged Warbler	111	Calidris	51
Blue-winged Yellow Warbler	111	arenaria	51
Blue Yellow-backed Warbler	112	Camptolaimus	5
Bob Lincoln	87	jabradorius	5
Bobolink	87	Canada Goose	40
Bob White	57	canadica Grouse	57
Bohemian Waxwing	105	Canada Jay	86
Bonaparte's Gull	28	Canada Nuthatch	125
Bonaparte's Sandpiper	50	Canadian Flycatching Warbler	119
Bonasa	58	Canadian Warbler	119
umbellus	58	Canvas-back Duck	86
Books	10	Cape May Warbler	112
Botaurinæ	41	Caprimulgi	77
Botaurus	41	Caprimulgidæ	77
exilis	42	Cardinal	100
lentiginosus	41	Cardinal Grosbeak	100
Brant	40	Cardinalis	100
Branta	39	cardinalis	100
bernicla	40	Carolina Grebe	25
canadensis	40	Carolina Paroquet	72
canadensis hutchinsii	40	Carolina Wren	122
canadensis minima	40	Carpodacus	92
canadensis occidentalis	40	purpureus	92
Bridge Bird	82	Caspean Tern	29
Broad-winged Hawk	64	Cat Bird	121
Bronzed Crow Blackbird	90	Cathartes	60
Bronzed Grackle	90	aura	60
Brotherly-love Greenlet	108	Cathartidæ	60
Brotherly-love Vireo	108	Cathedral Bird	130
Brown Creeper	124	Cayenne Tern	29
Brown Lark	120	Cedarbird	106
Brown Thrasher	121	Ceophlæus	76
Brown Thrush	121	pileatus	76
Bubo	70	Cepphus	26
virginianus	70	grylle	26
virginianus subarcticus	71	Certhia	124
Bubonidæ	67	familiaris americana	124
Buff-breasted Sandpiper	53	Certhiidæ	124
Buffle-head	37	Cerulean Warbler	113
Bull Bat	78	Ceryle	73
Bunting	88, 95	alcyon	74
Bay-winged	95	Chætura	79
Black-throated	101	pelagica	79
Cow	88	Chæturingæ	79
Henslow's	97	Charadriidæ	54
Indigo	101	Charadrius	54
Snow	94	dominicus	55
Towhee	100	squatarola	54
Varied	101	Charitonetta	37
Butcher Bird	107	albeola	37
Buteo	63	Chat	118
borealis	63	Yellow-breasted	118
latissimus	64	Chelidon	103
lineatus	64	erythrogaster	103
swainsoni	64	Chen	38
Butter-ball	37	cærulescens	39
Butter-bird	87	hyperborea	38
Buzzard	60, 83	hyperborea, nivalis	39
Red-shouldered	64	Cherry Bird	106
Red-tailed	63	Chestnut-sided Warbler	113
Turkey	60	Chewink	100
Cackling Goose	40	Chickadee	127
Calcarius	95	Black-capped	127
lapponicus	95	Hudsonian	127
		Chicken Hawk	62

	Page.		Page.
Chimney Swallow.....	79	Crane, Whooping.....	44
Chimney Swift.....	79	Cranes.....	44
Chippie.....	98	Creepers.....	110
Chipping Sparrow.....	98	American.....	124
Chondestes.....	97	Black and White.....	110
grammacus.....	97	Brown.....	124
Chordeiles.....	78	Creepers.....	124
virginianus.....	78	Crested Flycatcher.....	82
Circus.....	62	Cricket Sparrow.....	97
hudsonius.....	62	Crossbill.....	93
Cistothorus.....	123	American.....	93
palustris.....	124	Red.....	93
stellaris.....	123	White-winged.....	93
Clamatores.....	81	Crow.....	86
Clangula.....	37	American.....	86
hyemalis.....	37	Crow Blackbird.....	90
Clay-colored sparrow.....	98	Crows.....	86
Cliff Swallow.....	103	Common.....	86
Clivicola.....	104	Crymophilus.....	47
riparia.....	104	fulicarius.....	47
Coccothraustes.....	90	Cuckoo.....	72
vespertina.....	91	Black-billed.....	73
Coccyges.....	72	Yellow-billed.....	73
Coccyginæ.....	72	Cuckoos.....	72
Coccyzus.....	72	American.....	72
americanus.....	73	Cuculi.....	72
erythrophthalmus.....	73	Cuculidæ.....	72
Colaptes.....	77	Curlew.....	53
auratus.....	77	Eskimo.....	54
Colinus.....	56	Hudsonian.....	53
virginianus.....	57	Jack.....	53
Columbæ.....	59	Long-billed.....	53
Columbidæ.....	59	Short-billed.....	53
Colymbus.....	24	Sickle-billed.....	53
auritus.....	24	Curlew Sandpiper.....	50
holbøllii.....	24	Cyanocitta.....	85
Compothlypis.....	112	cristata.....	85
americana.....	112	Cygninæ.....	40
Connecticut Warbler.....	117	Cypseli.....	79
Contopus.....	82	Dabchick.....	25
borealis.....	82	Dafila.....	34
virens.....	88	acuta.....	35
Conurus.....	72	Dauber.....	103
carolinensis.....	72	Mud.....	103
Cooper's Hawk.....	62	Dendragapus.....	57
Coot.....	46	canadensis.....	57
American.....	46	franklinii.....	5
Sea.....	38	Dendroica.....	112
Coots.....	45	æstiva.....	112
Cormorant.....	31	blackburniæ.....	114
Double-crested.....	31	cærulea.....	113
Cormorants.....	30	cærulescens.....	112
Corvidæ.....	85	caetanea.....	114
Corvinæ.....	86	coronata.....	113
Corvus.....	86	discolor.....	116
americanus.....	86	dominica.....	5
corax sinuatus.....	86	dominica albilora.....	114
Cow Bird.....	88	kirtlandi.....	115
Cow Bunting.....	88	maculosa.....	113
Crake.....	45	palmarum.....	116
Yellow.....	46	pennsylvanica.....	113
Crane.....	44	striata.....	114
Little Brown.....	44	tigrina.....	112
Sandhill.....	44	vigorosii.....	115
White.....	44	virens.....	115

	Page.		Page.
Dickcissel.....	101	Duck, Spirit.....	37
Didapper.....	25	Spoonbill.....	34
Dipper.....	25	Surf Scoter.....	38
Diver.....	25	Tree.....	35
Black-throated.....	26	Velvet Scoter.....	38
Great Northern.....	25	Whistler.....	35
Hell.....	25	White-winged Scoter.....	38
Red-throated.....	26	Widgeon.....	33
Diving Birds.....	24	Wood.....	35
Doe Bird.....	51	Duck Hawk.....	66
Lesser.....	51	Ducks.....	31
Dolichonyx.....	87	Dunlin.....	50
oryzivorus.....	87	American.....	50
Double-crested Cormorant.....	31	Eagle.....	65
Dough Bird.....	51	Bald.....	65
Dove.....	80	Golden.....	65
Carolina.....	60	Eave Swallow.....	103
Morning.....	60	Ectopistes.....	59
Dowitcher.....	49	migratorius.....	59
Long-billed.....	49	Egret.....	43
Downey Woodpecker.....	74	American.....	43
Dryobates.....	74	Little White.....	43
pubescens.....	74	Louisiana.....	43
villosus.....	74	Egrets.....	41
Duck.....	31	Eider.....	33
American Eider.....	38	American.....	33
American Golden-eye.....	36	King.....	33
American Scaup.....	36	Elanoidea.....	61
American Scoter.....	38	forcatus.....	61
American Widgeon.....	33	Elanus.....	61
Baldpate.....	33	leucurus.....	61
Barrow's Golden-eye.....	37	Empidonax.....	83
Black.....	33	academicus.....	83
Black Jack.....	33	flaviventris.....	83
Blue-winged Teal.....	33	minimus.....	83
Buffle-head.....	37	pusillus trailli.....	83
Butter-ball.....	37	English Sparrow.....	96
Canvas-back.....	36	Law for destruction of.....	8
Dusky.....	33	Ereunetes.....	50
Eider (American).....	33	pusillus.....	50
Eider (King).....	33	Erismanura.....	33
Fish.....	31	rubida.....	33
Gadwall.....	33	Eskimo Curlew.....	54
Garrot.....	36	European Sparrow.....	96
Golden-eye.....	36	Evening Grosbeak.....	91
Greater Blackhead.....	36	Falco.....	65
Greater Blue-bill.....	36	columbarius.....	66
Greater Scaup.....	36	peregrinus anatum.....	66
Green-head.....	32	rusticolus gyrfalco.....	65
Green-winged Teal.....	33	sparverius.....	66
Harlequin.....	33	Falcon.....	66
King Eider.....	33	Peregrine.....	66
Lesser Black-head.....	36	Falcones.....	61
Lesser Blue-billed.....	36	Falconidae.....	61
Lesser Scaup.....	36	Falconinae.....	65
Long-tailed.....	37	Falcons.....	61
Mallard.....	32	Field Plover.....	52
Old Squaw.....	37	Field Sparrow.....	98
Old Wife.....	37	Field Swallow.....	104
Pintail.....	35	Finch.....	92
Redhead.....	35	Grass.....	95
Ring-neck.....	36	Indigo Painted.....	101
Ruddy.....	38	Lark.....	97
Sea Coot.....	38	Nelson's Sharp-tailed.....	97
Shoveller.....	34		

	Page.		Page.
Finch, Pine.....	94	Gnatcatchers.....	128
Purple.....	92	Goat Sucker.....	78
Finches.....	90	Goat Suckers.....	77
Fire Bird.....	89	Godwit.....	51
Fish Duck.....	81	Great Marbled.....	51
Fish Hawk.....	66	Hudsonian.....	51
Flicker.....	77	Marble.....	51
Florida Gallinule.....	46	Golden Crowned Kinglet.....	127
Flycatcher.....	81	Golden-crowned Thrush.....	116
Acadian.....	83	Golden-crowned Warbler.....	113
Crested.....	82	Golden Eagle.....	65
Great Crested.....	82	Golden-eye.....	36
Least.....	83	American.....	36
Olive-sided.....	82	Barrow's.....	37
Pewit.....	82	Golden Swamp Warbler.....	110
Small Green-crested.....	83	Golden-winged Warbler.....	111
Traill's.....	83	Golden-winged Woodpecker.....	77
Tyrant.....	81	Goldfinch.....	94
Yellow-bellied.....	83	American.....	94
Flycatchers.....	81	Goose.....	38
Tyrant.....	81	American White-fronted.....	39
Fly up the Creek.....	43	Blue.....	39
Foster's Tern.....	29	Brant.....	40
Fox Sparrow.....	100	Cackling.....	40
Franklin's Gull.....	28	Canada.....	40
Fratercula.....	26	Common Wild.....	40
arctica.....	26	Greater Snow.....	39
Freshwater Marsh Hen.....	45	Hutchin's.....	40
Fringilladæ.....	90	Lesser Snow.....	38
Fulica.....	46	White-cheeked.....	40
americana.....	46	Goosander.....	31
Fulicinæ.....	45	Grackle.....	90
Gadwall.....	33	Bronzed.....	90
Galeoscoptes.....	121	Rusty.....	90
carolinensis.....	121	Grass Finch.....	95
Gallinaceous Birds.....	56	Grasshopper Sparrow.....	97
Gallinæ.....	56	Grass Snipe.....	50
Gallinago.....	49	Grayback.....	49
delicata.....	49	Gray-backed Snipe.....	49
Gallinula.....	46	Gray-cheeked Thrush.....	129
galeata.....	46	Gray Phalarope.....	47
Gallinule.....	46	Gray Snipe.....	49
Florida.....	46	Great Black-backed Gull.....	27
Gallinules.....	45-46	Great Blue Heron.....	43
Gallinulinæ.....	46	Great Crested Flycatcher.....	82
Game Warden.....	8	Great Gray Owl.....	68
law regarding.....	8	Great Horned Owl.....	70
Garrot.....	36	Great Northern Diver.....	25
Garruline.....	85	Great White Egret.....	43
Geese.....	31	Great White Heron.....	43
Gelochelidon.....	29	Greater Blue-bill duck.....	36
nilotica.....	29	Greater Redpoll.....	94
Geothlypis.....	117	Greater Scaup Duck.....	36
agilis.....	117	Greater Snow Goose.....	39
formosa.....	117	Greater Tattler.....	51
philadelphia.....	117	Greater Telltale.....	51
trichas.....	118	Greater Yellow-legs.....	51
Glaucionetta.....	36	Grebe.....	24
clangula americana.....	36	Carolina.....	25
islandica.....	37	Holbell's.....	24
Glaucus Gull.....	27	Horned.....	24
Glossy Ibis.....	41	Pie-billed.....	25
Gnatcatcher.....	128	Red-necked.....	24
Blue-gray.....	128	Western.....	24
		Grebes.....	24

	Page.		Page.
Greenback.....	55	Hawk, Cooper's	62
Green Black-capped Yellow Warbler.....	119	Duck	66
Green-head.....	32	Fish	66
Green Heron.....	43	Hen	63, 64
Greenlet.....	107	Marsh	62
Blue-headed.....	109	Mouse.....	62
Brotherly-love.....	108	Night.....	78
Red-eyed.....	108	Pigeon.....	66
Solitary.....	109	Red-shouldered.....	64
Warbling.....	108	Red-tailed.....	63
White-eyed.....	109	Rough-legged.....	64
Green-winged Teal.....	38	Sharp-shinned.....	62
Grosbeak.....	91	Sparrow.....	66
Cardinal.....	100	Swainson's.....	64
Evening.....	91	Hawks.....	61
Pine.....	91	Hell Divers.....	24, 25
Rose-breasted.....	101	Helmintherus.....	110
Ground Bird.....	95	vermivorus.....	111
Ground Robin.....	100	Helminthophila.....	111
Grouse.....	56	celata.....	111
Canada.....	57	chrysoptera.....	111
Pinnated.....	58	peregrina.....	111
Ruffed.....	58	pinus.....	111
Grus.....	44	ruficapilla.....	111
americanus.....	44	Hemlock Warbler.....	114
canadensis.....	44	Hen.....	45, 58
mexicana.....	44	Marsh.....	45
Grues.....	44	Prairie.....	58
Gruidae.....	44	Hen Hawk.....	63, 64
Gull.....	27	Henslow's Bunting.....	97
American Herring.....	28	Henslow's Sparrow.....	97
Black-headed.....	28	Herodii.....	41
Bonaparte's.....	28	Herodiones.....	41
Franklin's.....	28	Heron.....	43
Glaucus.....	27	American Night.....	44
Great Black-backed.....	27	Black-crowned Night.....	44
Herring.....	28	Great Blue.....	43
Iceland.....	27	Great White.....	43
Kittiwake.....	27	Green.....	43
Laughing.....	28	Louisiana.....	43
Ring-billed.....	28	Snowy.....	43
Sabine's.....	29	Hérons.....	41
Smithsonian.....	28	High Holder.....	77
White-winged.....	27	Himantopus.....	48
Gull-billed Tern.....	29	mexicanus.....	45
Gulls.....	27	Hirundinidæ.....	102
Gyrfalcon.....	65	Histrionicus.....	38
Habia.....	101	histrionicus.....	33
ludoviciana.....	101	Holboell's Grebe.....	24
Hæmatopus palliatus.....	5	Hooded Flycatching Warbler.....	118
Hair Bird.....	98	Hooded Warbler.....	118
Hairy Woodpecker.....	74	Hoot Owl.....	68, 70
Haliætus.....	65	Horned Grebe.....	24
leucocephalus.....	65	Horned Lark.....	84
Hang Nest.....	89	House Pewee.....	82
Harlequin Duck.....	38	House Wren.....	122
Harporhynchus.....	121	Hudsonian Chickadee.....	127
rufus.....	121	Hudsonian Curlew.....	53
Harrier.....	62	Hudsonian Godwit.....	51
Hawk.....	62	Humming Bird.....	80
American Goshawk.....	63	Ruby-throated.....	80
American Rough-legged.....	64	Humming Birds.....	79
American Sparrow.....	66	Hydrochelidon.....	30
Broad-winged.....	64	nigra surinamensis.....	30
Chicken.....	62	Ibididæ.....	41

	Page.		Page.
Ibis.....	41	Lamellirostral Swimmers.....	31
Glossy.....	41	Laniidæ.....	107
Ibises.....	41	Lanius.....	107
Ice Gull.....	27	borealis.....	107
Iceland Gull.....	27	ludovicianus.....	107
Icteria.....	118	ludovicianus excubitoroides.....	107
virens.....	118	Lapland Longspur.....	95
Icteridæ.....	87	Large-billed wag-tail warbler.....	117
Icterinus.....	89	Laridæ.....	27
galbula.....	89	Larinæ.....	27
spurius.....	89	Lark.....	81
Ictinia.....	61	Brown.....	420
mississippiensis.....	61	Horned.....	84
Indian Hen.....	41	Little Meadow.....	101
Indigo Bird.....	101	Meadow.....	89
Indigo Bunting.....	101	Prairie Horned.....	84
Indigo Painted Finch.....	101	Shore.....	84
Introduction.....	3	Western Meadow.....	89
Jacana.....	5	Lark Finch.....	97
spinosa.....	5	Lark Sparrow.....	97
Jack Curlew.....	53	Larks.....	84
Jack Snipe.....	49-50	Larus.....	27
Jæger.....	27	argentatus smithsonianus.....	28
Jægers.....	27	atricilla.....	28
Jay.....	85	delawarensis.....	28
Blue.....	85	franklinii.....	28
Canada.....	86	glaucus.....	27
Jays.....	85	leucopterus.....	27
Jerfalcon.....	65	marinus.....	27
Jewee.....	100	philadelphia.....	28
Joe-wink.....	100	Laughing Gull.....	28
Journals.....	10	Least Flycatcher.....	83
Junco.....	99	Least Sandpiper.....	50
hyemalis.....	99	Least Tern.....	30
hyemalis oregonus.....	99	Lesser Doe Bird.....	51
hyemalis shufeldti.....	99	Lesser Redpoll.....	93
Oregon.....	99	Lesser Scaup Duck.....	36
Slate-colored.....	99	Lesser Tattler.....	52
Kentucky Warbler.....	117	Limnicolæ.....	47
Kildeer.....	55	Limosa.....	51
Kildeer Plover.....	55	fedoa.....	51
King Bird.....	81	hæmastica.....	51
King Eider.....	38	Lincoln's Sparrow.....	99
Kingfisher.....	74	Linnet.....	94
Belted.....	74	Pine.....	94
Kingfishers.....	78	Redpoll.....	94
Kinglet.....	127	Literature of Birds.....	10
Golden-crowned.....	127	Little Brown Crane.....	44
Ruby-crowned.....	128	Little White Egret.....	43
Kinglets.....	127	Log Cock.....	76
King Rail.....	45	Long-billed Curlew.....	53
Kirtland's Warbler.....	115	Long-billed Dowitcher.....	49
Kite.....	61	Long-billed Marsh Wren.....	124
Black-shouldered.....	61	Long-eared Owl.....	68
Mississippi.....	61	Longipennes.....	27
Swallow-tailed.....	61	Longspur.....	95
White-tailed.....	61	Lapland.....	95
Kites.....	61	Painted.....	95
Kittiwake.....	27	Smith's.....	95
Knot.....	49	Long-tailed Duck.....	37
Lagopus.....	58	Long-winged Swimmers.....	27
lagopus.....	58	Loon.....	25
		Black-throated.....	26
		Red-throated.....	26
		Loons.....	25

	Page.		Page.
Lophodytes	32	Mniotilta	110
cucullatus	32	varia	110
Louisiana Egret	43	Mniotiltidae	109
Louisiana Heron	43	Mocking Bird	121
Louisiana Water Thrush	117	Brown	121
Loxia	92	Molothrus	87
curvirostra minor	93	ater	88
leucoptera	93	Motacillidae	120
Macaws	72	Mottled Owl	69
Macrochires	77	Mourning Dove	60
Macrohamphus	49	Mourning Warbler	117
scelopaceus	49	Mouse Hawk	62
Magnolia Warbler	113	Mud-dauber	103
Magpie	85	Mud Hen	46
American	85	Murre	26
Magpies	85	Myiarchus	82
Mallard	32	crinitus	82
Marbled Godwit	51	Myrtle Warbler	113
Marsh Hawk	62	Nashville Warbler	111
Marsh Hen	45	Nelson's Sharp-tailed Finch	97
Fresh Water	45	Nelson's Sparrow	97
Marsh Robin	100	Night Hawk	78
Marsh Tern	29	Night Heron	44
Martin	81, 102	Night Raven	44
Bee	81	Northern Phalarope	47
Purple	102	Northern Shrike	107
Sand	104	Numenius	53
Maryland Yellow-throat	118	borealis	54
Meadow Lark	89	hudsonicus	53
Little	101	longirostris	53
Meadow Starling	89	Nuthatch	125
Megascops	69	Canada	125
asio	99	Red-bellied	125
Melanerpes	77	Red-breasted	125
carolinus	77	White-breasted	125
erythrocephalus	77	Nuthatches	125
Meleagrinae	59	Nyctala	69
Meleagris	59	acadica	69
gallopavo	59	tengmalmi richardsoni	69
Melospiza	99	Nyctea	71
fasciata	99	nyctea	71
georgiana	100	Nycticorax	44
lincolni	99	nycticorax naevius	44
Merganser	31	violaceus	5
American	31	Oidemia	38
americanus	31	americana	38
Hooded	32	deglandi	38
Red-breasted	32	perspicillata	38
serrator	32	Old Squaw	37
Mergansers	31	Old Wife	37
Merginae	31	Olive-backed Thrush	129
Merula	130	Olive-sided Flycatcher	82
migratoria	130	Olor	40
Michigan Bird Fauna	4	buccinator	40
Michigan Bird Laws	6	columbianus	40
Micropalama	49	Orange-crowned Warbler	111
himantopus	49	Orange-throated Warbler	114
Micropodidae	79	Orchard Oriole	89
Milvulus tyrannus	5	Oregon Junco	99
Miminae	120	Oregon Snow Bird	99
Mimus	120	Oriole	89
polyglottos	121	Baltimore	89
Mississippi Kite	61	Orchard	89

	Page.		Page.
Orioles	87	Pectorial Sandpiper	50
Ortolan	45, 87	Peet-weet	53
Oscines	84	Pelecanidæ	31
Osprey	66	Pelecanus	31
American	66	erythrorhynchus	31
Ospreys	66	Pelican	31
Otocoris	84	American White	31
alpestris	84	Pelicans	31
alpestris praticola	84	Perching Birds	81
Oven Bird	116	Perdiciuæ	56
Owl	67	Peregrine Falcon	66
Acadian	69	Perisoreus	85
American Barn	67	canadensis	86
American Hawk	71	Petrochelidon	108
American Long-eared	68	lunifrons	103
Barred	68	Pewee	82
Great Gray	68	House	82
Great Horned	70	Wood	83
Hawk	71	Pewit	82
Hoot	68, 70	Pewit Flycatcher	82
Long-eared	68	Phalacrocoraciæ	30
Mottled	69	Phalacrocorax	31
Prairie	68	carbo	31
Richardson's	69	dilophus	31
Saw-whet	69	Phalarope	47
Screech	69	Gray	47
Short-eared	68	Northern	47
Snowy	71	Red	47
Western Horned	71	Red-necked	47
White	71	Wilson's	47
Owls	67	Phalaropes	47
Barn	67	Phalaropodidæ	47
Common	67	Phalaropus	47
		lobatus	47
		tricolor	47
Painted Longspur	95	Phasiani	56
Palm Warbler	116	Phasianidæ	59
Paludicolæ	44	Pheasant	58
Pandion	66	Pheasants	56, 59
haliaetus carolinensis	66	Philadelphia Vireo	108
Pandioninæ	66	Philip Sparrow	96
Paridæ	125	Philohela	48
Parinæ	126	minor	48
Paroquet	72	Phœbe	82
Carolina	72	Pica	85
Paroquets	72	pica hudsonica	85
Parrots	72	Pici	74
Partridge	57	Picidæ	74
Spruce	57	Picoides	75
Partridges	56	arcticus	75
Parula Warbler	112	americanus	75
Parus	126	Pied-billed Grebe	25
atricapillus	127	Pigeon	59
bicolor	126	Passenger	59
carolinensis	5	Wild	59
hudsonicus	127	Pigeon Hawk	66
Passer	96	Pigeons	59
domesticus	96	Pileated Woodpecker	76
Passerella	100	Pine-creeping Warbler	115
iliaca	100	Pine Finch	94
Passerina	101	Pine Grosbeak	91
cyanea	101	Pine Linnæ	94
versicolor	101	Pine Siskin	94
Passeres	81	Pine Warbler	115
Pavoncella	5	Pinicola	91
pugnax	5		

	Page.		Page.
Pinicola, enucleator	91	Quail	56
Pinnated Grouse	58	Quiscalas	90
Pintail	35	quiscula	5
Pipilo	100	quiscula æneus	90
erythrophthalmus	100	Rail	45
Piping Plover	55	Carolina	45
Piping Ring Plover	55	King	45
Pipit	120	Red-breasted	45
American	120	Virginia	45
Pipits	120	Yellow	46
Piranga	102	Ralli	45
erythromelas	102	Rallidæ	45
rubra	102	Rallinæ	45
Plectrophenax	94	Rallus	45
nivalis	94	elegans	45
Plegadis	41	longirostris crepitans	5
autumnalis	41	virginianus	45
Plover	52	Rails	44-45
American Golden	55	Raptores	60
Belted Piping	56	Raven	86
Black-bellied	54	Night	44
Bull-head	54	Razor-billed Ank	26
Field	52	Recurvirostra	48
Kildeer	55	americana	48
Piping	55	Recurvirostridæ	48
Piping Ring	55	Red-bellied Nuthatch	125
Prairie	52	Red-bellied Woodpecker	77
Ring	55	Redbird	100, 102
Ring-neck	55	Black-winged	102
Semipalmated	55	Summer	102
Upland	52	Virginia	100
Plovers	54	Red-breasted Nuthatch	125
Plum Pudden	41	Red-breasted Sandpiper	49
Pochard	35	Red-breasted Snipe	49
American	35	Red Crossbill	93
Podicipedes	24	Red-eyed Greenlet	108
Podicipidæ	24	Red-eyed Vireo	108
Podilymbus	25	Red-head	35
podiceps	25	Read-headed Woodpecker	77
Polioptila	128	Red-necked Grebe	24
cærulea	128	Red-necked Phalarope	47
Polioptilinæ	128	Red Phalarope	47
Pomarine, Jæger	27	Redpoll	98
Poocætes	95	Common	98
gramineus	95	Greater	94
Porzana	45	Lesser	93
carolina	45	Red Shouldered Buzzard	64
noveboracensis	46	Red Shouldered Hawk	64
Prairie Chicken	58	Red-shouldered Blackbird	88
Prairie Hen	58	Redstart	119
Prairie Horned Lark	84	American	119
Prairie Owl	68	Red-tailed Buzzard	68
Prairie Plover	52	Red-tailed Hawk	63
Prairie Warbler	116	Red-throated Diver	26
Progne	102	Red-throated Loon	26
subis	102	Red-winged Blackbird	88
Prothonotary Warbler	110	Reed Bird	87
Protonotaria	110	Regulus	127
citrea	110	calendula	128
Psittaci	72	satrapa	127
Psittacidæ	72	Regulinæ	127
Ptarmigan (Willow)	58	Rice Bird	87
Puffin	26	Richardson's Owl	69
Purple Finch	92	Ring-billed Gull	28
Purple Martin	102	Ring-neck	55

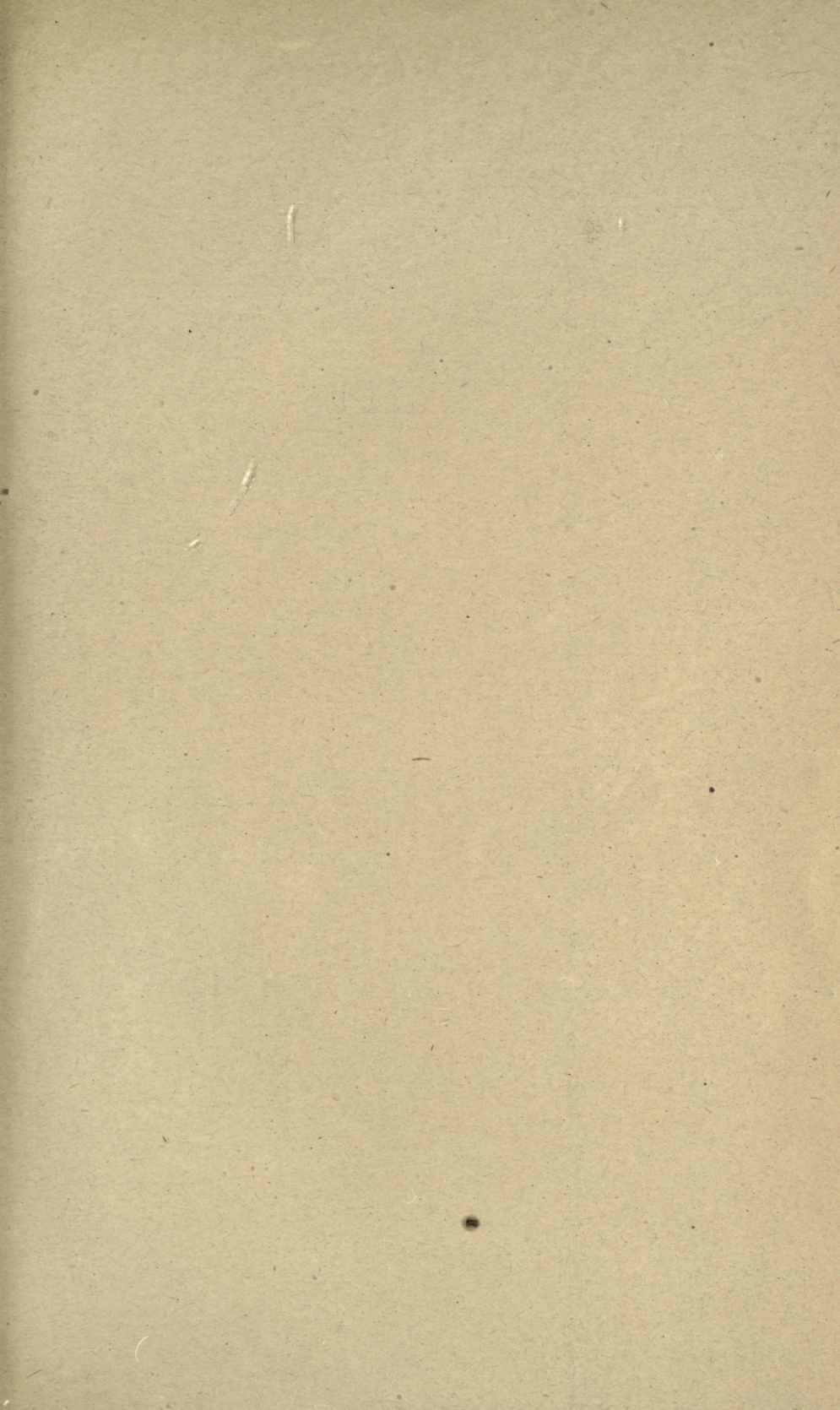
	Page.		Page.
Ring Plover	55	Scotiapteryx	68
Rissa	27	cinerea	67
tridactyla	27	Screech Owl	69
Robin	130	Sea Coot	38
American	130	Sea Dove	27
Ground	100	Sea Swallows	29
Marsh	100	Seiurus	116
Swamp	129-130	aurocapillus	116
Robin Snipe	49	motacilla	117
Roseate Tern	30	noveboracensis	116
Rose-breasted Grosbeak	101	Sempalmated Plover	55
Rose-breasted Song Grosbeak	101	Sempalmated Sandpiper	50
Rough-winged Swallow	104	Sempalmated Tattler	52
Royal Tern	29	Setophaga	119
Ruby-crowned Kinglet	128	rutilicilla	119
Ruby-throated Humming Bird	80	Sharp Shinned Hawk	62
Ruddy Duck	38	Shore Birds	47
Ruffed Grouse	58	Shore Lark	84
Rusty Blackbird	90	Short-billed Curlew	53
Rusty Grackle	90	Short-billed Marsh Wren	123
Sabine's Gull	29	Short-eared Owl	68
Sanderling	51	Short-tailed Tern	30
Sandhill Crane	44	Shoveller	34
Sand Martin	104	Shrike	107
Sandpiper	53	Northern	107
American Green	52	Logger-head	107
Baird's	50	White-rumped	107
Bartramian	52	Shrikes	107
Black-bellied	50	Shytopoke	41
Boneparte's	50	Sialia	131
Buff-breasted	53	arctica	5
Curlew	50	sialis	131
Least	50	Sickle-billed Curlew	53
Pectoral	50	Sylvania	118
Red-backed	50	canadensis	119
Red-breasted	49	mitrata	118
Sempalmated	50	pusilla	119
Solitary	52	Siskin	94
Spotted	53	Pine	94
Stilt	49	Sitta	125
White-rumped	50	canadensis	125
Sandpipers	48	pusilla	5
Sand Swallow	104	carolinensis	125
Sap Sucker	76	Sittine	125
Yellow-bellied	76	Skuas	27
Sarcorhamphi	60	Skunk Blackbird	87
Savana Sparrow	96	Smith's Longspur	95
Saw-bill	32	Smithsonian Gull	28
Saw-whet Owl	69	Snipe	49
Sayornis	82	American	49
phoebe	82	Grass	50
saya	5	Gray	49
Scarlet Tanager	102	Gray-backed	49
Scaup Duck	36	Jack	49-50
Greater	36	Red-bellied	49
Lesser	36	Robin	49
Scolocophagus	90	Stone	51
carolinus	90	Wilson's	49
Scelopacidae	48	Snipes	48
Scoter	38	Snow Bird	99
American	38	Black	99
American Black	38	Common	99
Surf	38	Oregon	99
Velvet	38	White	94
White-winged	38	Snow Bunting	94

	Page.		Page.
Snow Flake.....	94	Spruce Partridge.....	57
Snow Goose.....	38	Square-tailed Barn Swallow.....	103
Greater.....	39	Squawk.....	44
Lesser.....	38	Stake Driver.....	41
Snowy Heron.....	43	Starlings.....	87
Snowy Owl.....	71	Meadow.....	89
Solitary Greenlet.....	109	Steganopodes.....	30
Solitary Sandpiper.....	52	Stelgidopteryx.....	104
Solitary Tattler.....	52	serripennis.....	104
Somateria.....	38	Stercorariidæ.....	27
dresseri.....	38	Stercorarius.....	27
mollissima borealis.....	5	pomarinus.....	27
spectabilis.....	38	Sterna.....	29
Song Birds.....	84	antillarum.....	30
Soongless Perching Birds.....	81	dougalli.....	30
Song Sparrow.....	99	forsteri.....	29
Sooty Tern.....	30	fuliginosa.....	30
Sora.....	45	hirundo.....	29
Sparrow.....	95	maxima.....	29
Chipping.....	98	paradisæa.....	29
Clay colored.....	98	tschegrava.....	29
Cricket.....	97	Sternnina.....	29
English.....	96	Stilt.....	48
European.....	96	Black-necked.....	48
Field.....	98	Stilt Sandpiper.....	49
Fox.....	100	Stilts.....	48
Grasshopper.....	97	Striges.....	67
Henslow's.....	97	Strigidæ.....	67
Lark.....	97	Strix.....	67
Leconte's.....	97	pratincola.....	67
Lincoln.....	99	Stone Snipe.....	51
Nelson's.....	97	Storks.....	41
Philip.....	76	Sturnella.....	89
Red.....	100	magna.....	89
Savanna.....	96	magna neglecta.....	89
Song.....	99	Sugar Bird.....	126
Swamp.....	100	Sula bassana.....	5
Tree.....	98	Summer Duck.....	35
Vesper.....	95	Summer Red Bird.....	102
White-browed.....	97	Summer Tanager.....	102
White-browed Crowned.....	97	Surf Birds.....	56
White Crowned.....	97	Surf Duck.....	38
White-throated.....	98	Surf Scoter.....	38
Yellow-winged.....	97	Surnia.....	71
Sparrows.....	90	ulula caparoch.....	71
Spatula.....	34	Swainson's Hawk.....	64
clypeata.....	34	Swallow.....	103
Sphyrapicus.....	75	Bank.....	104
varius.....	76	Barn.....	103
Spinus.....	94	Blue-backed.....	104
pinus.....	94	Chimney.....	79
tristis.....	94	Cliff.....	103
Spirit Duck.....	37	Eave.....	103
Spiza.....	101	Field.....	104
americana.....	101	Rough-winged.....	104
Spizella.....	98	Sand.....	104
monticola.....	98	Square-tailed Barn.....	103
pallida.....	98	Tree.....	104
pusilla.....	98	White-bellied.....	104
socialis.....	98	Swallows.....	102
Spoonbill.....	34	Swallowed-tailed Kite.....	61
Spoonbills.....	41	Swamp Angel.....	130
Spotted Sandpiper.....	53	Swamp Robin.....	129, 130
Spotted Tattler.....	53	Swamp Sparrow.....	100
Sprigtail.....	35		

	Page.		Page.
Swan	49	Thrashers	120
American	40	Thrush	129
Trumpeter	40	Brown	121
Whistling	40	Golden-crowned	116
Swans	31	Gray-cheeked	129
Swift	79	Hermit	130
Chimney	79	Louisiana Water	117
Swifts	77	Olive-backed	121
Spine-tailed	77-79	Small-billed Water	116
Swimmers	31	Song	129
Lamelloirostral	31	Swainson's	129
Long-winged	27	Water	116
Totipalmate	30	Wilson's	129
Sycamore Warbler	114	Wood	129
Sylvania	118	Thrushes	116, 121, 129
canadensis	119	Thryothorus	122
mitrata	118	bewickii	122
pusilla	119	ludovicianus	122
Sylviidæ	127	Thunder Pumper	41
Symphemia	52	Tip-up	52, 53
semipalmata	52	Tit Lark	120
Synthliboramphus	26	American	120
antiquus	26	Tit Lark Warbler	116
Syrnium	68	Titmice	126
nebulosum	68	Titmouse	126
Tachycineta	104	Black-fronted	126
bicolor	104	Tufted	126
Tanager	102	Tits	125
Scarlet	102	Tomtit	125
Summer	102	Top-knot	32
Tanagridæ	102	Totipalmate Swimmers	30
Tattler	51	Totanus	51
Bartramian	52	flavipes	52
Greater	51	melanoleucus	51
Lesser	52	solitarius	52
Semipalmated	52	Towhee	100
Solitary	52	Towhee Bunting	100
Spotted	53	Trail's Flycatcher	83
Teal	33	Tree Duck	35
Blue-winged	33	Tree Sparrow	98
Green-winged	33	Tree Swallow	104
Teeter-tail	53	Tringa	49
Telltale	51	alpina pacifica	50
Tennessee Warbler	111	bairdii	50
Tern	29	canutus	49
Arctic	29	ferruginæ	50
Black	30	fuscicollis	50
Caspian	29	maculata	50
Cayenne	29	maritima	5
Common	29	minutilla	50
Foster's	29	Trochili	79
Gull-billed	29	Trochilidæ	79
Least	30	Trochilus	80
Marsh	29	colubris	80
Roseate	30	Troglodytes	122
Royal	29	ædon	122
Short-tailed	30	hiemalis	123
Sooty	30	Troglodytidæ	120
Wilson's	29	Troglodytinæ	122
Terns	27, 29	Trumpeter Swan	40
Tetraonidæ	56	Tryngites	53
Thistle bird	94	subruficollis	53
Thrasher	121	Tufted Titmouse	126
Brown	121	Turdidæ	129
		Turdinæ	129

	Page.		Page.
Turdus.....	129	Warbler, Black-throated Green.....	115
aliciae.....	129	Blue.....	113
aonalaschke pallasii.....	130	Blue Golden-winged.....	111
fuscescens.....	129	Blue-winged.....	111
mustellinus.....	129	Blue-winged Yellow.....	111
ustulatus swainsonii.....	129	Blue Yellow-backed.....	112
Turkey.....	59	Canadian.....	119
Wild.....	59	Canadian Flycatching.....	119
Turkeys.....	59	Cape May.....	112
Turnstone.....	56	Cerulean.....	113
Turnstones.....	56	Chestnut-sided.....	113
Tympanuchus.....	58	Connecticut.....	117
americanus.....	58	Golden-crown.....	113, 127
Tyrannidæ.....	81	Golden Swamp.....	110
Tyrannus.....	81	Golden-winged.....	111
tyrannus.....	81	Green Black-capped yellow.....	119
Upland Plover.....	52	Hemlock.....	114
Uria.....	26	Hooded.....	118
troile.....	26	Hooded Flycatching.....	118
Urinator.....	25	Kentucky.....	117
arcticus.....	26	Kirtland's.....	115
imber.....	25	Large-billed Wagtail.....	117
lumme.....	26	Magnolia.....	113
Urinatoridæ.....	25	Maryland Yellow-throat.....	118
Varied Bunting.....	101	Mourning.....	117
Veery.....	129	Myrtle.....	113
Velvet Scoter.....	38	Nashville.....	111
Vesper Sparrow.....	95	Orange-crowned.....	111
Vireo.....	107	Orange-throated.....	114
flavifrons.....	109	Palm.....	116
gilvus.....	108	Parula.....	112
noveboracensis.....	109	Pine.....	115
olivaceus.....	108	Pine-creeping.....	115
philadelphicus.....	108	Prairie.....	116
solitarius.....	109	Prothonotary.....	110
Vireo.....	107	Sycamore.....	114
Blue-headed.....	109	Tennessee.....	111
Brotherly Love.....	108	Titlark.....	116
Philadelphia.....	108	Wag-tailed.....	116
Red-eyed.....	108	White-browed Yellow-throat.....	114
Warbling.....	108	Willow.....	110
White-eyed.....	109	Wilson's.....	119
Yellow-throated.....	109	Worm-eating.....	111
Vireonidæ.....	107	Yellow.....	112
Vireos.....	107	Yellow Redpoll.....	116
Virginia Red Bird.....	100	Yellow-rumped.....	113
Vulture.....	60	Yellow-throated Ground.....	118
Turkey.....	60	Warblers.....	109
Vultures.....	60	Wood.....	109
American.....	60	Warbling Greenlet.....	108
Wagtail.....	52, 53, 120	Warbling Vireo.....	108
Wood.....	116	Water Wagtail.....	116
Wagtail Warbler.....	116	Waterwitch.....	25
Wagtails.....	120	Waxwing.....	105
Warbler.....	110, 127	Bohemian.....	105
Bay-breasted.....	114	Cedar.....	106
Black and White.....	110	Waxwings.....	105
Black and Yellow.....	113	Western Grebe.....	24
Blackburnian.....	114	Western Horned Owl.....	71
Black-capped Yellow.....	119	Western Meadow Lark.....	89
Black-poll.....	114	Whip-poor-will.....	78
Black-throated Blue.....	112	Whistler.....	36
		Whistling Swan.....	40
		White-bellied Swallow.....	104
		White-breasted Nuthatch.....	125

	Page.		Page.
White-browed Crowned Sparrow	97	Wood Wagtail	116
White-browed Sparrow	97	Worm-eating Warbler	111
White-browed Yellow-throated Warbler	114	Wren	122
White-cheeked Goose	40	Bewick's	122
White-crowned Sparrow	97	Big Brown	121
White-eyed Vireo	109	Carolina	122
White Owl	71	Golden-crowned	127
White-rumped Sandpiper	50	House	122
White-rumped Shrike	107	Long-billed Marsh	124
White Snow Bird	94	Ruby-crowned	128
White-tailed Kite	61	Short-billed Marsh	123
White-throated Sparrow	98	Winter	123
White-winged Crossbill	93	Wrens	120
White-winged Gull	27	Xanthocephalus	88
White-winged Scoter	38	xanthocephalus	88
Whooping Crane	44	Xema	29
Widgeon	33	sabini	29
American	33	Yellow-bellied Flycatcher	83
Willet	52	Yellow-bellied Sap Sucker	76
Willow Ptarmigan	58	Yellow-bellied Woodpecker	76
Willow Warbler	110	Yellow-billed Cuckoo	73
Wilson's Phalarope	47	Yellow-breasted Chat	118
Wilson's Snipe	49	Yellow Bird	94
Wilson's Tern	29	Summer	112
Wilson's Thrush	129	Yellow Crake	46
Wilson's Warbler	119	Yellow Hammer	77
Winter Wren	123	Yellow-headed Blackbird	88
Woodcock	48, 76	Yellow-legs	52
American	48	Greater	51
Wood Duck	35	Yellow Redpoll Warbler	116
Woodland Warblers	109	Yellow Rail	46
Woodpecker	75	Yellow-rumped Warbler	113
American Three-toed	75	Yellow Shanks	52
Arctic Three-toed	75	Yellow-throat	118
Banded-backed Three-toed	75	Maryland	118
Black	76	Yellow-throated Ground Warbler	118
Black-backed Three-toed	75	Yellow-throated Vireo	109
Downy	74	Yellow Warbler	112
Golden winged	77	Yellow Winged Sparrow	97
Hairy	74	Zenaidura	60
Pileated	76	macroura	60
Red-bellied	77	Zonotrichia	97
Red-headed	77	albicollis	98
Yellow-bellied	76	leucophrys	97
Woodpeckers	74		
Wood Pewee	83		
Wood Thrush	129		



E. G. Wickson

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BULLETIN

OF THE

Ohio Agricultural Experiment Station.

TECHNICAL SERIES.—VOLUME I, NUMBER 4.

Wooster, Ohio, July, 1896.

A PRELIMINARY LIST

OF THE



BIRDS



OF

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ARTICLE XXIV:

A PRELIMINARY LIST

OF THE

Birds of Wayne County, Ohio.

BY

HARRY C. OBERHOLSER.

The Bulletin of this Station is sent free to all residents of the State who request it. Persons who receive duplicate copies of the Bulletin, or who do not care to receive any, are requested to notify the Station, as the edition is not sufficient to supply the urgent demand for it.

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BY THE DIRECTOR.

The Technical Series of the bulletins of this Station was begun as a channel for the publication and preservation of papers, the incidental product of the investigations of the Station, but which, by reason of their technical character, are of interest chiefly to those engaged in scientific research.

While the papers thus far published in this series are all more or less fragmentary and many relate to other lines of work, the leading object in view has been the collection of material which may some day be worked into a systematic biological survey of the State, this to serve as the basis of a more accurate knowledge than is now possessed for the prosecution of the more distinctively economic work.

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Article VI.—Descriptive catalogue of the shells of Franklin county, Ohio. (Illustrated) *H. A. Surface.*

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- Article VII.—Methods of oviposition in the Tipulidæ. (Illustrated)..... *F. M. Webster.*
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BULLETIN

OF THE

OHIO AGRICULTURAL EXPERIMENT STATION.

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TECHNICAL SERIES.

JULY, 1896.

Article XXIV.—A Preliminary List of the Birds of Wayne County, Ohio.

BY HARRY C. OBERHOLSER.

INTRODUCTION.

THE present catalogue is the outgrowth of a request made some time since by Prof. F. M. Webster, Entomologist of the Ohio Agricultural Experiment Station, who desired the writer to prepare a report on the avifauna of Wayne County, the new location of the Station. Although this task was undertaken with no little hesitation, it has been the aim of the author to offer a list as complete as possible, with such annotations as seem to be of interest in this connection.

That the number of species is far from exhaustive is of course unnecessary to state. No one more than the writer regrets this evident incompleteness, which is principally due to the comparatively short period covered by the writer's observations, and to the fact that the only opportunities for such investigations were the leisure hours of an active business life. That the present paper may serve as a basis for future observations is the chief excuse for its existence. With this purpose in view much care has been exercised to avoid the inclusion of any but perfectly

reliable records. All but four species¹ have been personally identified by the writer, either in the field or from specimens in local collections; and these four exceptions have been admitted only upon what has been considered satisfactory evidence of their occurrence. Species of doubtful or of probable occurrence, while excluded from the list proper, have been separately enumerated as a guide to future observations.

The notes from which this paper has mainly been compiled were taken by the writer between February 8, 1890, and April 9, 1894; during which time almost all of the County, excepting the extreme northeastern and southwestern portions, was visited. The data here utilized were, however, obtained chiefly in the vicinity of Wooster, within a radius of about six miles of the city. This information has been supplemented by the examination of a number of collections of mounted birds from different parts of the County; evidence of the occurrence of a number of species not otherwise noted having been thus secured. Statements in regard to the abundance of species have in most cases been carefully estimated from comparisons of the actual number of individuals recorded, and may therefore be regarded as approximately correct. The annotations are drawn almost entirely from notes relating to Wayne County, and unless it is otherwise specifically stated, are intended to reflect the status of the species in question merely with respect to the region under consideration.

The nomenclature, and the classification, which at the suggestion of Prof. Webster has been given entire, are of course those of the Check List of the American Ornithologists' Union, including the recent emendations. The illustrations, which are also the result of a suggestion by Prof. Webster, have been here reproduced through the courtesy of Messrs. Estes and Lauriat, of Boston, Mass. The writer desires furthermore to express to Prof. F. M. Webster his sincere appreciation of much indispensable assistance in the preparation of this report. Thanks are also due to Mr. Joseph Housekeeper, of Wooster, for information in regard to some of the water birds; to Mr. Ellsworth Freeman, of Orrville, as well as to the other gentlemen who have kindly permitted the writer to examine birds in their possession, and whose names appear in the following pages.

Wayne County is situated in the northeastern portion of Ohio, about thirty-five miles from Lake Erie and about fifty-five miles west of the State line of Pennsylvania. The forty-first parallel of north latitude forms its northern boundary. It is in shape nearly square, being twenty-five miles from east to west, and about twenty-three miles in north and south extent, with an area of 535 square miles. The towns mentioned in the ensuing pages are situated as follows: Wooster lies about three or four

¹ These are: *Meleagris gallopavo*, *Pandion haliaëtus carolinensis*, *Ceophloeus pileatus* and *Acanthis linaria*.

miles southwest of the geographical center of the County, and nearly a mile from the present course of Killbuck Creek; Orrville is about eleven miles northeast of Wooster, and six miles from the eastern boundary; West Salem is located in the extreme northwest corner of the County, while Shreve lies close to the southern line, and five or six miles from its western limit.

The County itself lies upon the southern slope of the watershed which separates the streams flowing into Lake Erie from those tributary to the Ohio River; its northern boundary being close to the top of the dividing ridge, the summit level of which is found in the vicinity of Akron, in Summit County. The altitude of the highest point of land within Wayne County is 1,042 feet, this being in the extreme northeastern township. In some of the surrounding counties the highest elevations range from 300 to 400 feet higher; while the maximum in the State is attained in Logan County, where the altitude is 1,540 feet above sea level.

The geological formation of Wayne County is, with some minor modifications, essentially that of northeastern Ohio. Consequently there are absent all the series between the coal measures of the Carboniferous and the superincumbent Quaternary deposits; the Mesozoic and Tertiary being unrepresented. By reason of its position on the eastern slope of the axis of the anticlinal, Wayne County marks one of the western limits of the Ohio coal deposits. The coal measures are confined principally to the eastern half of the County, and where present rest either directly upon the sub carboniferous Waverly group, or upon the superincumbent sand conglomerate formation. Coal in paying quantities and of good quality is extensively mined in several of the eastern townships.

The Quaternary deposits consist largely of drift, and their clays, sands, gravels and boulders, overlying the rock strata to a depth of ten to eighty feet, constitute the major portion of the surface of the County. The rocks of the Carboniferous formation, both those of the Waverly group and those of the coal measures, consisting of sandstones, shales and limestones, are, however, exposed in numerous places throughout the County, and in suitable locations are to some extent quarried. Glacial action is evident over almost the entire area; and there are a number of buried stream channels, as well as the remains of the beds of several ancient lakes, more particular mention of which will be made in another connection.

The surface of the country is generally rolling, interspersed in some portions with elevations of considerable height, occasional deep valleys, and expanses of level lowland prairie.

The streams are numerous, though not of large size. The most important is the Killbuck, which rises in the northern part of the County, flows in a southerly direction entirely across the western portion, passing within a mile of Wooster, and in the continuance of its course beyond the limits of the County, finally discharges its waters into the Muskingum. The next in size is the Chippewa, which, however, flows through only the two northeastern townships, becoming in its extralimital course tributary to the Tuscarawas River. Newman's Creek, another tributary of the Tuscarawas, rises in the eastern portion of the County, and flows out in a northeasterly direction, draining the region known as Newman's Swamp. In the extreme western portion the Muddy Fork of the Mohican makes a wide circuit into the two central townships; while the southeastern portion of the County is drained by Sugar Creek and Salt Creek. Apple Creek is the main tributary of the Killbuck, and joins the latter near Wooster, its own branches flowing from the east and northeast. All these streams are fed by numerous smaller ones, some of which are, however, almost entirely dry during protracted absence of rain. The majority of the main streams are crooked creeks, with generally very sluggish currents and very low banks. The elevations and hills, which in many places slope back from the larger streams, apparently indicate by their evidences of erosion that the flowing water has cut down through them to the channels now occupied.

The few lakes are situated in the northeastern and southwestern parts of the County, the largest being Fox Lake, which lies only a short distance from the line of Stark County. Its water is clear and very deep, and it appears to be a favorite resort for both water birds and shore birds. All the other lakes are much smaller. Near the southwestern corner of the County, but just outside its boundaries, is situated a group of four or five lakes, two of which, Long Lake and Odell's Lake, are of considerable size. The northern extremity of the latter is said to be within the County. The character of these lakes is much the same as of those previously mentioned, the shores being partially or wholly marshy and covered in places with a thick growth of cat-tail flags (*Typha latifolia*) or yellow water lilies (*Nymphaea advena*); such vegetation forming the favorite summer home of the Least Bittern (*Ardetta exilis*). In suitable places in these lakes the white water lily (*Castalia odorata*) is found in abundance.

Bordering most of the streams of Wayne County are level low lands, which along the larger water courses are sometimes several miles in width. During seasons of heavy rainfall these bottom lands are overflowed, and when this occurs during the fall or early spring, Ducks and other water birds are much more than usually abundant. Many portions of these lands have been drained and are now under cultivation. There are here

also many damp, grassy meadows, some of them of wide extent, which are in spring and fall the feeding grounds of numerous Meadowlarks (*Sturnella magna*) and Killdeers (*Egialites vocifera*). Even at the present time large areas of forest still exist on some of these bottom-lands, though of course much has been cleared, and in many places there remains only a fringe of trees along the streams. The principal trees here are red maple (*Acer rubrum*) and elm (*Ulmus Americana*); together with which occur sycamore (*Platanus occidentalis*), black walnut (*Juglans nigra*), beech (*Fagus atropunicea*), white oak (*Quercus alba*), pin oak (*Quercus palustris*), sugar maple (*Acer Saccharum*), swamp hickory (*Hicoria minima*), slippery elm (*Ulmus pubescens*), and ash (*Fraxinus sp.?*). These bottom woods are, during the breeding season, frequented by such birds as the Red-shouldered Hawk (*Buteo lineatus*), Barred Owl (*Syrinum nebulosum*) and Crow (*Corvus americanus*). In the many dead tree trunks several species of Woodpeckers find homes, and the decaying stumps serve a like purpose for the benefit of the Chickadees (*Parus atricapillus*). Here also in the winter are found in greatest abundance all of the resident Woodpeckers; while the Brown Creeper (*Certhia familiaris americana*) and Winter Wren (*Troglodytes hiemalis*) seem to find in such localities the most congenial surroundings.

Throughout the lowlands of the Killbuck Valley in the southern half of the County are frequent swamps, some of them of considerable extent. They are always, except in the most extreme drought, overspread with water, and are either covered with cat-tail flags (*Typha latifolia*) and tall rank grass, or overgrown with dense thickets and low trees; in either case well-nigh inaccessible under ordinary circumstances. Here, as well as in the undergrowth along the streams, flourish alders, willows of several species, and other similar bushes; while the waste lands often surrounding them produce a luxuriant harvest of beggar-ticks (*Bidens frondosa*) and spanish needles (*Bidens bipinnata*).

These isolated bogs are the remains of what in the early part of the present century was an almost uninterrupted swamp, extending south from Wooster to beyond the limits of the County, and which, together with all the lowlands in the valley, was covered with water for many years after the advent of man to this region. This is evidently what was once the bed of a pre-glacial lake, the former existence of which is attested by the present topography of the locality.

In this ancient lake were islands whose identity is still preserved, their soil being of a conspicuously different consistency from that of the surrounding lake bed, over which has been spread thick deposits of sand, and of the vegetable mould which now constitutes the rich soil of these bottom-lands. In this respect these islands are scarcely different from the

high ground bordering the valley, and were originally well wooded with trees similar to those growing on the uplands. There are wide stretches of this lake bed, now designated as "prairies", which were formerly open water, but by their emergence became covered with a thick growth of vegetation, consisting of bushes, flags, rushes and rank grass. The portions of these prairies that remain at present uncleared are the favorite haunts of Rails and Snipes.

Newman's Swamp, extending east from Orrville six miles to the border of the County, is situated in the bed of another pre-glacial lake, and was in many respects the same as the swamp in the valley of the Killbuck, only if anything wilder and more impenetrable. This has now, however, to a great extent been cleared and put under cultivation. Areas of swamp and prairie, of an origin similar to those described, exist in still other localities, notably in the northeast about Fox Lake, and in the extreme southwestern portion of the County.

In places along the large streams are drift deposits, forming often extensive terraces skirting the bluffs which border the valleys—the city of Wooster itself being located upon ground of this character. Upon these terraces existed forests of deciduous trees, probably similar to those now growing upon the uplands. The uplands themselves are at length seen to be practically plateaux overlooking the lowlands in the valleys. Erosion is plainly visible in the numerous ravines and gullies which have been cut out where the brooks flow down to join the main streams.

These ravines are usually wooded, at least in part, containing in many places the only trees spared by the ruthless axe. Here are found such trees and shrubs as the following: buckeye (*Esculus glabra*), wild cherry (*Prunus serotina*), elm (*Ulmus Americana*), red maple (*Acer rubrum*), black walnut (*Juglans nigra*), butternut (*Juglans cinerea*), tulip tree (*Liriodendron Tulipifera*), beech (*Fagus atropunicea*), oaks (*Quercus alba, rubra et valuin*), sassafras (*Sassafras Sassafras*), dogwood (*Cornus florida*), iron-wood (*Ostrya Virginiana*), elder (*Sambucus Canadensis*), black haw (*Viburnum prunifolium*), and at least two species of thorn (*Crataegus*). In these ravines flourish the trilliums (*Trillium erectum et grandiflorum*), while in suitable places along the banks grow the dainty hepatica (*Hepatica Hepatica*) and the fragrant arbutus (*Epigæa repens*), although the latter is extremely local in its distribution. These shady retreats furnish congenial summer homes for such avian species as the Wood Thrush (*Turdus mustelinus*), Rose-breasted Grosbeak (*Habia ludoviciana*), Scarlet Tanager (*Piranga erythromelas*), Brown Thrasher (*Harporhynchus rufus*), and Catbird (*Galeoscoptes carolinensis*).

The uplands are interspersed with frequent woodland tracts, the major portion of the country, however, being under cultivation. The

numerous apple orchards and grass fields leave nothing to be desired by those birds which are accustomed to make such places their summer abodes. The forest areas consist often of heavy timber, many of the trees being from three to five feet in basal diameter, but from some of the woodland the larger trees have been removed, leaving only the smaller growth. The underbrush in these upland woods is rarely dense, and is often practically wanting. The trees are almost exclusively deciduous, the only conifers of consequence being the hemlock (*Tsuga Canadensis*), which occurs in a few localities on high banks along streams; and the red cedar (*Juniperus Virginiana*), scattered individuals of which are found in some parts of the County. The characteristic deciduous trees are: white oak (*Quercus alba*), red oak (*Quercus rubra*), black oak (*Quercus velutina*), pin oak (*Quercus palustris*), shell-bark hickory (*Hicoria ovata*), pig-nut hickory (*Hicoria glabra*), sugar maple (*Acer saccharum*), beech (*Fagus atropunicea*), basswood (*Tilia Americana*), chestnut (*Castanea dentata*), tulip tree (*Liriodendron Tulipifera*), with an occasional cucumber tree (*Magnolia acuminata*.)

With respect to climate this region presents few peculiarities. The temperature ranges from 20 degrees below to 99 degrees above zero Fahrenheit, though both these extremes are exceptional. Heavy frosts are not generally prevalent before October, and the severe cold weather usually occurs during the latter part of December and in January. The influence of winter, however, often extends far into the spring and frosts in May are not infrequent. The fall of snow is not heavy; the greatest rainfall, as a rule, occurring in the spring months. This is usually succeeded either in the summer or early fall by a season of drought, which is sometimes of considerable duration. Severe thunder-showers are not uncommon, being most frequent during June and the first part of July. The average annual precipitation at Wooster, for the seven years previous to 1894, was 40.11 inches; the average annual temperature for the same period being 49.3 degrees Fahrenheit.

Faunally considered this locality is almost purely Carolinian, with a very slight infusion of forms of somewhat more northern affinities—as *Habia ludoviciana*, *Piranga erythromelas* and *Parus atricopillus*, which are all common during the breeding season. With these occur such characteristic Carolinian species as *Empidonax virescens*, *Icterus spurius*, *Spizella pusilla*, *Cardinalis cardinalis*, *Stelgidopteryx serripennis*, *Helminthophila pinus*, *Seiurus motacilla*, *Icteria virens* and *Thryothorus ludovicianus*.

During both seasons of migration, but more particularly in the spring, species, as well as to a less extent individuals, are remarkably numerous, following in their movements what appears to be a natural highway along the courses of the streams, which it will be noticed form the headwaters

of the Muskingum River. The valley of the Killbuck seems to be especially suitable, for during a favorable season the woodlands along this stream fairly teem with bird life. A certain locality, situated along the Killbuck and distant some four miles northwest from Wooster, apparently presents unusual attractions to the birds, besides being both an entomological and a botanical paradise. This appears to be accounted for by the great diversity of topographical conditions existing within a comparatively small area; since here are upland fields, thickets, forests, and wooded ravines closely adjacent to the swamps, marshes, meadows, damp woodlands and thickets of the Killbuck's valley.

To illustrate its attractiveness to the lover of birds, as well as to indicate what may be seen here during the spring season of migration, the following list is appended; consisting of eighty-four species observed on May 15, 1892, between the hours of 7:30 A. M. and 9:00 P. M., a large proportion having been noted in the vicinity of the locality just mentioned:

<i>Ardetta exilis</i> ,	<i>Empidonax flaviventris</i> ,
<i>Ardea virescens</i> ,	<i>Empidonax traillii</i> ,
<i>Gallinago delicata</i> ,	<i>Empidonax minimus</i> ,
<i>Totanus solitarius</i> ,	<i>Cyanocitta cristata</i> ,
<i>Actitis macularia</i> ,	<i>Corvus americanus</i> ,
<i>Ægialitis vocifera</i> ,	<i>Dolichonyx oryzivorus</i> ,
<i>Colinus virginianus</i> ,	<i>Molothrus ater</i> ,
<i>Bonasa umbellus</i> ,	<i>Agelaius phœniceus</i> ,
<i>Zenaidura macroura</i> ,	<i>Sturnella magna</i> ,
<i>Accipiter cooperii</i> ,	<i>Icterus galbula</i> ,
<i>Buteo borealis</i> ,	<i>Quiscalus quiscula æneus</i> ,
<i>Buteo lineatus</i> ,	<i>Spinus tristis</i> ,
<i>Falco sparverius</i> ,	<i>Poocætes gramineus</i> ,
<i>Syrnium nebulosum</i> ,	<i>Zonotrichia leucophrys</i> ,
<i>Megascops asio</i> ,	<i>Zonotrichia albicollis</i> ,
<i>Coccyzus americanus</i> ,	<i>Spicella socialis</i> ,
<i>Coccyzus erythrophthalmus</i> ,	<i>Melospiza fasciata</i> ,
<i>Ceryle alcyon</i> ,	<i>Pipilo erythrophthalmus</i> ,
<i>Dryobates villosus</i> ,	<i>Cardinalis cardinalis</i> ,
<i>Dryobates pubescens</i> ,	<i>Habia ludoviciana</i> ,
<i>Sphyrapicus varius</i> ,	<i>Passerina cyanea</i> ,
<i>Melanerpes erythrocephalus</i>	<i>Piranga erythromelas</i> ,
<i>Colaptes auratus</i> ,	<i>Progne subis</i> ,
<i>Antrostomus vociferus</i> ,	<i>Chilidon erythrogastra</i> ,
<i>Chordeiles virginianus</i> ,	<i>Tachycineta bicolor</i> ,
<i>Chætura pelagica</i> ,	<i>Stelgidopteryx serripennis</i> ,
<i>Trochilus colubris</i> ,	<i>Vireo olivaceus</i> ,
<i>Tyrannus tyrannus</i> ,	<i>Vireo gilvus</i> ,
<i>Myiarchus crinitus</i> ,	<i>Vireo flavifrons</i> ,
<i>Sayornis phœbe</i> ,	<i>Mniotilta varia</i> ,
<i>Contopus virens</i> ,	<i>Helminthophila pinus</i> ,

<i>Dendroica aestiva</i> ,	<i>Thryothorus ludovicianus</i> ,
<i>Dendroica caerulescens</i> ,	<i>Troglodytes hiemalis</i> ,
<i>Dendroica maculosa</i> ,	<i>Sitta carolinensis</i> ,
<i>Dendroica pennsylvanica</i> ,	<i>Parus bicolor</i> ,
<i>Dendroica virens</i> ,	<i>Parus atricapillus</i> ,
<i>Seiurus aurocapillus</i> ,	<i>Regulus calendula</i> ,
<i>Seiurus motacilla</i> ,	<i>Polioptila caerulea</i> ,
<i>Geothlypis trichas</i> ,	<i>Turdus mustelinus</i> ,
<i>Setophaga ruticilla</i> ,	<i>Turdus fuscescens</i> ,
<i>Galeoscoptes carolinensis</i> ,	<i>Merula migratoria</i> ,
<i>Harporhynchus rufus</i> ,	<i>Sialia sialis</i> .

The number of species actually ascertained to occur in the County is 183. Of this number thirty are permanent residents, as follows; those less common during the winter being designated by an asterisk :

<i>Colinus virginianus</i> ,	<i>Dryobates pubescens</i> ,
<i>Bonasa urubellus</i> ,	<i>Melanerpes carolinus</i> ,
<i>Zenaidura macroura</i> *	<i>Colaptes auratus</i> *
<i>Circus hudsonius</i> *	<i>Otocoris alpestris praticola</i> ,
<i>Accipiter velox</i> ,	<i>Cyanocitta cristata</i> ,
<i>Accipiter cooperii</i> ,	<i>Sturnella magna</i> *
<i>Buteo borealis</i> *	<i>Spinus tristis</i> ,
<i>Buteo lineatus</i> *	<i>Passer domesticus</i> ,
<i>Falco sparverius</i> *	<i>Melospiza fasciata</i> *
<i>Asio wilsonianus</i> ,	<i>Cardinalis cardinalis</i> ,
<i>Syrnium nebulosum</i> ,	<i>Ampelis cedrorum</i> *
<i>Nyctala acadica</i> ,	<i>Thryothorus ludovicianus</i> ,
<i>Megascops asia</i> ,	<i>Sitta carolinensis</i> ,
<i>Bubo virginianus</i> ,	<i>Parus bicolor</i> ,
<i>Dryobates villosus</i> ,	<i>Parus atricapillus</i> ,

The following sixty-one are summer residents, those distinguished by an asterisk being sometimes also winter residents :

<i>Aix sponsa</i> ,	<i>Chaetura pelagica</i> ,
<i>Botaurus lentiginosus</i> ,	<i>Trochilus colubris</i> ,
<i>Ardetta exilis</i> ,	<i>Tyrannus tyrannus</i> ,
<i>Ardea herodias</i> ,	<i>Myiarchus crinitus</i> ,
<i>Ardea virescens</i> ,	<i>Sayornis phoebe</i> ,
<i>Rallus elegans</i> ,	<i>Contopus virens</i> ,
<i>Philohela minor</i> ,	<i>Empidonax virescens</i> ,
<i>Actitis macularia</i> ,	<i>Empidonax traillii</i> ,
<i>Ægialitis vocifera</i> ,	<i>Corvus americanus</i> *
<i>Coccyzus americanus</i> ,	<i>Dolichonyx oryzivorus</i> ,
<i>Ceryle alcyon</i> *	<i>Molothrus ater</i> ,
<i>Melanerpes erythrocephalus</i> *	<i>Agelaius phoeniceus</i> ,
<i>Antrostomus vociferus</i> ,	<i>Icterus spurius</i> ,
<i>Chordeiles virginianus</i> ,	<i>Icterus galbula</i> ,

<i>Quiscalus quiscula æneus</i> ,*	<i>Vireo flavifrons</i> ,
<i>Pooecetes gramineus</i> ,	<i>Mniotilta varia</i> ,
<i>Ammodramus savannarum passerinus</i> ,	<i>Helminthophila pinus</i> ,
<i>Spizella socialis</i> ,	<i>Dendroica æstiva</i> ,
<i>Spizella pusilla</i> ,	<i>Seiurus aurocapillus</i> ,
<i>Pipilo erythrophthalmus</i> ,	<i>Seiurus motacilla</i> ,
<i>Habia ludoviciana</i> ,	<i>Geothlypis trichas</i> ,
<i>Passerina cyanea</i> ,	<i>Icteria virens</i> ,
<i>Spiza americana</i> ,	<i>Galeoscoptes carolinensis</i> ,
<i>Piranga erythromelas</i> ,	<i>Harporhynchus rufus</i> ,
<i>Progne subis</i> ,	<i>Troglodytes ædon</i> ,
<i>Petrochelidon lunifrons</i> ,	<i>Cistothorus palustris</i> ,
<i>Chelidon erythrogastra</i> ,	<i>Polioptila cærulea</i> ,
<i>Stelgidopteryx serripennis</i> ,	<i>Turdus mustelinus</i> ,
<i>Lanius ludovicianus excubitorides</i> ,	<i>Merula migratoria</i> ,*
<i>Vireo olivaceus</i> ,	<i>Sialia sialis</i> .*
<i>Vireo gilvus</i> ,	

Six additional species which belong more properly with the transient visitors have been identified as occasional summer residents :

<i>Anas boschas</i> ,	<i>Tachycineta bicolor</i> ,
<i>Totanus flavipes</i> ,	<i>Dendroica pennsylvanica</i> ,
<i>Sphyrapicus varius</i> ,	<i>Setophaga ruticilla</i> .

The transient visitors number fifty-seven, and are as follows :

<i>Colymbus auritus</i> ,	<i>Fulica americana</i> ,
<i>Podilymbus podiceps</i> ,	<i>Gallinago delicata</i> ,
<i>Urinator imber</i> ,	<i>Tringa maculata</i> ,
<i>Larus philadelphia</i> ,	<i>Totanus melanoleucus</i> ,
<i>Merganser americanus</i> ,	<i>Totanus solitarius</i> ,
<i>Lophodytes cucullatus</i> ,	<i>Bartramia longicauda</i> ,
<i>Anas obscura</i> ,	<i>Coccyzus erythrophthalmus</i> ,
<i>Anas americana</i> ,	<i>Empidonax flaviventris</i> ,
<i>Anas carolinensis</i> ,	<i>Empidonax minimus</i> ,
<i>Anas discors</i> ,	<i>Scolecophagus carolinus</i> ,
<i>Spatula clypeata</i> ,	<i>Carpodacus purpureus</i> ,
<i>Dafila acuta</i> ,	<i>Ammodramus sandwichensis savanna</i> ,
<i>Aythya americana</i> ,	<i>Zonotrichia leucophrys</i> ,
<i>Aythya valisneria</i> ,	<i>Zonotrichia albicollis</i> ,
<i>Aythya affinis</i> ,	<i>Melospiza georgiana</i> ,
<i>Glaucionetta clangula americana</i> ,	<i>Passerella iliaca</i> ,
<i>Charitonetta albeola</i> ,	<i>Helminthophila peregrina</i> ,
<i>Erismatur rubida</i> ,	<i>Dendroica tigrina</i> ,
<i>Branta canadensis</i> ,	<i>Dendroica cærulescens</i> ,
<i>Rallus virginianus</i> ,	<i>Dendroica coronata</i> ,
<i>Porzana carolina</i> ,	<i>Dendroica maculosa</i> ,
<i>Gallinula galeata</i> ,	<i>Dendroica cærulea</i> ,

<i>Dendroica castanea</i> ,	<i>Sitta canadensis</i> ,
<i>Dendroica striata</i> ,	<i>Regulus calendula</i> ,
<i>Dendroica blackburniæ</i> ,	<i>Turdus fuscescens</i> ,
<i>Dendroica virens</i> ,	<i>Turdus alicia</i> ,
<i>Geothlypis agilis</i> ,	<i>Turdus ustulatus swainsonii</i> ,
<i>Geothlypis philadelphia</i> ,	<i>Turdus aonalaschæ pallasii</i> .
<i>Sylvania pusilla</i> ,	

Nine species may be catalogued as winter visitors :

<i>Archibuteo lagopus sancti-johannis</i> ,	<i>Lanius borealis</i> ,
<i>Asio accipitrinus</i> ,	<i>Troglodytes hiemalis</i> ,
<i>Plectrophenax nivalis</i> ,	<i>Certhia familiaris americana</i> ,
<i>Spizella monticola</i> ,	<i>Regulus satrapa</i> .
<i>Junco hyemalis</i> ,	

Eighteen species are of only casual or accidental occurrence, as follows :

<i>Larus argentatus smithsonianus</i> ,	<i>Aquila chrysaetos</i> ,
<i>Pelecanus erythrorhynchos</i> ,	<i>Haliaeetus leucocephalus</i> ,
<i>Merganser serrator</i> ,	<i>Falco peregrinus anatum</i> ,
<i>Clangula hyemalis</i> ,	<i>Falco columbarius</i> ,
<i>Olor columbianus</i> ,	<i>Pandion haliaëtus carolinensis</i> ,
<i>Ardea egretta</i> ,	<i>Strix pratincola</i> ,
<i>Cathartes aura</i> ,	<i>Nyctea nyctea</i> ,
<i>Ectopistes migratorius</i> ,	<i>Otocoris alpestris</i> ,
<i>Buteo latissimus</i> ,	<i>Acanthis linaria</i> .

Two species which were undoubtedly once permanent residents of the County are now probably extinct, viz. :

<i>Meleagris gallopavo</i> ,	<i>Ceophlœus pileatus</i> .
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A census of the birds of the County according to families gives the following result :

Podicipidæ, 2 species,	Falconidæ, 13 species,
Urinatoridæ, 1 species,	Strigidæ, 1 species,
Laridæ, 2 species,	Bubonidæ, 7 species,
Pelecanidæ, 1 species,	Cuculidæ, 2 species,
Anatidæ, 20 species,	Alcedinidæ, 1 species,
Ardeidæ, 5 species,	Picidæ, 7 species,
Rallidæ, 5 species,	Caprimulgidæ, 2 species,
Scolopacidæ, 8 species,	Micropodidæ, 1 species,
Charadriidæ, 1 species,	Trochilidæ, 1 species,
Tetraonidæ, 2 species,	Tyrannidæ, 8 species,
Phasianidæ, 1 species,	Alaudidæ, 2 species,
Columbidæ, 2 species,	Corvidæ, 2 species,
Cathartidæ, 1 species,	Icteridæ, 8 species,

Fringillidæ, 22 species,
 Tanagridæ, 1 species,
 Hirundinidæ, 5 species,
 Ampelidæ, 1 species,
 Laniidæ, 2 species,
 Vireonidæ, 3 species,

Mniotiltidæ, 22 species,
 Troglodytidæ, 6 species,
 Certhiidæ, 1 species,
 Paridæ, 4 species,
 Sylviidæ, 3 species,
 Turdidæ, 7 species.

Total number of families, 38; of species, 183.

Nine species may be cataloged as winter visitors:
 Archibuteo lagopus, 1 species,
 Buteo swainsoni, 1 species,
 Falco sparverius, 1 species,
 Circus cyaneus, 1 species,
 Circus hudsonius, 1 species,
 Circus cyaneus, 1 species,
 Circus hudsonius, 1 species,
 Circus cyaneus, 1 species,
 Circus hudsonius, 1 species,
 Circus cyaneus, 1 species,
 Circus hudsonius, 1 species.

Typical species are all only casual or accidental residents as follows:

Archibuteo lagopus, 1 species,
 Buteo swainsoni, 1 species,
 Falco sparverius, 1 species,
 Circus cyaneus, 1 species,
 Circus hudsonius, 1 species,
 Circus cyaneus, 1 species,
 Circus hudsonius, 1 species,
 Circus cyaneus, 1 species,
 Circus hudsonius, 1 species,
 Circus cyaneus, 1 species,
 Circus hudsonius, 1 species.

Two species which were undoubtedly once permanent residents of the County are now probably extinct, viz.:

Cephus bairdii,
 Melospiza californica.

A census of the birds of the County according to families gives the following results:

Archibuteo 2 species,
 Buteo 2 species,
 Falco 1 species,
 Circus 7 species,
 Certhia 1 species,
 Parus 1 species,
 Sitta 1 species,
 Troglodytes 6 species,
 Certhia 1 species,
 Parus 4 species,
 Sylvia 3 species,
 Turdus 7 species,
 Mniotilta 22 species,
 Troglodytes 6 species,
 Certhia 1 species,
 Parus 4 species,
 Sylvia 3 species,
 Turdus 7 species,
 Fringilla 22 species,
 Tanagra 1 species,
 Hirundo 5 species,
 Ampelis 1 species,
 Lanius 2 species,
 Vireo 3 species.

THE BIRDS OF WAYNE COUNTY.

ORDER PYGOPODES. DIVING BIRDS.

SUBORDER PODICIPEDES. GREBES.

FAMILY PODICIPIDÆ. GREBES.

GENUS **COLYMBUS**. LINNÆUS.

SUBGENUS **DYTES**. KAUP.

1. **Colymbus auritus** (LINN.).

Horned Grebe.

A more or less regular transient on the streams and ponds of the County. It is tolerably common in the fall, but it is not so frequently observed in the spring.

GENUS **PODILYMBUS** LESSON.

2. **Podilymbus podiceps** (LINN.).

Pied-billed Grebe; Dabchick; Hell Diver.

A common transient both in fall and spring, apparently occurring most numerous in April, September and October. A specimen in the writer's collection was taken on the Wooster Reservoir, September 30, 1892. Possibly a rare summer resident of the most secluded swamps and marshes, but there is no record of its breeding within the limits of the County.

SUBORDER CEPHI. LOONS AND AUKS.

FAMILY URINATORIDÆ. LOONS.

GENUS **URINATOR**. CUVIER.

3. **Urinator imber** (GUNN.).

Loon; Great Northern Diver.

Transient visitor; rare. Apparently most liable to be encountered after a severe spring storm, when occasionally one or two alight on Killbuck Creek. It is found sometimes also on the lakes and ponds, and even along the smaller streams. Seldom if ever have more than two been seen at one time. An adult in the collection of Mr. C. E. Bixler was taken in the central park of the County, May 2, 1888.

ORDER LONGIPENNES. LONG-WINGED SWIMMERS.

FAMILY LARIDÆ. GULLS AND TERNS.

SUBFAMILY LARINÆ. GULLS.

GENUS **LARUS**. LINNÆUS.4. **Larus argentatus smithsonianus** (COUES.).

American Herring Gull.

Very rare transient visitor. Appearing irregularly on ponds and the larger streams, generally singly or in pairs. A fine adult specimen in the collection of Mr. John Blandford, of Wooster, was shot near the town, from a flock of four, in the spring of 1873.

5. **Larus philadelphia** (ORD).

Bonaparte's Gull.

A rare and irregular transient visitor; noted most frequently in the spring. Individuals sometimes linger for several days along Killbuck Creek, or in the vicinity of the lakes and larger ponds. In the spring of 1879, four were seen and one shot on a mill pond near Wooster.

ORDER STEGANOPODES. TOTIPALMATE SWIMMERS.

FAMILY PELECANIDÆ. PELICANS.

GENUS **PELECANUS**. LINNÆUS.SUBGENUS **CYRTOPELICANUS**. REICHENBACH.6. **Pelecanus erythrorhynchos** (GMEL.).

American White Pelican.

Only a single specimen is known to have been taken. This is an adult in breeding plumage, and was shot in the summer of 1886, along Killbuck Creek in the southern portion of the County. No others were seen at the time. This bird was preserved and mounted for Dr. J. C. McMurray, of Shreve, from whom the above particulars of its capture were obtained. Dr. J. M. Wheaton mentions¹ but one specimen in breeding plumage as having been taken in the State.

¹ Geological survey of Ohio IV, 1882, p. 142.

ORDER ANSERES. LAMELLIROSTRAL SWIMMERS.

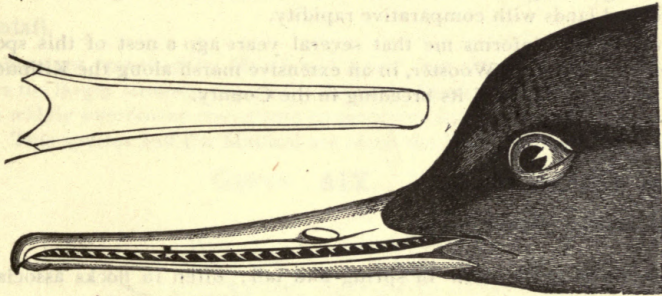
FAMILY ANATIDÆ. DUCKS, GEESE AND SWANS.

SUBFAMILY MERGINÆ. MERGANSERS.

GENUS **MERGANSER.** BRISSON.7. **Merganser americanus** (CASS.).

American Merganser ; Goosander.

A rare transient visitor. A female in the collection of Mr. Joseph Housekeeper, of Wooster, was killed by him along Killbuck Creek, March 22, 1893.



RED-BREASTED MERGANSER, NATURAL SIZE.

8. **Merganser serrator** (LINN.).

Red-breasted Merganser.

This is in this locality apparently the rarest of the three species of Mergansers. The writer's only record for the County is that of an adult female obtained at the Wooster reservoir, November 15, 1890.

GENUS **LOPHODYTES.** REICHENBACH.9. **Lophodytes cucullatus** (LINN.).

Hooded Merganser.

Transient visitor; of more frequent occurrence than either of the two preceding, though not very common. It is observed principally in the spring; males appearing to be oftener taken than females.

SUBFAMILY ANATINÆ. RIVER DUCKS.

GENUS **ANAS**. LINNÆUS.SUBGENUS **ANAS**.10. **Anas boschas** (LINN.).**Mallard.**

An abundant spring and fall transient. As is the case with several of the other Ducks that are found chiefly on the larger streams and bodies of water, this species is much more numerous during a very rainy season, the bottom-lands along the Killbuck being then extensively overflowed. The floods are more frequent in spring than in the fall; consequently the Ducks are at the former season decidedly more abundant. During a favorable autumn the Mallard is nearly as numerous as in spring, but if the fall be very dry, few or none are to be found. It occurs in spring chiefly in flocks, which in former years sometimes aggregated several thousand individuals; but at the present time flocks of over 150 are unusual. This diminution in numbers is due to the straightening of the course of Killbuck Creek, causing the water to recede from the flooded lands with comparative rapidity.

Mr. Housekeeper informs me that several years ago a nest of this species was found three miles south of Wooster, in an extensive marsh along the Killbuck. This is the only known instance of its breeding in the County.

11. **Anas obscura** (GMEL.).**Black Duck; Dusky Duck.**

A common transient both in spring and fall; often in flocks associated with Mallards.

SUBGENUS **MARECA**. STEPHENS.12. **Anas americana** (GMEL.).**Badpate; American Widgeon.**

A common transient visitor in spring, but rare in the fall. It is found principally along Killbuck Creek, not infrequently in large flocks, and often with Mallards and Black Ducks.

SUBGENUS **NETTION**. KAUP.13. **Anas carolinensis** (GMEL.).**Green-winged Teal.**

Transient visitor; tolerably common in the spring, but rare in autumn. It occurs in small flocks, alone or with other Ducks. It was formerly more common, and was found in much larger flocks.

SUBGENUS **QUERQUEDULA.** STEPHENS.**14. Anas discors** (LINN.).**Blue-winged Teal.**

A tolerably common spring transient; not so often observed in the fall. It is seen in small flocks, frequently with other Ducks.

GENUS **SPATULA.** BOIE.**15. Spatula clypeata** (LINN.).**Shoveller.**

A rare and irregular transient visitor. It is said to have been several times taken at Fox Lake. An adult male in full spring plumage, which was shot in the southern part of the County along Killbuck Creek, during the spring of 1886, is now in the collection of Mr. George Faber, of Wooster.

GENUS **DAFILA.** STEPHENS.**16. Dafila acuta** (LINN.).**Pintail.**

An abundant transient in March and April; not nearly so numerous in the fall. It prefers the larger streams, especially Killbuck Creek, and when the adjacent lowlands are widely overflowed sometimes congregates there in flocks of 100 to 150 individuals. This species and the Mallard are of all the Ducks the most abundant.

GENUS **AIX.** BOIE.

WOOD DUCK, MUCH REDUCED.

17. Aix sponsa (LINN.).**Wood Duck; Summer Duck.**

Summer resident; tolerably common in some portions of the County, but in others, though formerly of regular occurrence, is now quite rare. It arrives usually during the latter part of March, or early in April, and may be found breeding in cer-

SUBFAMILY ANATINÆ. RIVER DUCKS.

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GENUS **AIX.** BOIE.

WOOD DUCK, MUCH REDUCED.

17. **Aix sponsa** (LINN.).**Wood Duck; Summer Duck.**

Summer resident; tolerably common in some portions of the County, but in others, though formerly of regular occurrence, is now quite rare. It arrives usually during the latter part of March, or early in April, and may be found breeding in cer-

tain localities nearly every year. Its favorite haunts are the woods and swamps in the valley of the Killbuck, where in autumn, after a suitable season, flocks of twenty or thirty are sometimes to be seen. It remains until October or November.

SUBFAMILY FULIGULINÆ. SEA DUCKS.

GENUS **AYTHYA**. BOIE.

SUBGENUS **AYTHYA**.

18. **Aythya americana** (EVT.)

Redhead.

Now a rare transient visitor, although common many years ago, appearing regularly in spring in flocks along Killbuck Creek.

SUBGENUS **ARISTONETTA**. BAIRD.¹

19. **Aythya vallisneria** (WILS.)

Canvas-back.

Transient visitor; rare. It is seen singly or in pairs, sometimes with other species of Ducks, and chiefly on Killbuck Creek.

SUBGENUS **FULIGULA**. STEPHENS.

20. **Aythya affinis** (EVT.).

Lesser Scaup Duck; Raft Duck.

A common spring and fall transient, though never seen in large flocks. One of the first Ducks to appear in the spring, and among the latest to depart in autumn. It associates at times with Mallards, Pintails and Baldpates.

GENUS **GLAUCIONETTA**. STEJNEGER.

21. **Glaucionetta clangula americana** (BONAP.).

American Golden-eye.

A tolerably common though irregular spring transient; not observed in the fall. Apparently of most frequent occurrence in March, when it is often found on the smaller streams and ponds. An adult male in the collection of Mr. John Blandford was shot near Wooster, from a flock of four, in the spring of 1877. Another specimen, a female, in the writer's collection, was taken in the same vicinity on March 29, 1893.

¹This subgenus was unintentionally omitted from the A. O. U. Check List. (CF RIDGWAY, Manual of North American Birds, p. 102.)

GENUS **CHARITONETTA.** STEJNEGER.22. **Charitonetta albeola** (LINN.).

Buffle-head; Butter-ball.

A common transient visitor in March and April; much less frequently observed in the fall. It occurs singly and in small flocks, usually not accompanied by other species. Contrary to the experience of Dr. Wheaton,¹ it here apparently prefers the lakes and ponds to running water; this being possibly due to the comparatively small size of the streams.

Mr. C. E. Bixler has a female of this species now mounted, which was picked up, evidently much exhausted, on one of the main streets of Wooster, April 26, 1885.

GENUS **CLANGULA.** LEACH.23. **Clangula hyemalis** (LINN.).

Old Squaw.

A winter visitor only, and apparently quite rare. The single known Wayne County record is that of an adult male which was killed during the winter of 1886-7, in the extreme southwestern portion of the County, on Odell's Lake, by men who were there at work cutting ice. This specimen is in the collection of Dr. J. C. McMurray, who furnished the above particulars of its capture.

GENUS **ERISMATURA.** BONAPARTE.24. **Erismatura rubida** (WILS.).

Ruddy Duck.

A tolerably common transient on streams and ponds. Observed principally in the spring.

SUBFAMILY ANSERINÆ. GEESE.

GENUS **BRANTA.** SCOPOLI.25. **Branta canadensis** (LINN.).

Canada Goose.

A common spring and fall transient, observed chiefly in March and November. The flocks not infrequently alight within the County, probably for the purpose of feeding. A farmer in Clinton township found, on the morning of March 21, 1894, about fifty of these birds in his yard among his domestic geese. A Canada Goose now in the collection of Mr. George Faber is said to have been found one morning, in an alley of Wooster, alive but in an exhausted condition.

¹ Geological survey of Ohio IV, 1882, p. 534.

SUBFAMILY CYGNINÆ. SWANS.

GENUS **OLOR.** WAGLER.26. **Olor columbianus** (ORD).**Whistling Swan.**

A rare transient visitor. A fine adult specimen, now mounted and in the possession of Dr. J. H. Todd of Wooster, was shot from a flock of thirteen, at the northern end of Odell's Lake, November 12, 1892.

ORDER HERODIONES. HERONS, STORKS, IBISES, ETC.

SUBORDER HERODII. HERONS, EGRETS, BITTERNs, ETC.

FAMILY ARDEIDÆ. HERONS, BITTERNs, ETC.

SUBFAMILY BOTAURINÆ. BITTERNs.

GENUS **BOTAURUS.** HERMANN.27. **Botaurus lentiginosus** (MONTAG.).**American Bittern.**

A rare summer resident; sometimes tolerably common during the spring. It is apparently restricted to the more extensive swamps and marshes on the bottom lands, and to the vicinity of the larger bodies of water.

GENUS **ARDETTA.** GRAY.28. **Ardetta exilis** (GMEI.).**Least Bittern.**

A tolerably common summer resident; somewhat more numerous and more generally distributed during the spring migration. In the latter season it is occasionally observed along streams or ditches on the bottom-lands. In summer it is apparently confined to the ponds and lakes and to the secluded swamps. It was found to be not uncommon at Round and Long Lakes, in Holmes County, just south of the Wayne County line, on July 27, 1893. It undoubtedly breeds, though no nests have come to the notice of the writer.

Several years ago a Least Bittern was found dead on one of the streets of Wooster, the bird having been killed by flying against the telegraph wires.

SUBFAMILY ARDEINÆ. HERONS AND EGRETS.

GENUS ARDEA. LINN.

SUBGENUS ARDEA.



GREAT BLUE HERON MUCH REDUCED.

29. *Ardea herodias* (LINN.).

Great Blue Heron.

A tolerably common summer resident; found in all suitable localities throughout the County. It is said to breed regularly in the vicinity of Orrville, though much less abundantly than in former years. At the present time the few pairs that at last report were annually rearing their young in the deep woods about three miles from the town are the only survivors of a once extensive heronry. This is probably owing

to the encroachments of cultivation, and it is quite possible that none now resort to the locality. No information in regard to other nesting places is at present available. Adults appear to be much less numerous than immature birds.

SUBGENUS **HERODIAS**. BOIE.

30. Ardea egretta (GMEL.).

American Egret.

A rare and irregular visitor. It occurs singly or in small flocks along streams and about the lakes and ponds, in spring, summer and early autumn. It appears to be more frequently reported in spring than at any other season. Dr. J. M. Wheaton says of this species,¹ "I have no record of its occurrence in spring or in the breeding season." Dr. B. H. Warren also mentions² this bird as a straggler in late summer and autumn only.

SUBGENUS **BUTORIDES**. BLYTH.

31. Ardea virescens (LINN.).

Green Heron.

A common summer resident from April 23, to October 1. It nests in orchards or in low trees along the streams, but rarely, if ever, in colonies. When molested it will ordinarily build a second and even a third nest, often not far from the site of the first. Five eggs is the usual complement here and full sets have been obtained from May 18 to June 12.

A peculiar trait in the half fledged young, and one which seems not to have been mentioned except by Audubon,³ is the manner in which, upon the close approach of anyone to the nest, some or all of the brood leave it, walk cautiously out nearly to the extremity of the supporting branch, and there remain squawking loudly at every move made in their direction. At these times the parent birds are very frequently not seen, apparently considering their offspring capable of taking care of themselves.

The measurements of five nests are as follows:⁴

No.	Height	Depth.	Inside top diameter.	Inside middle diameter.	Outside top diameter.	Outside middle diameter.	Outside bottom diameter.	Width of rim.
1.....	8.00	3.00	9.00 x 7.00	.....	18.00 x 12.00	.....	9.00 x 6.00	5.00 x 1.50
2.....	6.00	2.50	6.00 x 5.00	.....	15.00 x 12.00	.....	8.00 x 6.00	.....
3.....	5.00	3.00	8.00 x 6.50	6.00 x 4.50	13.00 x 12.00	15.00 x 12.00	7.00 x 5.50	3.00 x 1.00
4.....	6.00	2.00	.....	.....	21.00 x 15.00	.....	.....	.....
5.....	5.00	2.50	6.00 x 5.00	.....	15.00 x 15.00	.....	.....	.....
Average..	6.00	2.60	7.25 x 5.88	.....	16.40 x 13.20	.....	8.00 x 5.83	4.00 x 1.25

¹ Geological Survey of Ohio IV, 1882, p. 501.

² Report on Birds of Pennsylvania, 1890, p. 59.

³ Ornithological Biography IV, 1838, p. 275.

⁴ All nest measurements are given in inches and hundredths; and the double dimensions which appear under single headings indicated maximum and minimum respectively.

ORDER PALUDICOLÆ. CRANES, RAILS, ETC.

SUBORDER RALLI. RAILS, GALLINULES, COOTS, ETC.

FAMILY RALLIDÆ. RAILS, GALLINULES AND COOTS.

SUBFAMILY RALLINÆ. RAILS.

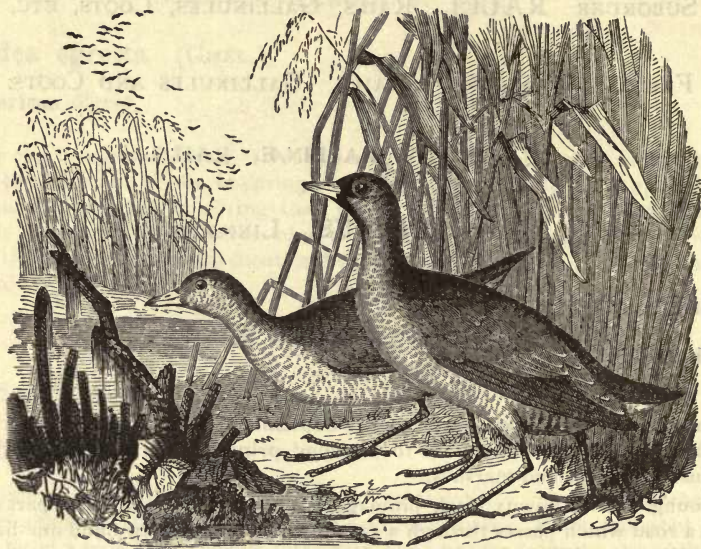
GENUS **RALLUS**. LINNÆUS.**32. Rallus elegans (AUD.).****King Rail.**

A rare summer resident from March to September; slightly more common in the spring than at other seasons. It is to be found principally in its breeding places in the extensive swamps and marshes.

A young bird in downy black plumage was captured in the latter part of June, 1888, on a road which passes through a swampy district about two and one-half miles south of Wooster. When first discovered, the parent bird (which was also secured), manifested much anxiety for the safety of its offspring, running again and again around the young one as though hoping thus to preserve it from harm. Both are now in the collection of Mr. J. Housekeeper.

33. Rallus virginianus (LINN.).**Virginia Rail.**

An abundant spring transient, chiefly in April; much less numerous in the fall. At these seasons it may be found in nearly all the large swamps and marshes of the County. Not ascertained to occur as a summer resident, perhaps from lack of opportunity for thorough investigation during that season, in localities suitable for the nesting of the species since it without much doubt breeds at least sparingly somewhere in this region.

GENUS **PORZANA.** VIEILLOT.SUBGENUS **PORZANA.**

SORA, MUCH REDUCED.

34. *Porzana carolina* (LINN):**Sora; Carolina Rail.**

An abundant transient in March and April; less common during its fall migration, which covers the latter part of August and the months of September and October. It has not been observed in summer, although it perhaps occurs. It is more numerous than either of the two preceding species, and frequents of course similar localities.

SUBFAMILY **GALLINULINÆ.** GALLINULES.GENUS **GALLINULA.** BRISSON.**35. *Gallinula galeata* (LICHT.):****Florida Gallinule.**

Rare; seen chiefly on the lakes and ponds, singly or in pairs. An adult female was captured alive in a barnyard eight miles north of Wooster, April 19, 1890, and was brought to town in a cage; but it lived only three days. It is now preserved in the writer's collection.

SUBFAMILY FULICINÆ. COOTS.

GENUS **FULICA**. LINNÆUS.36. **Fulica americana** (GMEL.).

American Coot.

A common spring transient, often in flocks; not so numerous in the fall. It has been observed, though rarely, on some of the lakes as late as June, from which it would appear to be possibly a summer resident.

On April 9, 1887, Mr. C. E. Bixler found, in Wooster, a Coot that had evidently been killed by striking against the side of the low building near which it was discovered.

ORDER LIMICOLÆ. SHORE BIRDS.

FAMILY SCOLOPACIDÆ. SNIPES, SANDPIPERS, ETC.

GENUS **PHILOHELA**. GRAY.37. **Philohela minor** (GMEL.).

American Woodcock.

Summer resident; tolerably common. It is generally distributed throughout the County, but is now in certain localities becoming rare. It appears in March; and migrates southward usually during the month of October, though occasionally a few may be found in favorable places as late as November.

It begins to breed soon after its arrival. On May 24, 1891, a brood of three young about a week old were surprised in a little open place among thickets along a mill-race. While the parent bird endeavored to attract attention to herself, the young birds proceeded to quickly secrete themselves. They all started away in different directions holding their wings in a perpendicular position, and uttering at the same time a peculiar peeping note. One caught and held in the hand for a few moments still continued its peeping, and when placed again upon the ground immediately sought safety in concealment among the undergrowth.

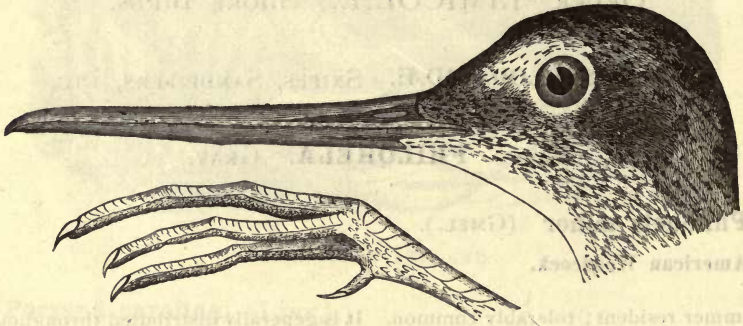
GENUS **GALLINAGO**. LEACH.38. **Gallinago delicata** (ORD).

Wilson's Snipe.

A common spring and fall transient; more numerous in the former season. It arrives generally about the middle of March (rather earlier than later), and is present in greatest numbers during the first three weeks of April; though somewhat irregular both in numbers and distribution. Individuals have sometimes been seen as late as May 15. Its favorite haunts are the marshes and damp meadows of the bottom lands.

GENUS **TRINGA**. LINNÆUS.SUBGENUS **ACTODROMAS**. KAUP.**39. *Tringa maculata* (VIEILL.).****Pectoral Sandpiper.**

Transient visitor; observed only in the vicinity of Orrville, where it is common during April, in the marshy meadows bordering the uncleared portions of Newman's Swamp. It is found usually in flocks of not more than twenty individuals; and is ordinarily quite tame and unsuspecting. It has not been noted in the fall. In Mr. Freeman's collection are several specimens of this species, and to him the writer is indebted for the above facts in regard to its occurrence.

GENUS **TOTANUS**. BECHSTEIN.SUBGENUS **GLOTTIS**. KOCH.

GREATER YELLOW-LEGS, NATURAL SIZE.

40. *Totanus melanoleucus* (GMEL.).**Greater Yellow-legs.**

A rare transient visitor; occurring more frequently in the fall than in the spring. A specimen was taken at the Wooster Reservoir, October 14, 1890.

41. *Totanus flavipes* (GMEL.).**Yellow-legs.**

Transient visitor; rare; probably an occasional summer resident. One was shot by Mr. E. N. Freeman, near Orrville, in the summer of 1889.

SUBGENUS **HELODROMAS**. KAUP.**42. *Totanus solitarius* (WILS.).****Solitary Sandpiper.**

A transient visitor; tolerably common in spring from the latter part of April to about the middle of May. The earliest date of its appearance is April 23 (1893) and none have been met with later than May 31. It generally occurs singly or in pairs,

but sometimes in companies of four or five, and frequents the vicinity of ditches, sluggish streams and stagnant pools. It has not been observed in the fall.

GENUS. **BARTRAMIA.** LESSON.

43. **Bartramia longicauda** (BECHST.).

Bartramian Sandpiper; Upland Plover.

A rare transient visitor; seen chiefly on the lowlands in the vicinity of water. One shot in the spring of 1891, at Newman's Swamp, is in the collection of Dr. E. B. Yager, of Orrville.

GENUS **ACTITIS.** ILLIGER.

44. **Actitis macularia** (LINN.).

Spotted Sandpiper.

Common summer resident from about the middle of April to the latter part of September. Extreme dates are April 13 and September 23. It frequents the lakes, ponds and streams of running water, breeding in the grass fields and the grain fieldst adjoining, or at most not far away. It is ordinarily to be found singly or in pairs, but sometimes in flocks of five to ten individuals.

FAMILY **CHARADRIIDÆ.** PLOVERS.

GENUS **ÆGIALITIS.** BOIE.

SUBGENUS **OXYECHUS.** REICHENBACH.

45. **Ægialitis vocifera** (LINN.).

Killdeer.

An abundant summer resident; noted from February 28 to November 30, though usually few remain later than November 1. It prefers as feeding grounds, especially in spring, the moist and even marshy meadows, although it may regularly be found in the upland fields. It frequently collects in small flocks before the breeding season but occurs in much larger companies during the latter part of the summer and in autumn. At Wooster, on July 11, 1892, a Killdeer apparently flying over the city at considerable altitude, was heard calling at 11:30 P. M.

The stomachs of two Killdeers examined contained red-legged grasshoppers (*Melanoplus femur-rubrum*), and scarabæid beetles (*Aphodius servil*), with remains of unidentifiable *Staphilinidæ* and *Curculionidæ*.¹

A killdeer shot November 10, 1892, along the margin of a small stream near Wooster is remarkable for the condition of one of its feet. The right tarsus of this specimen is very much shriveled below an enlargement of the bone near the ankle joint, this enlargement having the appearance of an old shot wound. By reason of this the tarsus and middle toe are together seven-eighths of an inch shorter than in the other foot. This apparently rendered the limb useless, for the bird, though able to

¹ Insect determinations are by Prof. F. M. Webster.

fly perfectly well, walked with much evident difficulty. The left tibia of another specimen, taken October 12, 1832, was found to be very crooked, and at a point near its proximal extremity so much enlarged as to indicate either a former fracture or similar severe injury. It had, however, completely healed, and the bone to all appearances was as strong as it had ever been.

ORDER GALLINÆ GALLINACEOUS BIRDS.

SUBORDER PHASIANI. PHEASANTS, GROUSE, PARTRIDGES, QUAILS, ETC.

FAMILY TETRAONIDÆ. GROUSE, PARTRIDGES, ETC.

SUBFAMILY PERDICINÆ. PARTRIDGES.

GENUS COLINUS. LESSON.

46. *Colinus virginianus* (LINN.).

Bob-white; "Quail."

A permanent resident; some years abundant much less numerous during others. In severe winters whole covies are sometimes found dead, having succumbed to cold and the scarcity of proper food. It is, moreover, not an infrequent circumstance to discover individuals that have been killed by flying against wires of the telegraph lines.

Except during part of the breeding season this species moves chiefly in flocks, frequenting preferably thickets, fence rows, patches of high weeds and similar places. It breeds generally in the fields, though occasionally in thickets on the edge of woodland; constructing sometimes a domed nest. The breeding season begins in May, and some years continues until September; a young bird just from the nest having been taken by Mr. C. E. Bixler on September 5, 1887. Two or three broods are probably reared.

SUBFAMILY TETRAONINÆ. GROUSE.

GENUS BONASA. STEPHENS.

47. *Bonasa umbellus* (LINN.).

Ruffed Grouse; Pheasant.

A permanent resident; tolerably common in some portions of the County, but rare in others. It was formerly abundant throughout all of this region, but during recent years has steadily diminished in numbers, coincident with the removal of the forests. It affects chiefly the more extensive woodlands, apparently preferring those portions with thick undergrowth, though it is at times seen even in small tracts of timber which afford little or no concealment. The males may be heard drumming from April to October.

On June 9, 1891, a family of fourteen downy young was surprised in thick woods. The parent bird, without manifesting the usual solicitude for the safety of its young, flew away into the forest, being neither again seen nor heard; thus for the time being apparently deserting her brood. The young, which were all huddled close together, immediately began to separate, and though closely watched, they were in less than one minute all effectually hidden.

FAMILY PHASIANIDÆ. PHEASANTS, ETC.

SUBFAMILY MELEAGRINÆ. TURKEYS.

GENUS **MELEAGRIS** LINNÆUS.

48. **Meleagris gallopavo** (LINN.).

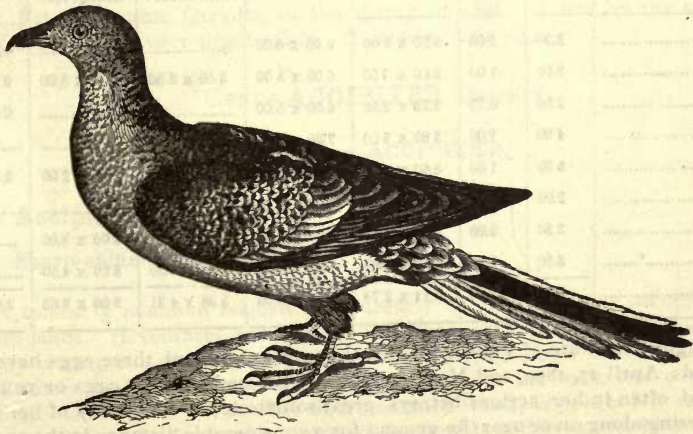
Wild Turkey.

Formerly a resident, breeding in suitable situations throughout the County. It was common until about 1865, since which time until 1878 it gradually became of less frequent occurrence. The last authentic date of its appearance in Wayne County seems to be December 31, 1878. On that day a scattered company of six was seen by Mr. Joseph Housekeeper, in the swampy thickets on the bottom-lands four miles south of Wooster; the birds having been first discovered by their tracks in the snow. From the condition of the ground it was evident that they had been in the vicinity for several days. They were followed by other hunters also, but were exceedingly wary, and only a single bird of the flock was finally secured.

ORDER COLUMBÆ. PIGEONS.

FAMILY COLUMBIDÆ. PIGEONS.

GENUS **ECTOPISTES** SWAINSON.



PASSENGER PIGEON, MUCH REDUCED.

49. *Ectopistes migratorius* (LINN.).

Passenger Pigeon.

This species is said to have been an abundant summer resident thirty years ago, at that time there having been a large roost in Newman's Swamp. By the clearing of large portions of the swamp the Pigeons were driven away, but until about 1873 single pairs were to be found breeding in the vicinity of Orrville. During the past twenty years the species has been of only casual occurrence, the most recent dates of capture being September 19, 1888, and August 30, 1892; both of single birds.

GENUS *ZENAIIDURA* BONAPARTE.50. *Zenaidura macroura* (LINN.).

Mourning Dove.

An abundant summer resident; remaining in part over winter according to the severity of the weather, being probably even in severe seasons to be found in sufficiently sheltered localities. It moves more or less in at least small flocks at all times of the year, but in fall and winter seldom to any extent otherwise. Four Mourning Doves were observed April 23, 1893, feeding in a meadow among a flock of domestic pigeons. The same four individuals were subsequently seen upon the ground in the midst of a flock of Red-winged Blackbirds.

This species begins nest-building early in April, and the breeding season continues at its height until June. The nest is placed almost anywhere: in trees or bushes, on stumps, rail fences, but only occasionally on the ground. Of fifty nests examined, only two were more than fifteen feet from the ground, while three-fourths of the whole number were not at a greater altitude than ten feet. An old Robin's nest is occasionally utilized as a foundation; and a Mourning Dove's nest was noted May 22, 1892, built upon the abandoned domicile of a Brown Thrasher.

The measurements of eight nests are as follows:

No.	Height	Depth.	Inside top diameter	Outside top diameter.	Outside middle diameter	Outside bottom diameter.	Width of rim.
1.....	3.50	1.00	3.00 x 3.00	6.00 x 5.00	.....	.....	1.00 x 0.75
2.....	3.00	1.00	3.00 x 2.50	6.00 x 5.00	3.50 x 3.50	5.00 x 5.00	2.00 x 0.75
3.....	2.50	0.75	2.75 x 2.50	6.00 x 5.00	.....	.....	2.00 x 0.75
4.....	4.00	1.00	3.00 x 3.00	7.00 x 6.00	.....	.....	.....
5.....	5.00	1.00	3.60 x 3.00	7.00 x 5.75	5.00 x 5.00	2.00 x 2.00	3.00 x 0.25
6.....	2.00	1.00	2.75 x 2.25	6.00 x 5.00	.....	.....	.....
7.....	3.50	2.00	3.50 x 3.00	9.00 x 6.00	6.00 x 4.25	5.00 x 3.00	.....
8.....	3.50	1.25	3.50 x 3.00	7.00 x 6.50	7.00 x 4.50	8.00 x 4.50	.....
Average ..	3.38	1.13	3.14 x 2.78	6.75 x 5.53	5.38 x 4.31	5.00 x 3.63	2.00 x 0.63

Two eggs constitute of course the usual complement, but three eggs have twice been found: April 27, 1890, and May 14, 1893. If the nest contain eggs or young the parent bird often in her actions betrays great solicitude for the safety of her household, fluttering along on or near the ground for a considerable distance in the endeavor to attract to herself the attention of the real or supposed intruder.

ORDER RAPTORES. BIRDS OF PREY.

SUBORDER SARCORHAMPHI. AMERICAN VULTURES.

FAMILY CATHARTIDÆ. AMERICAN VULTURES.

GENUS **CATHARTES** ILLIGER.51. **Cathartes aura** (LINN.).

Turkey Vulture.

A rare summer visitor, although apparently common in Holmes County, only a short distance farther south. It is seen in Wayne County generally singly or in pairs; and on several different occasions individuals have been taken, some of which are now preserved as mounted specimens.

SUBORDER FALCONES. VULTURES, FALCONS, HAWKS, ETC.

FAMILY FALCONIDÆ. VULTURES, FALCONS, HAWKS, ETC.

SUBFAMILY ACCIPITRINÆ. KITES, BUZZARDS, HAWKS, ETC.

GENUS **CIRCUS** LACÉPÈDE.52. **Circus hudsonius** (LINN.).

Marsh Hawk.

Resident; common in spring and fall, but less frequently observed at other seasons. It is found on upland as well as on the bottoms, though apparently preferring the latter as its hunting grounds. A nest of this species was discovered by Mr. E. N. Freeman, near Orrville, in the spring of 1891. It was on the ground in a meadow, and was a very slight affair. It contained six eggs.

GENUS **ACCIPITER** BRISSON.SUBGENUS **ACCIPITER**.53. **Accipiter velox** (WILS.).

Sharp-shinned Hawk.

A tolerably common resident; apparently of most frequent occurrence on the bottom-lands. It ventures occasionally into the towns, particularly in winter. On January 9, 1893, one made its appearance about the court-house at Wooster, in pursuit of the numerous House Sparrows that find a refuge in the nooks and corners of the building. On February 1, another Sharp-shinned Hawk, or possibly the same individual, was seen at the same place. Although no nests of this species have been found it undoubtedly breeds in the County.



COOPER'S HAWK, ABOUT ONE-THIRD NATURAL SIZE.

54. *Accipiter cooperii* (BONAP.).

Cooper's Hawk.

A common resident; oftener observed in spring than at any other season. In the winter it retreats to the most sheltered portions of the woods, preferably to the vicinity of evergreens, where such are available, and seldom during the severe season venturing far abroad.

Although this species has not actually been found breeding in the County, young unable to fly have been captured by Mr. Freeman.

On March 18, 1891, there was discovered on the ground in a sheltered situation among evergreens, an immature female Cooper's Hawk, which was from some cause other than a wound so weak that it was unable to fly or even to make more than the most feeble efforts to escape.

GENUS *BUTEO* CUVIER.55. *Buteo borealis* (GMEL.).

Red-tailed Hawk.

A common summer resident; much less numerous in winter. It breeds chiefly on the uplands, in heavy timber, though not infrequently near the edge of the woods in the vicinity of a human habitation or a well travelled road. The tree chosen appears to be generally a white oak (*Quercus alba*); though nests have been found in the pin oak (*Quercus palustris*); chestnut (*Castanea dentata*) and beech (*Fagus atropunicea*). The distance of the nest from the ground varies from sixty to ninety feet, but is generally between seventy and eighty-five feet. Old nests are frequently reoccupied, but not usually in successive seasons.

The measurements of the nest of this species given by Major Chas. E. Bendire¹ are apparently too small, unless these Ohio nests are exceptionally large. This discrepancy is especially noticeable in the depth of the inner cavity, as may be seen by reference to the dimensions of the following seven nests, measured *in situ*:

No.	Height	Depth.	Inside top diameter.	Inside middle diameter.	Outside top diameter.	Outside middle diameter.	Outside bottom diameter.
1.....	15.00	7.50	15.00 x 14.00	8.00 x 8.00	36.00 x 36.00	26.00 x 26.00	14.00 x 14.00
2.....	18.00	6.00	13.00 x 13.00	.....	33.00 x 27.00	.....	.....
3.....	26.00	5.00	9.00 x 9.00	6.00 x 6.00	43.00 x 24.00	33.00 x 24.00	30.00 x 18.00
4.....	18.00	4.50	12.00 x 12.00	9.00 x 9.00	36.00 x 17.00	30.00 x 12.00	14.00 x 8.00
5.....	18.00	4.00	10.00 x 9.00	7.00 x 6.00	42.00 x 21.00	30.00 x 15.00	9.00 x 6.00
6.....	15.00	6.00	12.00 x 12.00	.....	36.00 x 24.00	.....	.....
7.....	36.00	7.00	10.00 x 8.00	6.00 x 6.00	48.00 x 30.00	42.00 x 30.00	18.00 x 12.00
Average.....	20.86	5.71	11.57 x 11.00	7.20 x 7.00	39.14 x 25.57	32.20 x 21.40	17.00 x 11.60

The eggs are usually deposited during the latter half of March, but sometimes as late as the middle of April. Two or three eggs constitute a complement, the former number being somewhat the more common.

On April 21, 1891, in response to a vigorous rap upon a tall oak, a female Red-tail left her nest with such apparent haste and carelessness that she pushed out of the nest one of the young birds, which came crashing down through the branches to the ground, being of course killed by the fall. This young bird was only two or three days old, but its stomach was packed with remains of meadow mice (*Microtus pennsylvanicus*). In this locality, there being an abundance of other food, the Red-tailed Hawk seldom lays tribute upon the poultry yards.

56. *Buteo lineatus* (GMEL.).

Red-shouldered Hawk.

An abundant resident, but much less often seen during the winter than at any other season. It is in this region more numerous than any other Hawk, and for comparison with the Sparrow and Red-tailed Hawks, which rank next in abundance,

¹ Life Histories of North American Birds I, 1892, p. 210.

the total number of each observed in 1892 may be taken as a fair criterion. These figures are: Red-shouldered Hawk, 87; Sparrow Hawk, 37; Red-tailed Hawk, 27.

The Red-shouldered Hawk prefers the wooded bottom-lands; and while there is scarcely a tract of lowland woods of any considerable size which is not inhabited by one or even two pairs of *Buteo lineatus*, yet during the spring and summer it remains so closely within its haunts, that were these places not visited, the species might very readily be considered much less abundant than is really the case. In parts of the County where no bottom-lands exist, the Red-shouldered Hawk is apparently less numerous, though by no means rare.

The eggs, according to the writer's experience, are in this locality somewhat more commonly four than three in number. They are deposited generally between the fifth and the twentieth of April, the variation in different seasons being apparently not dependent upon the mildness or severity of the weather. Young in the nest have been observed as early as May 5. Eggs unmarked, or nearly so, occasionally occur, although these are somewhat the exception. Eggs in different stages of incubation are not infrequently found in the same nest.

This species, like the Red-tailed Hawk, manifests little inclination to defend its nest against a human intruder, but usually contents itself with retreating into the woods, or at most soaring about high overhead. In fact the writer has record of but a single instance where on the part of the parent bird any fierceness was exhibited. On this occasion, the female, after being driven from the nest only when the latter was nearly reached in climbing, persisted in making repeated and most vicious swoops at the disturber of her peace, until forced to desist by the approach below of someone with a gun. This nest contained one young bird just hatched, together with three eggs in which incubation was nearly completed. Under ordinary circumstances the female leaves the nest while the tree is being approached, but sometimes, especially if incubation be advanced, she is with considerable difficulty dislodged.

Of the nest of the Red-shouldered Hawk, the dimensions given by Major Chas. E. Bendire¹ are, as in the case of the preceding species, somewhat too small, unless these Ohio nests are to be considered exceptional. The measurements of ten nests are as follows:

No.	Height	Depth.	Inside top diameter.	Inside middle diameter.	Outside top diameter.	Outside middle diameter.	Outside bottom diameter.	Width of rim.
1.....	18 00	4 00	8.00 x 7.00	6.50 x 6.00	30.00 x 24 00	33 00 x 24 00	24.00 x 21.00	.....
2.....	28.00	3.00	10.00 x 7.00	7.00 x 5.00	24 00 x 18.00	30.00 x 18 00	18.00 x 12.00	.....
3.....	18 00	4 00	11.00 x 10.00	.....	33.00 x 27.00	27.00 x 18.00	26.00 x 12.00	.....
4.....	21 00	5 00	8.50 x 7.00	6.75 x 6.00	26.00 x 18.00	24.00 x 12.00	18.00 x 5.00	.....
5.....	22.00	4 00	7.50 x 7.50	6.00 x 5 50	24.00 x 22.00	31.00 x 28.00	24.00 x 12.00	.....
6.....	12 00	3 00	6.50 x 6.50	5.50 x 5.00	30.00 x 18.00	30.00 x 18.00	30.00 x 18.00	15.00 x 3 50
7.....	18.00	3.00	7.50 x 6.50	6.50 x 5.50	29.00 x 22.00	29.00 x 22.00	15.00 x 12.00	12.00 x 5.50
8.....	27.00	6.00	6.50 x 5.50	6.50 x 5.50	28.00 x 26 00	36.00 x 24.00	.....	.....
9.....	18 00	5 00	14 00 x 11.00	.....	33.00 x 24.00	33.00 x 24.00	18.00 x 12.00	.....
10.....	21.00	6 00	9.00 x 8.00	7.00 x 6.50	30.00 x 19.00	33.00 x 14.00	27.00 x 7.00	.....
Average...	20 30	4 30	8.85 x 7.60	6.47 x 5.63	28.70 x 21.30	30.60 x 20 20	22.22 x 12.33	.....

From a comparison of the above measurements with those of the nest of *Buteo borealis* it will be seen that while the nest of the latter is considerably greater in diameter, it is very little higher than the nest of *B. lineatus*, but has nevertheless a

¹ Life Histories of North American Birds I, 1892, p. 221.

somewhat deeper inner cavity. According to the writer's observation, the nest of *B. borealis* is, moreover, on the average much better finished inside, very frequently being lined with a quantity of grapevine bark closely matted together; while on the other hand some nests of *Buteo lineatus* are merely loose collections of sticks and twigs, with very little lining, and so nearly flat that the eggs seem in danger of being thrown from the nest.

The elm (*Ulmus Americana*) seems to be most frequently chosen as a site for the nest, but the following trees have been observed also thus utilized, viz.: maples (*Acer rubrum et Saccharum*), beech (*Fagus atropunicea*), walnut (*Juglans nigra*), oak (*Quercus alba*) and ash (*Fraxinus sp.?*).

In this locality the same nest appears to be seldom occupied two years in succession, even though the birds be not disturbed. Wherever the nest of a Red-shouldered Hawk is found, a nest of the Crow is reasonably certain to be situated in the immediate vicinity, a circumstance not observed in connection with any other species of Raptores, and which, considering the apparent animosity existing between the two species in question, is perhaps not easily explained.

In a nest from which eggs were taken April 24, 1892, there was noticed a small quantity of the claws and shells of crustaceans, probably the remains of a recent meal.

Two young Red-shouldered Hawks taken from the nest when about four weeks old, were, after a confinement of two months and a half, killed to serve as specimens. The stomach of one of these birds was found to be distended to its utmost capacity by a compact mass of excelsior packing, with which the floor of the cage had been covered. This indigestible material had evidently been taken into the stomach by having adhered to the food eaten, but how the bird would have disposed of the mass might be interesting to have determined.

57. *Buteo latissimus* (WILS.).

Broad-winged Hawk.

Rare; probably a summer resident. Only two records are at present available: that of an adult shot on the grounds of the State Agricultural Experiment Station at Wooster, July 4, 1893; and one seen about six miles north of this place on July 9 of the same year.

GENUS *ARCHIBUTEO* BREHM

58. *Archibuteo lagopus sancti-johannis* (GMEL.).

American Rough-legged Hawk.

A rare winter visitor. It has been observed usually during the months of March and April, and seldom anywhere excepting on the bottom-lands. It has not been noted later than April.

GENUS *AQUILA* BRISSON.

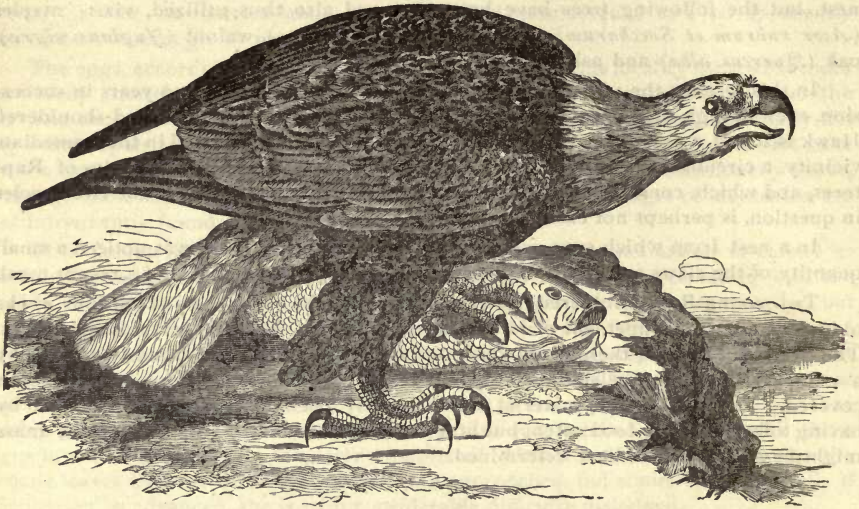
59. *Aquila chrysaetos* (LINN.).

Golden Eagle.

A rare and irregular winter visitor. The most recent, and so far as the writer is aware, the only authentic date of its capture with n the borders of the County, is

November 10, 1891. This bird, an immature male in fine plumage, was killed in a wooded ravine near the southern boundary of the County. by a farmer resident in the vicinity.¹

GENUS **HALIÆETUS** SAVIGNY.



BALD EAGLE, GREATLY REDUCED.

60. **Haliæetus leucocephalus** (LINN.).

Bald Eagle.

Undoubtedly in former years of more frequent occurrence, but at the present time it is only an occasional visitor. A specimen in the collection of Mr. House-keeper was taken not far from Wooster, about the year 1886. The large Hawks, and sometimes even the Turkey Vulture, are here not seldom mistaken for the present species; and an investigation of most of the tales of "eagles" seen, has proven them to be similar misidentifications.

SUBFAMILY **FALCONINÆ**. FALCONS.

GENUS **FALCO** LINNÆUS

SUBGENUS **RHYNCHODON** NITZSCH.

61. **Falco peregrinus anatum** (BONAP.).

Duck Hawk.

Very rare; a single specimen in the collection of Mr. E. N. Freeman is the only one known to have been taken in the County. This bird, a very fine adult, was secured early in the autumn of 1885, along a creek in the vicinity of Orrville. When first

¹ Auk IX, 1892, p. 200.

observed it was engaged in pursuing Mourning Doves, which were there quite numerous; its method being to remain quietly perched on a limb until one came within range, then giving chase, sometimes for a long distance. The Doves, however, being swift of flight, almost invariably succeeded in finally eluding their pursuer, for if too closely pressed, they would, while in full flight, suddenly close their wings and drop as if shot into the dense underbrush, whither of course the Hawk would not follow.

SUBGENUS *ÆSALON* KAUP.62. *Falco columbarius* (LINN.).

Pigeon Hawk.

Apparently rare; added to the list on the strength of a single mounted specimen in the collection of Prof. S. S. Milligan, of Wooster. In regard to this specimen there are unfortunately no data available, beyond the mere fact of its having been shot in the vicinity of the town. A Hawk seen October 16, 1891, on the bottom-lands along the Killbuck, was probably of this species, though its identity was not positively determined.

SUBGENUS *TINNUNCULUS* VIEILLOT.63. *Falco sparverius* (LINN.).

American Sparrow Hawk.

Abundant; with the exception of *Buteo lineatus* the most numerous Hawk. It is resident, excepting perhaps in very severe winters, but is always more frequent in spring and summer than at other seasons, the migrant portion returning north during the latter part of February or early in March.

Nidification takes place in April, and the young are hatched usually about the third week in May. The situation chosen for the nest is either a natural cavity or an old Woodpecker's excavation, usually from thirty-five to sixty-five feet from the ground. It is commonly in the dead top of a living tree, though sometimes in a tree wholly dead and even tottering from decay.

A Sparrow Hawk was captured November 9, 1893, in the building of the Wooster High School, where it had apparently flown for shelter. A bird of this species was observed on April 3, 1894, to pick up and fly away with a snake fully eighteen inches in length, and so heavy as to be with evident difficulty carried.

SUBFAMILY PANDIONINÆ. OSPREYS.

GENUS *PANDION* SAVIGNY.64. *Pandion haliaëtus carolinensis* (GMEL.).

American Osprey; Fish Hawk.

A rare summer visitor; perhaps in former years more common. It has occasionally been seen singly or in pairs, fishing on the larger bodies of water, but is not at the present time of regular occurrence.

SUBORDER STRIGES. OWLS.

FAMILY STRIGIDÆ. BARN OWLS.

GENUS **STRIX** LINNÆUS.65. **Strix pratincola** (BONAP.).

American Barn Owl.

Rare; observed only in winter. A specimen in the collection of the writer was shot by a farmer near Wooster, February 2, 1892. Another specimen now in the possession of Mr. George Faber, and obtained during the same winter, about two miles from where the other bird was killed, is much paler, the ground color of the plumage being almost white. These two are the only individuals known to have been taken in the County.

Although there are more or less numerous instances of the occurrence of this species in Michigan, Indiana, northern Pennsylvania, southern Ontario and southern Ohio, the only other published records for the last named State north of Columbus seem to be as follows: (1) Prof. A. J. Cook,¹ on the authority of Mr. E. L. Moseley, speaks of the Barn Owl as "common at Sandusky;" (2) Mr. A. Hall² mentions one taken at East Rockport near Cleveland; and (3) Mr. Carl Tuttle³ records the capture of a single specimen in Erie County.

FAMILY BUBONIDÆ. HORNED OWLS, ETC.

GENUS **ASIO** BRISSON.66. **Asio wilsonianus** (LESS.).

American Long-eared Owl.

A rare summer resident; tolerably common in fall and winter, though not generally so numerous as the next species. The only record of summer capture is a single specimen taken near Orrville in 1887, by Mr. Ellsworth N. Freeman, under circumstances which would suggest its having nested in the vicinity.

67. **Asio accipitrinus** (PALL.).

Short-eared Owl; Meadow Owl.

A common winter visitor; occurring singly, in pairs, or in small flocks. While it is perhaps a rare summer resident, the writer has no record of its presence during that season. The extensive meadows and swamps on the lowlands form its favorite hunting grounds, though it is found also on the uplands. On account of its low soaring flight when flushed by day it is an easy mark for hunters and the gun of the small boy, many being thus killed every winter. Stomachs of specimens examined contained only meadow mice (*Microtus pennsylvanicus*).

¹ Birds of Michigan, Edition I 1833, p. 67.

² Forest and Stream XXVI, 1886, p. 446.

³ Auk XII, 1895, p. 191.

GENUS **SYRNIUM** SAVIGNY.68. **Syrnium nebulosum** (FORST.).**Barred Owl.**

A common resident; frequents chiefly the wooded swamps and lowlands, in which localities it breeds.

On May 9, 1893, the writer obtained from a nest in the hollow top of the trunk of a huge beech, two young of this species, which were apparently about three and a half weeks old. From some unknown cause, one of them died a few days later, but the other was kept in confinement for more than a year. It was allowed the freedom of a small poultry house, the glass sides of which seemed to be to it a continual enigma. Nearly always when its abode was entered it would fly against the glass, only of course to fall to the ground. Its favorite perch was an old wire cage upon which were several boards so placed that they slanted upwards to about five feet above the ground, and on the highest part of this the Owl spent most of its time. Though not at all vicious, it nevertheless resented any familiarity, and vigorously protested against being touched. Its food consisted principally of raw beef, of which it consumed about six ounces per day. It was, however, quite fastidious as to diet and would touch no spoiled meat unless absolutely obliged by hunger. A Pied-billed Grebe in the incipient stages of decomposition, though offered to the Owl after a three days' fast, was reluctantly tasted, and only a portion of the neck eaten. Boiled meat was evidently not relished, being persistently refused.

GENUS **NYCTALA** BREHM.69. **Nyctala acadica** (GMEL.).**Saw-whet Owl.**

A rare resident; rather more frequently met with during the winter than at other seasons. Mr. E. N. Freeman states that it is sometimes not uncommon in winter in the vicinity of Orrville; and its nocturnal habits may to some extent account for its apparent rarity in other parts of the County. The capture of a summer specimen by the same gentleman indicates the probability of its nidification here, but actual proof of the same has not been obtained.

GENUS **MEGASCOPS** KAUP.70. **Megascops asio** (LINN.).**Screech Owl.**

Resident; the most common of the Owls. Almost every large tract of woodland shelters at least one pair, and the species may also be frequently found about the farm-houses, as well as on the outskirts of the towns.

Just at dusk on August 25, 1890, in a tract of bottom woodland, the writer found a Screech Owl with a charge of dust shot. It fell, but caught with its feet a limb and there clung until dislodged by a stick, when with wings spread it sailed down and took refuge in a partially decayed stump. Although seen to enter the stump, a close search of fully fifteen minutes was necessary to discover its hiding place. So closely had it pressed itself into a cavity in the wood that remaining motionless, and aided by its peculiar coloration, it was overlooked at least half a dozen times, though in plain sight all the while.

The stomach of a specimen examined contained remains of the white-footed mouse (*Peromyscus leucopus*), and of an unidentifiable Sparrow.

Of twenty-eight specimens from the County, fourteen are gray, thirteen are in the red phase, and one is in the rarer intermediate plumage. This last specimen has the general color of the upper parts mummy brown, the principal color markings below being reddish brown.

GENUS BUBO DUMÉRIL.



GREAT HORNED OWL, MUCH REDUCED.

71. *Bubo virginianus* (GMEL.).

Great Horned Owl.

A tolerably common resident; apparently most numerous during the fall and winter, being found in nearly all wooded districts of the County. It is here generally regarded as injurious, and is consequently killed whenever occasion offers. It is not infrequently captured alive, and is perhaps thus taken oftener than any other Owl.

GENUS **NYCTEA** STEPHENS.

SNOWY OWL, GREATLY REDUCED.

72. Nyctea Nyctea (LINN.).**Snowy Owl.**

A rare and irregular winter visitor. One caught near Wooster a number of years ago was for several months maintained in confinement, its chief diet consisting of raw liver. A fine adult specimen now in the possession of Mr. J. Blandford, was secured in the northern part of the County, in January, 1878. There are records of two others taken during the same winter, one of which was shot at night from the top of a chimney in Wooster. This specimen is now in the museum of Wooster University.

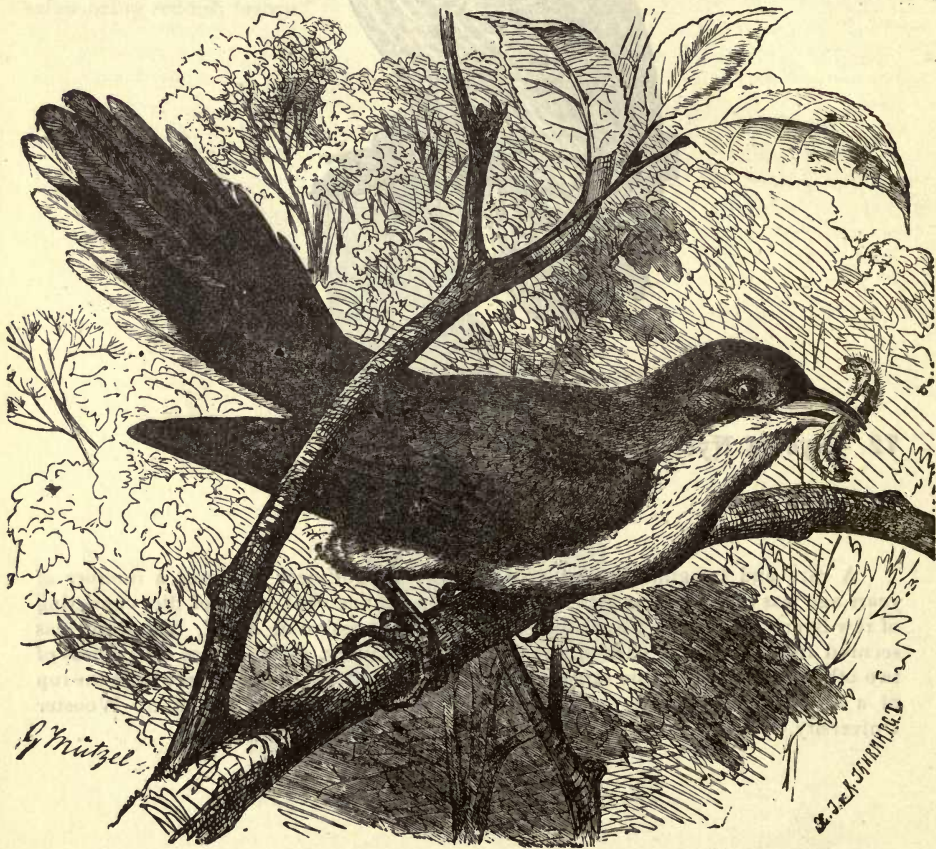
ORDER COCCYGES. CUCKOOS, ETC.

SUBORDER CUCULI. CUCKOOS, ETC.

FAMILY CUCULIDÆ. CUCKOOS, ANIS, ETC.

SUBFAMILY COCCYGINÆ. AMERICAN CUCKOOS.

GENUS **COCCYZUS** VIEILLOT.



YELLOW-BILLED CUCKOO, ONE-HALF NATURAL SIZE.

73. *Coccyzus americanus* (LINN.).

Yellow-billed Cuckoo.

A common summer resident. It appears in May, the tenth of this month being the earliest date; and though ordinarily not much observed after the middle of September, has been noted as late as October 19, (1892).

It frequents principally the woods, thickets and orchards, breeding usually in one of the two last named localities. Three or four eggs constitute in this vicinity the normal complement. The breeding season continues commonly from the first of June to the middle of July, but the following exceptional dates have been noted. A nest containing four perfectly fresh eggs was discovered on August 17, 1890; and on September 13 of the same year, another nest containing two unincubated eggs was found not over forty feet from the one taken a month before.

Four nests measure respectively as follows:

No.	Height.	Depth	Inside top diameter.	Inside middle diameter.	Outside top diameter.	Outside middle diameter.	Outside bottom diameter.	Width of rim.
1.....	4.00	1.75	3.50 x 3.25	3.00 x 3.00	6.50 x 6.00	5.50 x 5.50	5.00 x 3.00	2.00 x 0.50
2.....	5.50	1.50	3.50 x 3.00	2.75 x 2.50	8.00 x 6.00	7.50 x 5.50	3.50 x 3.50	3.00 x 0.50
3.....	3.00	1.50	3.25 x 3.25	3.00 x 2.50	8.00 x 5.00	6.50 x 4.00	5.00 x 2.75	2.50 x 0.38
4.....	3.50	1.00	3.50 x 3.50	.....	8.00 x 8.00	.....	.....	.....
Average..	4.00	1.44	3.44 x 3.25	2.92 x 2.00	7.63 x 6.25	6.50 x 5.00	4.50 x 3.08	2.50 x 0.46

On June 10, 1891, a Yellow-billed Cuckoo was found dead upon the front porch of a house on the outskirts of Wooster. Appearances indicated that the bird had been killed by flying against the door, as examination revealed the absence of any wound, and dissection showed it to be apparently in healthy condition.

The peculiar notes of this species are occasionally heard at night.

74. *Coccyzus erythrophthalmus* (WILS.).

Black-billed Cuckoo.

A transient visitor; sometimes tolerably common in the spring, but apparently rare in autumn. From the fact that this species is so common a summer resident in parts of the State, it may seem strange that it should not be so listed in this locality, but the most careful search has failed to reveal its presence, except from May 9 to 22, and on September 27, 1891. Future investigations may perhaps show it to be present during the breeding season.

SUBORDER ALCYONES. KINGFISHERS.

FAMILY ALCEDINIDÆ. KINGFISHERS.

GENUS *CERYLE* BOIE.

SUBGENUS *STREPTOCERYLE* BONAPARTE.

75. *Ceryle alcyon* (LINN.).

Belted Kingfisher.

A common summer resident; occurring along all the larger streams. It arrives from the south in March; remaining until by the freezing of the watercourses in the

fall it is unable to obtain its food. During open winters a few usually remain throughout the entire season. It is ordinarily not seen far from water, and for nesting purposes it selects the bank of a stream. The eggs are deposited usually before the middle of May, and are, when the complement is complete, six or seven in number. Occupied nests have been observed from May 17 to June 15; that on the former date containing eggs one-fourth incubated, that on the latter five fully feathered young. The young in this nest were ranged in a row across the chamber at the inner extremity of the burrow, and were crowded close together, all facing the entrance, thus from without presenting quite an odd appearance. The burrow is usually three or four feet in length, sometimes straight, but generally diverted horizontally at a greater or less angle.

The measurements of four nests result as follows:

No.	Total length of burrow.	Diameter of burrow.	Length of chamber.	Width of chamber.	Height of chamber.
1.....	48.00	4.00 x 3.00	13.0	12.00	5.00
2.....	56.00	3.50 x 3.00	10.00	8.75	6.00
3.....	41.00	4.00 x 3.50	6.75	12.00	7.00
4.....	57.00	3.25 x 3.00	9.10	11.00	6.00
Average.....	50.50	3.69 x 3.13	9.69	10.94	6.00

In all the nests that have been examined, the eggs were deposited in the enlargement at the extremity of the passage, upon a quantity of fish bones, fish scales, and sometimes remains of crustaceans. The Kingfisher's habit of constructing its nest of twigs, grass, feathers, etc., mentioned by Wilson, Gentry and some other writers, seems to be the exception rather than the rule, or at least to a considerable degree a local occurrence.

Madame *Ceryle* is, when sitting, difficult to dislodge from her nest, and snaps viciously at anything that comes within her reach. A lighted match fastened to the end of a stick and thrust into the nest is invariably picked at until extinguished. She usually remains while the digging out of the nest is in progress, attempting to escape only as the chamber containing the eggs is neared, sometimes even then refusing to leave until removed by force.

ORDER PICI. WOODPECKERS, WRYNECKS, ETC.

FAMILY PICIDÆ. WOODPECKERS.

GENUS *DRYOBATES* BOIE.

76 *Dryobates villosus* (LINN.).

Hairy Woodpecker.

A common resident; more numerous in fall and winter than at other seasons. There is in this locality apparently a remarkable predominance of females, since out of a series of fourteen specimens, taken principally during fall and winter, only three are

males; and this ratio seems to be fairly constant so far as observation of living birds can determine. The favorite haunts of this species are, in fall and winter, the woods of the bottom-lands, but where such places are not available it frequents fully as numerous the upland forests; being of regular occurrence throughout the County. It is not uncommonly found along fencerows in the open country, in thickets, or even orchards, but is scarcely ever to be seen in the towns, except during the late fall and winter months. Both this and the following species have at times been noticed to repeatedly perch on limbs crosswise, after the manner of Sparrows or other passerine birds.

The Hairy Woodpecker breeds generally in the most secluded portions of the forests. A nest found May 3, 1891, in moist woodland along Killbuck Creek, was in the solid living wood of a swamp hickory, (*Hickoria minima*). It contained young about two-thirds fledged.



DOWNY WOODPECKER, NATURAL SIZE.

77. *Dryobates pubescens* (LINN.).

Downy Woodpecker; "Sapsucker."

An abundant resident, though apparently less common in spring and summer than at other seasons. It occurs everywhere, but seems to affect most numerous, especially in winter, the woods of the bottom-lands. At that season it is frequently found associated with the following species: *Certhia familiaris americana*, *Sitta carolinensis*, *Parus bicolor*, *Parus atricapillus*, *Regulus satrapa*, and *Dryobates villosus*.

Like the last species, the Downy Woodpecker is not often seen in the towns, except during the fall and winter months. It breeds usually in May, exhibiting as to locality a decided preference for the woods on the bottoms, where such lands exist, although it sometimes nests in orchards.

Most authors mention the complement of eggs deposited by the Downy Woodpecker as from four to six; of a larger number the only record that the present writer has been able to discover being by Worthington,¹ who secured one set of seven eggs. A set also of seven was collected by the writer near Wooster, May 22, 1891. The nest was situated in a tract of woods on the swampy lowlands along Killbuck Creek. It was excavated twenty-four feet from the ground in the outer (or under) side of the remaining stub of a dead limb. It was much narrowed towards the bottom,

¹Ornithologist and Oölogist VI, 1881, p. 43.

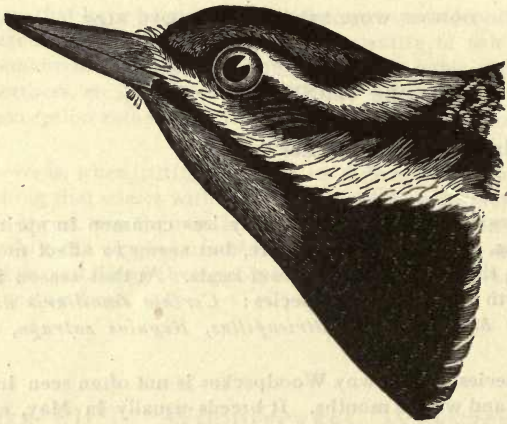
apparently to avoid breaking into an abandoned Woodpecker's excavation from which even then it was separated by only a very thin partition. Its dimensions are given herewith:

Depth from entrance.	Diameter of entrance.	Diameter at top.	Diameter at entrance.	Diameter at bottom.
6.00	1.25	3.00 x 2.50	3.50 x 3.25	3.50 x 2.00

The eggs from this nest exhibit a remarkable difference in size, as will be seen from the following measurements (in inches), viz.: .81 x .65, .80 x .63, .77 x .63, .77 x .62, .71 x .59, .67 x .53, .55 x .49. They were all in varying stages of incubation; the four largest being approximately one-half incubated; the fifth in size, about one-fourth; and the two smallest nearly fresh. This variation in the incubation of eggs in the same nest has been, in the case of *Dryobates pubescens*, observed by the writer in also another instance, but so far at least as may be inferred from the accounts of the nesting of the species published by other observers, it does not seem to be a common occurrence. Both sexes assist in the duties of incubation.

Specimens of the Downy Woodpecker, as well as of some other birds from this locality, are frequently found to have the plumage of the under parts much soiled from contact with the bark of the trees.

GENUS *SPHRYAPICUS* BAIRD.



YELLOW-BELLIED SAPSUCKER, NATURAL SIZE.

78. *Sphryapicus varius* (LINN.).

Yellow-bellied Sapsucker.

A common spring transient, but apparently rare in autumn. It is not usually observed in winter, but a specimen was taken by Mr. W. E. Henderson, near Wooster, January 1, 1890. It appears generally between the second and eighth of April, and commonly disappears before the middle of May. It has been noticed in fall only twice: September 27, 1891, and October, 2, 1892. It seems in this locality to prefer the bottom woodlands, where it is sometimes seen in company with other Woodpeckers.

On July 12, 1891, the writer discovered in a wooded ravine near Wooster, four immature birds of this species, which had without reasonable doubt been reared in the immediate vicinity. An adult was also on the same date seen in a neighboring orchard. This is apparently the first definite record of the breeding of the species in Ohio, although Wheaton mentions¹ having observed in May a pair of these birds at work upon a nest which was subsequently deserted.

In spring the drumming of the Yellow-bellied Sapsucker may usually be easily recognized by the following peculiarities. Four or five taps given in quick succession are followed by a short pause, this being soon succeeded by two short quick taps; then another pause, and two more taps in somewhat less rapid succession than the first; followed by yet another pause, and two additional taps still a little slower. This is sometimes slightly varied with regard to the number of taps; and occasionally also the latter part consists only of single quick taps with an increasing interval toward the last. The two most common forms may be crudely represented as follows:

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GENUS **CEOPHLÆUS** CABANIS.

79. **Ceophlæus pileatus** (LINN.).

Pileated Woodpecker.

This was formerly a common species in the heavily timbered lands throughout most of the County, but with the clearing of the extensive forests it gradually disappeared, having been very rare for the past twenty-five or thirty years. Mr. Joseph Housekeeper informs me that the last specimen taken in the County, so far as he is aware, was shot about 1883.

GENUS **MELANERPES** SWAINSON.

SUBGENUS **MELANERPES**.

80. **Melanerpes erythrocephalus** (LINN.).

Red-headed Woodpecker.

An abundant summer resident from the last of March until October; a few sometimes remain during mild winters. It frequents forests, orchards and fields, nesting in almost any suitable situation. The dead top of any large tree, or any apple tree with a large dead limb, is pretty sure to sooner or later contain the nest of a Red-headed Woodpecker. The first mentioned situation is often tenanted by both this species and the Flicker, the nests being sometimes in the same limb, and within a few feet of each other. But in even this close proximity the birds live in apparently perfect harmony.

The breeding season continues usually from about the middle of May until the first of July, being at its height during the last week in May and the first week of June. The number of eggs is usually four or five, not often six. They are sometimes found to be in varying stages of incubation. The nests which have been observed ranged from twelve to seventy feet from the ground.

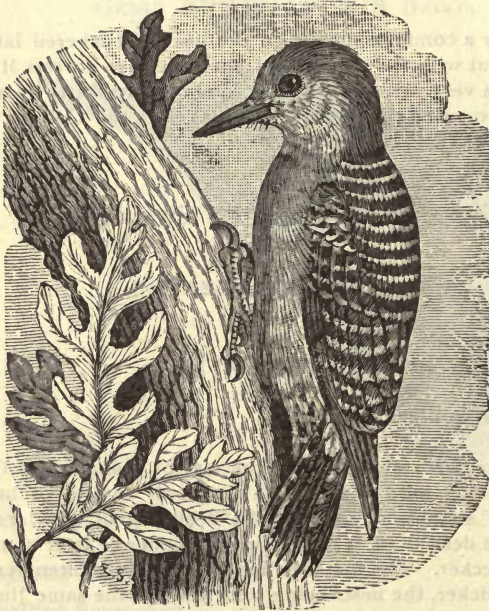
¹ Geological Survey of Ohio IV, 1882, p. 399.

The measurements obtained from four nests are herewith given:

No.	Total depth.	Diameter of entrance.	Diameter at entrance.	Diameter at middle.	Diameter at bottom.
1.....	10.00	2.25 x 2.13	4.00 x 2.25	4.00 x 4.00	4.63 x 3.50
2.....	10.50	1.75 x 1.63	4.00 x 2.00	4.00 x 4.00	4.50 x 4.00
3.....	11.00	2.00 x 1.38	3.50 x 3.00	5.00 x 3.50	4.00 x 2.50
4.....	11.50	2.25 x 1.50	3.75 x 3.50	5.00 x 4.00	4.50 x 3.38
Average.....	10.75	2.06 x 1.66	3.81 x 2.69	4.50 x 3.88	4.41 x 3.35

The parent bird is under ordinary circumstances easily dislodged from the nest, but occasionally is quite obstinate in this particular. The Red-headed Woodpecker sometimes attacks other birds which approach too closely its nesting place. On one occasion three of these Woodpeckers were observed to utterly rout a Red-tailed Hawk.

SUBGENUS CENTURUS SWAINSON.



RED-BELLIED WOODPECKER, REDUCED.

81. *Melanerpes carolinus* (LINN.).

Red-bellied Woodpecker.

A tolerably common resident, but most regularly observed during fall and winter; frequenting then more open woodland than during the breeding season. It is

usually very wild and wary, especially when in the upland woods, remaining chiefly in the tops of the trees. It is not often found in company with other species.

The only nest that has fallen under the writer's observation was discovered April 2, 1893, in the midst of a large forest. The excavation was near the top of a sugar maple (*Acer Saccharum*), in a dead portion of the trunk, and bore evidence of recent operation, as the ground at the foot of the tree was plentifully strewn with chips. The male was at first seen passing in and out of the opening, but upon his discovery of the presence of spectators, he retreated into the nest, and no amount of noise or pounding on the tree could induce him to again venture farther than the entrance.

GENUS **COLAPTES** SWAINSON.

82. *Colaptes auratus* (LINN.).

Flicker.

A permanent resident, but less abundant in winter than at other seasons. Most of those that remain through the cold weather retire to the swamps and woods along the streams, where natural cavities and old Woodpecker's excavations furnish suitable abodes. At other times the species is to be found almost anywhere, though apparently only casually in the towns.

Nesting sites are chosen with apparent indifference, though not usually above thirty feet from the ground. Mating takes place about the middle of April, and the six or seven eggs are deposited usually between the tenth of May and the first of June. The female occasionally, but not commonly, incubates so closely that it is necessary to use force to remove her from the nest.

The measurements obtained from four nests are as follows:

No.	Total depth.	Diameter of entrance.	Diameter at entrance.	Diameter at middle.	Diameter at bottom.
1.....	14.00	3.00 x 2.50	.....	.....	.....
2.....	13.00	2.75 x 2.38	.....	.....	.....
3.....	18.00	2.00 x 2.01	.....	.....	.....
4.....	7.00	4.00 x 4.00	6.00 x 5.00	5.00	5.00 x 4.00
Average...	13.00	2.91 x 2.72	.....	.....	.....

ORDER MACROCHIRES. GOATSUCKERS, SWIFTS, ETC.

SUBORDER CAPRIMULGI. GOATSUCKERS, ETC.

FAMILY CAPRIMULGIDÆ. GOATSUCKERS, ETC.

GENUS **ANTROSTOMUS** GOULD.

83. *Antrostomus vociferus* (WILS.).

Whip-poor-will.

A tolerably common summer resident from May until September. It frequents almost exclusively the dry upland woods, being seldom found on the lowlands.

On May 29, 1892, an individual of this species was heard singing under bright sunlight at 3:30 P. M. Other than on this occasion it has not been heard during daylight later than 4 A. M.

GENUS **CHORDEILES** SWAINSON.

84. **Chordeiles virginianus** (GMEL.).

Nighthawk; Bull-bat.

A common summer resident from May 7 to September 14. It is more numerous during migrations, especially in the fall, though there have been here observed no large flights such as elsewhere frequently occur. It may occasionally be seen at dusk on spring evenings, in the streets and yards of the town, whither it appears to have ventured in pursuit of food. It is often abroad in bright sunlight, usually in the afternoon, but is seldom seen in company with other birds.

A single egg of this species was found on June 20, 1893, in a strawberry patch on the outskirts of Wooster. This nest having been disturbed, a clutch of two eggs was later discovered in the same situation. Although these are the only actual records obtained, the Nighthawk undoubtedly breeds regularly in this locality.

SUBORDER CYPSELI. SWIFTS.

FAMILY MICROPODIDÆ. SWIFTS.

SUBFAMILY CHÆTURINÆ. SPINE-TAILED SWIFTS.

GENUS **CHÆTURA** STEPHENS.

85. **Chætura pelagica** (LINN.).

Chimney Swift.

An abundant summer resident; especially numerous in the towns. The earliest date of its spring arrival is March 28 (1890), the latest April 21 (1892), but it usually appears about the middle of April. The dates of its disappearance in fall range between October 1 and October 7.

From the last part of April until the twentieth of May, each year, the Swifts congregate in Wooster almost daily, to roost in a chimney of the court-house. One hundred and fifty to two hundred are usually seen at first, the number being gradually augmented until about May 10, after which time it generally soon begins to decrease. Sometimes as many as 1,000 birds have been seen in the vicinity of the court-house, but this number has probably never been exceeded. While their usual time of congregating is between six and seven o'clock in the afternoon, they have not infrequently been observed entering the chimney during the middle of the afternoon. Less commonly are they to be seen in numbers about the chimney during the forepart of the day, but on a few occasions they have been observed entering even as early as half-past seven or eight A. M. The darkening of the sky by an approaching thunder-shower, especially if in the afternoon, generally causes them to assemble and enter their roosting place; and frequently they do not emerge after the storm has passed.

They always resort to a particular large six-flued chimney, one of the flues of which is very often in use. They do not, however, seem to be in the least annoyed by the smoke which issues from this part of the chimney, but drop unconcernedly into

the unused portions. For a short time in the spring they sometimes have recourse to the large chimney of a church, but as their numbers increase this is promptly abandoned for the presumably more commodious one of the court-house close at hand. Occasionally during the summer (from June to September), the Swifts to the number of one or two hundred may be seen to enter the court-house chimney, but this does not appear to be a common or regular occurrence.

The breeding season is in June; and four or five eggs constitute the usual complement. The female when frightened from the nest, instead of leaving entirely, very frequently retreats down the chimney, being with considerable difficulty induced to reappear.

SUBORDER TROCHILI. HUMMINGBIRDS.

FAMILY TROCHILIDÆ. HUMMINGBIRDS.

GENUS TROCHILUS LINNÆUS.

SUBGENUS TROCHILUS.

86. *Trochilus colubris* LINN.

Ruby-throated Hummingbird.

An abundant summer resident. It appears in spring with considerable regularity between the first and the tenth of May, and remains until September, not, however, being common after the first of this month. It is very partial to the flowers of the buckeye (*Æsculus glabra*), and while this tree is in bloom, during the early part of May, assembles often in numbers wherever these favorite flowers are to be found.

In this locality the Hummingbird nests chiefly in June and the early part of July, though eggs have been taken by Mr. Henderson as late as July 24. An apple orchard is apparently the preferred situation. If the first nest be disturbed a second is often if not always constructed.

As of possible interest in connection with the statements of Mr. Bradford Torrey¹ in regard to the absence of the male from the nest during the period of incubation and of rearing the young, it may be stated that on two occasions the writer has observed the male at the nest: On June 26, 1892, when a male was seen with the female about a nest which contained eggs; and on July 4, 1892, when the male alone was noted at another nest which was occupied by two young birds apparently but two or three days old.

Early in the morning on June 1, 1892, a Hummingbird was noticed fluttering up and down against the plate glass of a large show window on one of the main business streets of Wooster, and apparently attempting to enter the window as if unaware of the impenetrable nature of the glass.

¹The Footpath Way, 1893, pp. 135 *et seq.*

ORDER PASSERES. PERCHING BIRDS.

SUBORDER CLAMATORES. SONGLESS PERCHING BIRDS.

FAMILY TYRANNIDÆ. TYRANT FLYCATCHERS.

GENUS **TYRANNUS** CUVIER.87. *Tyrannus tyrannus* (LINN.).

Kingbird.

An abundant summer resident. Its earliest recorded spring arrival is April 19 (1891), but its average date is about two weeks later. Few are to be seen after the first of September, though individuals have been observed to linger until October 3.

In this locality this species is apparently late in nesting, for with one exception a complement of eggs has not been noted before June 20, but fresh eggs have been taken in July. A set of three secured on July 7, 1891, contained eggs varying from fresh to three-eighths incubated. A large proportion of the nests found have been in apple orchards.

The measurements of two nests are as follows :

No.	Height.	Depth.	Inside top diameter.	Inside middle diameter.	Outside top diameter.	Outside middle diameter.	Outside bottom diameter.	Width of rim.
1.....	3.25	1.75	3.00 x 2.75	2.75 x 2.50	4.50 x 4.00	5.50 x 4.25	4.00 x 4.00	0.88 x 0.50
2.....	3.00	2.00	3.00 x 2.75	2.90 x 2.60	5.75 x 4.50	5.75 x 4.50	4.50 x 3.75	1.25 x 0.60

The Kingbird is one of the earliest birds to be astir in the morning, the notebook of the writer showing that this species was, on March 27, 1890, first heard at 3:30 A. M.

That the Kingbird possesses remarkably acute vision may be inferred from the following circumstance. On June 5, 1892, while the writer was strolling along the railroad track, which is here situated near the stream of the Killbuck, a Kingbird was seen to start from a telegraph pole and fly swiftly in a direct line to capture an insect so small as to be invisible to the human eyes only twenty-five feet away, yet by actual measurement the distance from which this bird had espied its victim was one hundred and fifty feet.

This species was observed feeding upon berries of the dogwood (*Cornus florida*), on July 31, 1892.

GENUS **MYIARCHUS** CABANIS.88. *Myiarchus crinitus* (LINN.).

Crested Flycatcher.

A tolerably common summer resident; much more numerous in the spring. It arrives usually between the first and the tenth of May, but the earliest date is April 24 (1892). Though not common after the first of September, it has been observed as late as October 2. While it is found during the spring chiefly in the woodlands, it appears to resort principally to orchards for the purpose of breeding.

GENUS **SAYORNIS** BONAPARTE.89. *Sayornis phœbe* (LATH.).*Phœbe.*

An abundant summer resident. The earliest date of its spring arrival is March 17 (1894); the latest, March 30, (1890). It remains until some time in October, the date on which it has been latest observed being October 19 (1892).

Nidification is begun in April, and incompleated nests have been noted as early as April 9 (1893). A second brood is commonly reared in June. The supporting timbers of bridges are the favorite nesting sites, and most of the nests found have been thus situated. A ledge of rocks or an old stone quarry is, however, by no means an uncommon location.

Four nests present the following measurements:

No.	Height.	Depth.	Inside top diameter.	Inside middle diameter.	Outside top diameter.	Outside middle diameter.	Outside bottom diameter.	Width of rim.
1.....	8.50	2.00	2.75 x 2.88	1.25 x 1.18	5.00 x 4.00	5.50 x 4.25	5.00 x 4.00	2.25 x 0.25
2.....	6.00	1.56	3.50 x 2.75	2.38 x 2.25	4.50 x 3.75	5.00 x 3.00	2.00 x 2.00	1.50 x 0.50
3.....	3.00	2.00	2.75 x 2.38	2.38 x 2.25	4.25 x 3.50	5.25 x 4.25	4.25 x 3.00	1.00 x 0.25
4.....	4.50	1.75	2.50 x 2.00	2.38 x 1.88	5.00 x 4.50	5.75 x 5.25	7.00 x 4.75	1.75 x 0.25
Average	4.25	1.83	2.88 x 2.38	2.10 x 1.88	4.69 x 3.94	5.38 x 4.19	4.56 x 3.44	1.63 x 0.31

GENUS **CONTOPUS** CABANIS.SUBGENUS **CONTOPUS.**90. *Contopus virens* (LINN.).*Wood Pewee.*

A summer resident; abundant. Its dates of spring arrival range from May 7 to May 14, and it remains until September, not having been noted, however, later than the twenty-first of this month. Although early in spring frequenting especially the woodlands, it is to be found breeding chiefly in the numerous apple orchards. In fact, it is, under ordinary circumstances, rather the exception to find an apple orchard of any considerable size which does not possess its pair of these birds. So far as the writer's observations extend, only one pair occupy any single orchard.

The nest is rarely more than fifteen feet from the ground, and is often much less. The number of eggs is usually three, but occasionally only two. The height of the breeding season seems to be about the twenty-fifth of June,—eggs having been taken from June 14 to July 5.

The dimensions of five nests are as follows:

No.	Height.	Depth.	Inside top diameter.	Inside middle diameter.	Outside top diameter.	Outside middle diameter.	Outside bottom diameter.	Width of rim.
1.....	1.75	1.25	2.00 x 1.75	1.85 x 1.75	3.00 x 2.50	3.25 x 3.00	3.00 x 2.50	0.65 x 0.35
2.....	1.50	1.50	2.00 x 1.85	2.15 x 2.00	3.15 x 2.60	3.35 x 3.00	3.15 x 2.75	0.80 x 0.35
3.....	1.05	0.85	1.85 x 1.65	1.80 x 1.60	3.50 x 2.25	3.50 x 2.35	3.50 x 2.10	1.00 x 0.35
4.....	1.40	0.90	2.00 x 1.75	2.25 x 1.80	2.85 x 2.50	3.25 x 3.00	3.25 x 3.00	0.60 x 0.20
5.....	1.60	1.10	2.00 x 1.75	1.90 x 1.70	3.10 x 2.40	3.25 x 2.60	3.25 x 2.50	0.75 x 0.30
Average..	1.46	1.12	1.97 x 1.75	1.99 x 1.77	3.12 x 2.45	3.32 x 2.79	3.23 x 2.57	0.76 x 0.31

GENUS **EMPIDONAX** CABANIS.

91. **Empidonax flaviventris** BAIRD.

Yellow-bellied Flycatcher.

A rare spring and fall transient visitor. It has been observed only in May and September, in thickets and the undergrowth of woodland.

The stomach of a specimen taken September 18, 1892, contained the remains of two or three striped squash-beetles (*Diabrotica vittata*) and a dung-beetle (*Atenius stercorator*).

92. **Empidonax virescens** (VIEILL.).

Green-crested Flycatcher.

A summer resident; common for a while in the spring, but during the breeding season less numerous, and inhabiting then only certain localities. The earliest date of its spring arrival is April 30 (1891), but it has in other years not been noted before the middle of May. It departs usually not later than the first of September.

93. **Empidonax traillii** (AUD.).

Traill's Flycatcher.

A tolerably common summer resident, but of very local distribution. It appears in spring during the first half of May, the earliest record being May 1, and remains until September.

It has been found nesting in only one locality, a mill-race in the valley of the Applecreek, a short distance southeast of Wooster. This mill-race is thickly fringed with a growth of elders (*Sambucus Canadensis*), and though situated between the railroad track and cultivated fields, seems to have a special attraction for Traill's Flycatcher, as several pairs breed here annually. Eggs have been obtained between the dates of June 10 and July 14 inclusive; those on the latter date, however, belonging probably to a pair from which eggs had previously been taken. None of the nests found were higher from the ground than six feet, most of them less than four and one-half feet; all being built in elder bushes, and by no means difficult to discover. Four eggs seem to constitute the ordinary complement, only one set (July 14, 1892) consisting of a smaller number. A nest taken June 15, 1892, contained four eggs of its owner with one of the Cowbird; the Cowbird's egg having been deposited before any of the others.

Six nests measured furnish the following results :

No.	Height.	Depth.	Inside top diameter.	Inside middle diameter.	Outsidetop diameter.	Outside middle diameter.	Outside bottom diameter.	Width of rim.
1.....	2.50	1.65	2.05 x 1.85	2.15 x 2.05	3.00 x 2.60	2.75 x 2.50	2.75 x 1.75	0.50 x 0.20
2.....	2.35	1.30	2.00 x 1.75	2.00 x 1.90	3.10 x 2.85	3.25 x 3.00	2.75 x 2.25	0.80 x 0.45
3.....	2.75	1.65	2.10 x 1.75	2.30 x 1.70	2.85 x 2.50	3.25 x 2.50	2.10 x 1.85	0.75 x 0.25
4.....	2.60	1.50	2.25 x 1.75	2.25 x 2.00	2.85 x 2.60	3.00 x 2.75	2.50 x 1.75	0.50 x 0.20
5.....	2.75	1.35	2.10 x 1.85	2.10 x 1.85	3.00 x 2.65	2.75 x 2.00	2.50 x 1.25	0.60 x 0.35
6.....	3.25	1.40	2.50 x 1.75	2.40 x 2.00	3.25 x 2.35	4.00 x 3.25	2.00 x 1.50	0.60 x 0.20
Average..	2.70	1.48	2.17 x 1.78	2.20 x 1.92	3.01 x 2.59	3.17 x 2.67	2.43 x 1.72	0.63 x 0.28

94. *Empidonax minimus* BAIRD.

Least Flycatcher.

A tolerably common spring transient from May 1 to 24, but has not been observed in the fall. During its passage through the County it is found almost exclusively in woodland.

Contrary to the statement of Dr. Wheaton,¹ the characteristic note of this species is here frequently heard during the migration.

SUBORDER OSCINES. SONG BIRDS.

FAMILY ALAUDIDÆ. LARKS.

GENUS *OTOCORIS* BONAPARTE.



HORNED LARK, MUCH REDUCED.

95. *Otocoris alpestris* (LINN.).

Horned Lark.

Winter visitor; rare. A single specimen in the writer's collection is the only record. This was taken December 28, 1892, from a flock of about twenty-five individuals, three others of which, also secured, proved to be fairly typical *praticola*.

¹Geological Survey of Ohio IV, 1882, p. 379.

From the rarity of *Otocoris alpestris* in Indiana and in western Pennsylvania, its uncommon occurrence in Ohio, except perhaps in the extreme northern portion, may be reasonably inferred. This supposition is borne out by the facts at present available, for the specimen mentioned above is apparently the fourth published record of its unequivocal appearance in the State; all other mention of this form referring without much doubt to *Otocoris alpestris praticola*. The previous records are by Dr. J. Dwight Jr.,¹ who mentions specimens from Cleveland and Circleville, Ohio; and by Mr. Lynds Jones,² who found the species at Oberlin during the winter of 1895-6.

96. *Otocoris alpestris praticola* HENSH.

Prairie Horned Lark.

A permanent resident; common during the winter months, but less numerous in summer. It occurs throughout the former season principally in flocks, frequenting chiefly the upland fields or public roads, sometimes associated with the Snowflake (*Plectrophenax nivalis*). A flock of 140 Horned Larks was seen on the lowland meadows along Killbuck Creek, April 23, 1893.

A nest of this subspecies, built as usual upon the ground, and containing two eggs together with two callow young, was observed by W. E. Henderson, near Wooster, in June 1893. A young bird in first plumage was shot by the writer from a flock of five, on June 26, 1891.

This form of the Horned Lark has for some years been considered a summer resident throughout the northern portion of Ohio, but definite data from this state are few, although it has been with comparative frequency reported breeding in contiguous portions of Pennsylvania.³ Aside from the map of its breeding range published by Dr. J. Dwight Jr.,⁴ the only previous records of its breeding in Ohio appear to be as follows:

DAVIE, Nests and Eggs of North American Birds, 1889, page 254;—young taken in May in northwestern Ohio.

WHEATON, Geological Survey of Ohio IV, 1882, page 589;—said by Mr. Chubb to breed near Cleveland.

VICKERS, Oölogist XII, 1895, page 108;—a nest containing three young found April 17, 1895, near Ellsworth, Mahoning County, Ohio.

A male in breeding plumage taken June 26, 1891, and a female in fall dress collected October 30, 1890, are paler than typical specimens and very closely resemble corresponding plumages of *Otocoris alpestris arenicola* from Montana.

¹ Auk VII, 1890, p. 142.

² Bulletin of Wilson Ornithological Chapter, No. 7, March 30, 1896.

³ WARREN, Report on Birds of Pennsylvania, 1890, p. 198.

⁴ Auk. VII, 1890, map facing p. 158.

FAMILY **CORVIDÆ**. CROWS, JAYS, MAGPIES, ETC.SUBFAMILY **GARRULINÆ**. MAGPIES AND JAYS.GENUS **CYANOCITTA** STRICKLAND.97. *Cyanocitta cristata* (LINN.).

Blue Jay.

An abundant resident, but especially numerous during fall and early spring.

Nesting is begun sometimes by April 10, but the height of the breeding season is in May. In the matter of nesting sites a preference seems to be shown for the thorn bushes (*Crataegus*), though various other situations are also chosen. The nest is usually placed not over fifteen feet from the ground, though in one instance the distance was forty-two feet. The eggs are four or five in number, and are sometimes in varying stages of incubation.

A set of five eggs, taken in this locality on May 1, 1890, seems sufficiently different from the usual type of coloration to merit a description. The ground color is a rich cream buff, with small markings of vandyke brown, tawny olive, broccoli brown, clay color, wood brown, drab, dull lavender and ecru drab; these markings occurring most numerously at the larger ends of the eggs. These eggs measure respectively: 1.16 x .78, 1.08 x .79, 1.11 x .79, 1.16 x .79, 1.11 x .77.

All the nests (nine in number) which have been examined by the writer have revealed the employment of more or less mud in their construction. Many of them were cupped and plastered with this material to as great an extent as is characteristic of the nest of the Robin. If this use of mud by the Blue Jay is of general occurrence, it would seem somewhat strange that more mention has not been made of the fact in the literature of the subject. The only notice of such a habit, so far as the present writer has been able to ascertain, is to be found in Baird, Brewer and Ridgway's History of North American Land Birds, Volume II, page 275; and in Thos. G. Gentry's Life Histories of the Birds of Eastern Pennsylvania, Volume II, page 21. The same sentence occurs in both these works and is as follows:—

“In Texas according to Dr. Lincecum the nest is built of mud, which is rarely if ever utilized in more northern localities.”

The measurements of eight nests are herewith given:

No.	Height.	Depth.	Inside top diameter.	Inside middle diameter.	Outside top diameter.	Outside middle diameter.	Outside bottom diameter.	Width of rim.
1.....	6.50	1.88	4.00 x 3.25	3.25 x 3.12	7.50 x 5.75	8.00 x 6.50	8.00 x 1.25	3.00 x 0.63
2.....	3.00	1.75	4.25 x 3.50	3.75 x 3.00	6.50 x 4.50	7.00 x 5.00	7.00 x 3.50	2.00 x 0.50
3.....	5.00	1.75	3.75 x 3.75	3.75 x 3.38	6.50 x 5.00	6.50 x 6.00	6.00 x 4.00	2.00 x 0.75
4.....	4.50	2.10	3.50 x 3.00	3.90 x 3.15	6.25 x 4.75	8.00 x 5.25	5.50 x 4.00	2.00 x 0.50
5.....	5.00	2.50	4.00 x 3.50	3.38 x 3.38	5.50 x 4.75	10.50 x 7.00	7.00 x 6.00	1.75 x 0.13
6.....	4.00	2.00	4.25 x 4.00	3.25 x 3.25	6.50 x 5.50	7.50 x 7.00	5.50 x 5.00	1.25 x 0.50
7.....	4.50	2.25	4.00 x 3.50	3.50 x 3.25	7.00 x 6.00	9.00 x 5.00	5.00 x 3.50	1.75 x 0.63
8.....	3.50	2.00	4.00 x 3.63	3.63 x 3.50	5.75 x 5.50	6.00 x 5.50	6.00 x 5.00	1.38 x 0.63
Average	4.50	2.03	3.97 x 3.52	3.55 x 3.25	6.44 x 5.22	7.81 x 5.91	6.25 x 4.08	1.89 x 0.53

Three Blue Jays were on July 27, 1890, observed chasing a Red-tailed Hawk in regular Kingbird fashion, much to the evident discomfort of the Hawk, and apparently to the equally great delight of the Jays. Notwithstanding its well attested propensity for annoying other birds, the Blue Jay is itself occasionally the injured party, even at the hands of its inferiors, for it has been seen put to flight by the combined efforts of a Baltimore Oriole and a Warbling Vireo.

On September 26 and 27, 1890, several Blue Jays were observed feeding extensively on the acorns of the laurel oak (*Quercus imbricaria*). The examination of stomachs from individuals taken during the fall and winter months indicates that the food of this species at these seasons consists largely of mast.

SUBFAMILY CORVINÆ. CROWS.

GENUS *CORVUS* LINNÆUS.

98. *Corvus americanus* AUD.

American Crow.

An abundant summer resident, perhaps remaining also during mild winters. Although it has been ascertained to sometimes pass even a severe winter in Summit County, Ohio,¹ the writer has no positive knowledge of its presence throughout the whole of this season within the region at present under consideration. One individual was heard January 1, 1892; and Mr. C. E. Bixler found one frozen to death in a brush-heap, four miles north of Wooster, on January 4, 1887; these being the only records for either December or January. The Crow appears in February, sometimes as early as the second of the month, and disappears late in October or early in November; the latest date on which it has been observed being November 6, (1892).

The breeding season begins often very early in April, probably sometimes in March. Nests with eggs are not common after the middle of May. As to location, a preference seems to be shown for the woods of the bottom-lands, where the nest is frequently placed in a swamp maple (*Acer rubrum*), ordinarily among the upper branches. The eggs are generally five, sometimes in varying stages of incubation.

The measurements of four nests are as follows:

No.	Height.	Depth.	Inside top diameter.	Inside middle diameter.	Outside top diameter.	Outside middle diameter.	Outside bottom diameter.	Width of rim.
1.....	12.00	5.50	7.75 x 7.00	7.00 x 6.50	16.00 x 12.00	16.00 x 12.00	12.00 x 6.00	5.00 x 0.75
2.....	12.00	5.00	8.00 x 7.75	6.50 x 6.00	18.00 x 13.00	22.00 x 14.00	9.00 x 9.00	7.50 x 2.50
3.....	16.00	4.00	8.50 x 6.75	6.50 x 6.00	16.00 x 16.00	16.00 x 16.00	8.00 x 6.00	6.00 x 3.00
4.....	11.00	3.50	7.25 x 6.25	5.50 x 5.50	13.00 x 6.50	16.00 x 11.00	16.00 x 8.00	3.00 x 1.00
Average..	12.75	4.50	7.88 x 6.94	6.38 x 6.00	15.75 x 11.88	17.50 x 10.75	11.25 x 7.25	5.38 x 1.81

The female may usually without difficulty be induced to leave the nest, but occasionally even the most vigorous rapping proves unavailing, in which case a stick thrown and striking near the nest almost invariably has the desired effect.

The Crow in this locality seems to have a particular animosity towards both the Red-tailed and Red-shouldered Hawks, and may often be seen annoying them; yet notwithstanding this, it is exceptional, as has been previously stated, to find a domicile of the Red-shouldered Hawk without the presence of a Crow's nest in the vicinity.

¹ Annual Report of Ohio Academy of Sciences II, 1894, p. 12.

A somewhat interesting case of rostral malformation is exhibited by a mounted Crow in the possession of Mr. R. A. Schnably, of West Salem. The mandible is perfectly normal; but the maxilla, though of usual length, is curved downward, crossing the mandible on the left side, and describing a complete semi-circle, so that its tip is below and on nearly a vertical line with the base of the bill. It would seem that such abnormality could hardly fail to seriously interfere with the bird's feeding, yet this Crow was, as Mr. Schnably informed me, very fat and apparently in perfectly healthy condition.

FAMILY ICTERIDÆ. BLACKBIRDS, ORIOLES, ETC.

SUBFAMILY ICTERINÆ. BLACKBIRDS, ORIOLES, ETC.¹

GENUS **DOLICHONYX** SWAINSON.

99. **Dolichonyx oryzivorus** (LINN.).

Bobolink.

An abundant summer resident. It appears in spring generally during the first week of May, but in 1891 was noted April 21. It retires southward ordinarily by the first of October.

About the first of July it begins to gather into flocks, which apparently seldom exceed two hundred and fifty individuals. The males continue in spring plumage until at least the middle of July. During the month of September, and sometimes in August, especially on dark cloudy nights, this species may be heard passing over the city on its southward migration.

The Bobolink breeds chiefly during the last of May and in June, the nest being usually located in a grass field, on either the uplands or the lowlands. Late nests are not infrequently destroyed by the mowing of the grass in the fields where they happen to be situated. This species seems to be, if anything, slightly on the increase in this region.

GENUS **MOLOTHRUS** SWAINSON.

100. **Molothrus ater** (BODD.).

Cowbird.

An abundant summer resident. It arrives usually between the middle of March and the first of April, the earliest date noted being March 16 (1894). It disappears in October, not having been seen after the twentieth of this month.

In spring it moves chiefly in small companies, flocks of over a hundred being the exception; but after the breeding season, in July or early in August, it begins to collect again into flocks, which thereafter often aggregate several hundred individuals. It is frequently found associated in spring and autumn with numbers of both Red-winged Blackbirds and Bronzed Grackles. It is also occasionally noted in company with Robins.

¹ The two subfamilies of *Icteridæ* are not recognized in the A. O. U. Check List, but are apparently advisable divisions.

The Cowbird seems here to most frequently invade the nest of the Rose-breasted Grosbeak, and not uncommonly deposits two or three eggs in a single nest. Next to the Rose-breasted Grosbeak, the Yellow Warbler and Wood Thrush are probably the species most frequently imposed upon by this parasite.

On June 22, 1890, a nest of the Yellow Warbler was found to contain one young Warbler and two eggs about to hatch, together with one Cowbird's egg which was nearly fresh. A Song Sparrow's nest containing two young Sparrows, and a Cowbird's egg only one-eighth incubated, was observed June 5, 1892. From these instances it would seem evident that the Cowbird sometimes makes mistakes in the deposition of its eggs, placing them in nests where exists at most but small probability of their being hatched. On June 22, 1891, there was discovered a Yellow Warbler's nest containing one young Warbler and a young Cowbird, both about two-thirds fledged. The two quite filled the nest, the Cowbird by its much greater size being readily distinguished. Whether or not in this case the young Cowbird eventually appropriated the entire nest, as is said to be a common occurrence, was unfortunately not possible to determine.

GENUS *AGELAIUS* VIEILLOT.

101. *Agelaius phoeniceus* (LINN.).

Red-winged Blackbird.

An abundant summer resident. It appears in spring generally during the first week of March, but was in 1892 noted on February 25. It departs rarely before November 1, sometimes remaining until November 30.

From the time of its arrival it moves much in flocks, and is to be seen almost everywhere, resorting, however, at night in great numbers to the swamps to roost. This continues until the latter part of April, when the birds become more or less scattered for the purpose of breeding, which takes place chiefly in May and the first part of June.

During the nesting season the Red-winged Blackbird may be found in almost every swamp and marsh, though apparently more than a few pairs seldom breed together. The nest is very frequently placed in a bush or small tree, especially a willow, and is sometimes ten or fifteen feet from the ground. The eggs appear to be usually four in number.

Six nests afford the following measurements :

No.	Height	Depth.	Inside top diameter.	Inside middle diameter.	Outside top diameter.	Outside middle diameter.	Outside bottom diameter.	Width of rim.
1.....	4.25	2.50	3.12 x 2.25	3.12 x 2.50	6.00 x 4.00	5.75 x 5.00	2.50 x 2.25	2.50 x 0.25
2.....	5.50	3.00	2.50 x 2.50	3.00 x 2.50	6.00 x 5.00	4.00 x 3.75	2.50 x 1.50	.....
3.....	5.00	3.50	2.63 x 2.63	3.00 x 2.75	4.88 x 4.88	5.00 x 5.00	3.00 x 2.50	1.88 x 0.88
4.....	4.00	2.50	2.80 x 2.63	2.88 x 2.75	5.00 x 4.00	4.75 x 4.75	2.50 x 2.00	1.25 x 0.25
5.....	3.85	2.25	3.00 x 2.70	3.15 x 3.00	4.35 x 4.00	4.75 x 4.25	4.00 x 3.00	1.10 x 0.50
6.....	3.50	2.25	3.00 x 2.75	3.40 x 3.00	4.00 x 4.00	4.75 x 4.00	3.50 x 2.75	0.85 x 0.45
Average..	4.27	2.67	2.84 x 2.58	3.09 x 2.75	4.96 x 4.28	4.83 x 4.46	3.00 x 2.33	1.42 x 0.37

This species exhibits considerable courage in defense of its nest, attacking without hesitation such birds as the Red-shouldered and Sparrow Hawks, the Crow and the Kingfisher, usually with success,—often putting them to flight single-handed. An attack upon the Cliff Swallow, on account of a supposed intrusion, does not seem to be so well justified.

By the middle of June, or even earlier, the Red-winged Blackbird commonly begins to reassemble into small flocks, which gradually increase in size as the summer advances, reaching their maximum during August. These hordes, often in company with numerous Bronzed Grackles, again resort to the swamps and marshes to roost, there occupying for this purpose the cat-tails (*Typha latifolia*), as well as the bushes and trees.

GENUS **STURNELLA** VIEILLOT.

102. *Sturnella magna* (LINN.).

Meadowlark.

Resident; abundant during the spring, summer and fall, but not very common in winter. It remains throughout the last mentioned season principally on the bottom-lands and in the more sheltered fields of the uplands. It occurs to some extent in small flocks from about the first of July until April. A flock seen January 4, 1892, was accompanied by about fifty Horned Larks. The Meadowlark is comparatively seldom noted in the towns, but during March and April it is occasionally observed flying over. It nests generally in May, in suitable situations on both the uplands and the bottoms.

This species commonly begins to sing about the latter part of February, but has been heard, though rarely, as early as the first of January. It continues in song almost uninterruptedly from February until November. Mr. E. P. Bicknell mentions¹ the absence of song during September and the latter part of August, but the writer's experience has been to find the species in fairly good song often through both August and September.

GENUS **ICTERUS** BRISSON.

SUBGENUS **PENDULINUS** VIEILLOT.

103. *Icterus spurius* (LINN.).

Orchard Oriole.

A tolerably common summer resident. It is apparently more numerous some years than others, though never more than locally common. According to the notes of the writer, it arrives between May 3 and May 16.

It frequents almost exclusively orchards and the vicinity of country dwellings, in which localities it breeds. It apparently does not often venture into the towns beyond their outskirts, but one was seen singing, on July 3, 1893, near the center of the business portion of Wooster.

The exhibition of a trait that we are loth to believe characteristic of the species was observed by the writer on May 20 1890. A Warbling Vireo was busily engaged

¹ Auk II, 1885, p. 251.

in constructing its nest on one of the outer branches of a large wild cherry tree (*Prunus serotina*), which stood in a thicket along a mill-race, adjacent to apple orchards and a farm-house. A female Orchard Oriole quietly occupied a neighboring tree until the Vireo, after bringing material to its nest and satisfactorily arranging the same, should depart; when she too visited the nest and bore away in her bill such of the material as she could easily detach,—without doubt for the construction of her own nest. This theft was a number of times repeated, always in the same sly manner; but the Vireo finally discovered that something was wrong, and with the assistance of its mate, ended by driving the Oriole off the scene.

The Orchard Oriole has been heard singing as late as August 28 (1890), which date is also the latest fall record for the occurrence of the species.

SUBGENUS *YPHANTES* VIEILLOT.

104. *Icterus galbula* (LINN.).

Baltimore Oriole.

An abundant summer resident. Its arrival during the four years of the writer's observations has been between April 28 and May 5, inclusive. It has not been noted later than September 18 (1892), when one was heard singing in Wooster.

The nesting season is in May and the early part of June. Ordinarily full complements of fresh eggs are to be obtained within a few days of the first of June, though some nests may contain young at this time. An exception was noted in 1891, when all the nests examined between May 28 and June 4 contained either callow young or heavily incubated eggs. Four or five eggs is the usual number, though a nest occupied by only three young is occasionally noticed. With regard to the location of the nest, a preference seems to be evinced for trees in the immediate vicinity of running water, but in the absence of such, orchards or ornamental trees are with equal readiness utilized. The nest is very often placed in an elm (*Ulmus Americana*), where it is not infrequently in a practically inaccessible position at the extremity of a long drooping branch, fifty or seventy-five feet from the ground. Of other native trees, the buckeye (*Æsculus glabra*), the sycamore (*Platanus occidentalis*) and maple (*Acer rubrum*) seem to be most frequently chosen.

The measurements of six nests are as follows:

No.	Height.	Depth.	Inside top diameter.	Inside middle diameter.	Outside top diameter.	Outside middle diameter.	Outside bottom diameter.	Width of rim.
1.....	7.00	6.00	2.00 x 1.75	4.00 x 3.25	3.75 x 3.00	4.00 x 3.50	3.25 x 3.00	0.38 x 0.25
2.....	6.00	5.00	2.63 x 2.00	3.50 x 3.00	3.25 x 2.50	4.00 x 4.00	2.75 x 2.00	0.50 x 0.06
3.....	6.00	5.25	2.25 x 1.75	3.50 x 2.90	3.50 x 2.50	4.00 x 3.50	2.50 x 2.50	1.25 x 0.23
4.....	5.75	5.25	2.00 x 1.50	3.50 x 3.25	3.50 x 2.50	4.00 x 3.50	3.00 x 2.50	1.00 x 0.20
5.....	4.75	4.00	2.25 x 1.50	3.50 x 3.00	3.25 x 2.50	4.75 x 3.50	4.50 x 3.25	1.00 x 0.25
6.....	4.00	3.75	3.00 x 2.00	4.35 x 3.50	3.25 x 2.25	4.75 x 4.25	4.50 x 3.25	0.50 x 0.10
Average..	5.58	4.88	2.86 x 1.75	3.78 x 3.15	3.42 x 2.64	4.25 x 3.71	3.42 x 2.75	0.77 x 0.19

SUBFAMILY QUISCALINÆ. GRACKLES.

GENUS **SCOLECOPHAGUS** SWAINSON.105. **Scolecophagus carolinus** (MÜLL.).**Rusty Blackbird.**

A common spring and fall transient, usually quite numerous for a short time during both these seasons. It has been in spring noted from March 25 to May 8, though usually arriving about the middle of April and disappearing by the first of May. In fall this species has been observed from October 2 (1893) to November 24 (1890).

Throughout both its migration periods it moves principally in flocks of less than 100, often in parties of from two to five individuals; a flock of 400 was, however, seen April 23, 1893. It associates frequently with Red-winged Blackbirds; also, though less commonly, with Bronzed Grackles. It affects preferably the marshes and swampy woods on the bottom-lands, but has been observed in the upland forests as well.

GENUS **QUISCALUS** VIEILLOT.SUBGENUS **QUISCALUS**.106. **Quiscalus quiscula æneus** (RIDGW.).**Bronzed Grackle.**

An abundant summer resident. It arrives usually about the first of March, though sometimes as early as February 25 (1890). It generally disappears before the first of November, but during the winter of 1892-3, which moreover, was not especially mild, a few birds, probably the same individuals, were seen at intervals until January 21, in fields and about dwellings on the outskirts of Wooster.

Until at least the middle of April this species may be seen often in flocks, which consist, however, of usually not more than one hundred birds; while even during the nesting season it sometimes assembles into small companies, especially in the vicinity of a breeding colony. Subsequent to the middle of June, and continuing until its departure in the fall, it again collects into flocks, which then often aggregate several hundred individuals.

The Bronzed Grackle congregates in numbers at its roosting places every night in both spring and fall, but especially during the latter season. These roosts are situated in the trees along the streets of the towns, about rural dwellings, in woodlands or in swamps. Such a roost existed in the town of Wooster, and was occupied chiefly from June to August. Frequently here the birds could be heard at night, occasionally creating among themselves, even at a late hour, a disturbance sufficient to be audible at a considerable distance.

The Bronzed Grackle breeds most abundantly in the vicinity of dwellings, and for nesting purposes seems to much prefer the evergreen trees; yet nests have also been observed in thorn bushes (*Crataegus*) on the bottom-lands. If the tree selected be a spruce, the nest is usually placed close to the trunk, at a distance from the ground varying with the size of the tree, the best concealment possible being apparently sought; but if the nest be in a pine, it is generally located either at some distance from the trunk among the thick foliage of a horizontal branch, or in an upright fork near the very top of the tree.

The construction of the nest is initiated sometimes early in April, but full complements of eggs have not been found until about the first of May. Sets of eggs have been taken from May 6 to May 24; those on the latter date being, however, from abandoned nests. The eggs appear to be usually five, not uncommonly four in number; and they are quite often in varying stages of incubation.

The nests are by no means always easy to locate among the thick foliage of the evergreens, the conduct of the parent birds being at times decidedly misleading. Where a number of pairs breed near together, careful watching is frequently necessary to properly discriminate between those birds which visit the trees for the purpose of nest-building, and those that are indifferently moving about. Close observation, managed so that the attention of the birds be not attracted, will reveal the fact that the female, on her trips to the nest with material for its construction, is commonly accompanied by the male, who perches upon the same or a neighboring tree, while his mate, alighting near the end of a limb and slowly working her way inward, finally disappears among the foliage close to the nest. Should, however, the pair imagine themselves observed, their actions are apt to be very different; for under such circumstances they will sometimes pass by the tree that contains the nest, and alight unconcernedly some distance away. If the cause of their distrust be not removed, no visit to the nest will then be made; and the female may carry her deception even to the extent of dropping from her bill the grass or straw that she holds, thereupon soon flying with her mate carelessly away. The female is very cautious in leaving the nest, and is not readily surprised in the act of incubating. A nest containing eggs not far advanced in incubation, if even once examined, is liable to be deserted by the birds.

Ten nests exhibit the following measurements:

No.	Height	Depth	Inside top diameter.	Inside middle diameter.	Outside top diameter.	Outside middle diameter.	Outside bottom diameter.	Width of rim.
1.....	7.00	3.00	4.00 x 3.75	4.00 x 3.75	9.00 x 7.00	9.00 x 4.50	3.00 x 2.00	2.50 x 1.50
2.....	4.50	3.00	4.63 x 3.33	4.00 x 3.75	7.50 x 6.00	8.00 x 6.00	6.50 x 2.50	2.00 x 0.75
3.....	5.00	2.63	3.75 x 3.75	4.00 x 3.75	8.50 x 5.75	6.50 x 5.75	4.00 x 3.50	3.00 x 0.75
4.....	4.50	2.75	4.25 x 3.50	3.75 x 3.50	7.50 x 5.00	8.00 x 6.00	6.00 x 5.00	2.00 x 1.00
5.....	4.00	2.75	4.00 x 3.50	4.00 x 3.50	7.00 x 6.00	7.50 x 6.00	5.00 x 4.00	2.25 x 1.00
6.....	4.00	2.75	4.00 x 3.25	4.00 x 3.25	8.00 x 6.50	8.50 x 6.00	5.00 x 4.00	2.50 x 1.00
7.....	3.00	2.50	4.00 x 3.25	4.00 x 3.00	7.50 x 6.00	8.00 x 5.50	6.00 x 3.00	2.25 x 0.75
8.....	4.00	2.25	4.00 x 3.25	4.00 x 3.00	7.00 x 6.00	8.00 x 5.50	5.00 x 4.00	2.50 x 0.75
9.....	4.00	3.00	4.50 x 4.50	3.75 x 3.50	8.50 x 7.00	9.50 x 7.50	6.00 x 5.00	2.50 x 1.25
10.....	4.00	3.00	4.00 x 3.50	3.50 x 3.50	7.00 x 6.50	9.00 x 7.00	6.00 x 5.00	2.00 x 1.25
Average...	4.40	2.76	4.11 x 3.56	3.90 x 3.45	7.75 x 6.18	8.20 x 5.98	5.25 x 3.80	2.35 x 1.00

During the season of reproduction this species does not hesitate to attack even Crows and large Hawks, should they venture too near its breeding ground; and the harmless Mourning Dove, which nests often in close proximity to the Grackle, sometimes, indeed, in the same tree, is also very frequently thus persecuted.

FAMILY FRINGILLIDÆ. FINCHES, SPARROWS, ETC.

GENUS **CARPODACUS** KAUP.107. *Carpodacus purpureus* (GMEL.).

Purple Finch.

Apparently very rare, the writer's only records being as follows: Two were seen flying across the Killbuck Valley, near Wooster, September 25, 1892; and four were observed singing in a swamp in about the same locality, on October 2, 1892.

A single male in the collection of Mr. George Faber was said to have been obtained about 1890.

GENUS **ACANTHIS** BECHSTEIN.108. *Acanthis linaria* (LINN.).

Redpoll.

A very irregular winter visitor. This species has not been observed by the writer, and the only record available is that furnished by Mr. W. E. Henderson, who with reference to its occurrence writes as follows:—

“In regard to the Redpolls, the date I have marked is February 3, 1890. They were around for a month or so, and were quite abundant. I saw large flocks of several hundred; and they used to feed near our house in a field which was grown up with ragweed. I shot a number and carefully identified them at the time. Both in flight and note they resembled the Goldfinch, but could without great difficulty be distinguished.”

GENUS **SPINUS** KOCH.109. *Spinus tristis* (LINN.).

American Goldfinch; Thistle-bird.

A permanent resident; abundant except in winter. It is more or less gregarious at all times, though perhaps strictly speaking not so during the breeding season, yet small companies of four or five birds have even then been observed. It is present in apparently decreased numbers from about the middle of June until the middle of July, after which time it becomes as abundant as usual. It is very generally distributed, but seems during the nesting season to have some preference for the outskirts of towns and the vicinity of rural dwellings.

It nests commonly in ornamental trees, often in silver maples (*Acer saccharinum*). A nest found July 27, 1893, was situated in a large thistle near a stream, and among surroundings apparently much more suited to the Indigo Bunting than to the present species. Nest-building is usually begun late in July; the eggs, commonly five in number, being deposited early in August.

This species has been observed feeding upon the seeds of the dandelion (*Taraxacum Taraxacum*), wild lettuce (*Lactuca Canadensis*), common thistle (*Carduus lanceolatus*), rag-weed (*Ambrosia artemisiæfolia*), milkweed (*Asclepias Syriaca*) and common beg-

The male apparently to a considerable extent shares the duty of incubation, for he has quite as frequently as the female been discovered on the nest. The sitting parent is not readily disturbed, often remaining until almost touched by the hand.

The Rose-breasted Grosbeak continues in song through May and June, but does not appear to sing much after the middle of July, its song not having been heard later than July 10 (1893).

This species has been observed in the latter part of July feeding upon the seeds of the milkweed (*Asclepias Syriaca*.)

GENUS **PASSERINA** VIEILLOT.

127. *Passerina cyanea* (LINN.).

Indigo Bunting.

A summer resident; ordinarily abundant, yet apparently not every year equally numerous. The earliest date of its spring arrival is April 24 (1892), though it does not usually appear until the second week in May. It remains until October, and while not observed later than the seventh of the month, this perhaps does not represent the limit of its stay.

The species is found on both the uplands and the bottoms, although it seems to be, at least locally, more abundant on the latter, where in late summer and in the fall it assembles into small flocks, frequenting then chiefly the thickets and patches of high weeds. At this time it is often associated with other Sparrows, particularly the Field Sparrow and the Song Sparrow. For a bird so common, its nests seem in this locality to be easily overlooked, since a large amount of careful searching has resulted in the discovery of but a single nest containing eggs, this being on June 22, 1890.

The song of this species may be heard from the time of the bird's appearance in spring until late in July, but it has not been detected later than July 30 (1893). On one occasion a male was observed singing on the wing, much after the manner of the Bobolink, continuing his song until in soaring flight he reached the ground.

GENUS **SPIZA** BONAPARTE.

128. *Spiza americana* (GMEL.).

Dickcissel; Black-throated Bunting.

A rare summer resident. Arrives in May, the third of the month being the earliest date recorded. It was not observed during 1893. The writer is informed by Mr. W. E. Henderson that this species was present in much more than ordinary numbers and was common during the summer of 1894. A nest containing four fresh eggs was taken by the same gentleman on July 8 of that year.

The Dickcissel is almost exclusively a bird of the upland fields, being very rarely noted anywhere on the bottom-lands, even in the spring.

FAMILY TANAGRIDÆ. TANAGERS.

GENUS **PIRANGA** VIEILLOT.129. **Piranga erythromelas** VIEILL.**Scarlet Tanager.**

A common summer resident, but usually most numerous during the spring migration. The dates of its arrival vary from May 1 to May 7, and it lingers in fall usually until late in September, being in 1890 last observed on October 3.

The breeding season begins about the middle of May, completed nests having been noted on the twenty-second of this month. It is exceptional to find other than incubated eggs after the middle of June. While a woodland situation is commonly chosen, an orchard tree is not infrequently the nesting site, particularly if the orchard be in proximity to a tract of woods.

The measurements of four nests are as follows :

No.	Height.	Depth.	Inside top diameter.	Inside middle diameter.	Outsidetop diameter.	Outside middle diameter.	Outside bottom diameter.	Width of rim.
1.....	3.00	1.75	2.75 x 2.50	2.25 x 2.25	5.50 x 4.00	6.00 x 4.50	3.50 x 2.50	2.25 x 0.50
2.....	3.00	1.75	2.25 x 2.25	2.25 x 2.25	4.25 x 3.50	5.00 x 4.00	3.75 x 3.25	1.00 x 0.35
3.....	2.00	1.25	2.50 x 2.25	2.25 x 2.10	4.25 x 3.50	5.25 x 3.75	3.75 x 2.75	1.25 x 0.50
4.....	3.50	2.00	3.00 x 2.50	3.00 x 2.45	6.00 x 4.25	5.50 x 4.50	4.00 x 3.50	1.80 x 0.50
Average	2.88	1.69	2.63 x 2.38	2.44 x 2.26	5.00 x 3.81	5.44 x 4.19	3.75 x 3.00	1.58 x 0.46

This species is a frequent nurse of the Cowbird, and often when the egg of this imposter is present only two or three eggs of the Tanager are deposited. In fact, one nest that was carefully watched from the time of its construction until incubation of the eggs was nearly half completed, contained but one egg of its owner and one of the Cowbird.

The Scarlet Tanager begins to sing soon after its arrival, and continues in song until late in July. It has not been heard subsequent to the twenty-seventh of this month.

FAMILY HIRUNDINIDÆ. SWALLOWS.

GENUS **PROGNE** BOIE.130. **Progne subis** (LINN.).**Purple Martin.**

An abundant summer resident. It makes its spring appearance generally between the first and the eighth of April, though in 1892 it was seen on March 25. It usually disappears during the latter part of August or the first days of September; a solitary individual, however, was noted on September 20, 1893.

A Martin box on one of the main streets of Wooster is every spring regularly preempted by the House Sparrows before the arrival of the rightful tenants. The

The Grasshopper Sparrow is somewhat locally distributed, occurring, according to the writer's experience, only on the uplands, and there preferring fields of grass and clover. Many places, and even considerable areas of country where favorable conditions appear to exist, have been found untenanted by this species.

Although the nest has not been discovered, young in the streaked first plumage were taken in a field near Wooster, July 18, 1892.

This species sings regularly until late in July; in 1893 it was heard on the twentieth of August.

GENUS **ZONOTRICHIA** SWAINSON.

115. *Zonotrichia leucophrys* (FORST.).

White-crowned Sparrow.

A transient visitor; tolerably common from May 1 to May 24, but apparently rare in the fall. For the latter season the writer has only one record,—October 16, 1892. It is usually not seen in flocks, and does not commonly associate with any other species. It frequents the hedges, thickets and fence-rows, in fields and along the roads, also sometimes appearing on the outskirts of the towns.

116. *Zonotrichia albicollis* (GMEL.).

White-throated Sparrow.

An abundant transient visitor. It has been observed in spring from April 10 to May 17, and in fall from September 29 to November 8. It appears to be considerably more numerous in fall, during which season it moves in loose flocks, sometimes in company with Song Sparrows or Tree Sparrows; and may be found in almost any suitable locality. On October 5, 1890, eighty White-throated Sparrows were counted in a thicket within a radius of twenty-five feet.

This species is in song during both its spring and fall migrations, and has been heard singing until October 28; though the fall songs are not as a rule so well executed as those of spring.

GENUS **SPIZELLA** BONAPARTE.

117. *Spizella monticola* (GMEL.).

Tree Sparrow.

An abundant winter resident. It appears in fall usually before November, sometimes by the first of October, and departs generally about the middle of April, but lingered in 1892 until May 1.

It occurs principally in flocks of less than fifty individuals, along fence-rows, in thickets and weed-patches, and is especially numerous in the swamps on the bottomlands. It has been observed associated with the Junco, Field Sparrow, Vesper Sparrow and House Sparrow.

It cannot be considered in full song during any portion of its sojourn here, but nearly every spring some individuals may be heard singing. The perfect song has been noted as early as February 5 (1891). Less commonly is its song heard in the fall, having been noted on a few occasions only, from October 28 to November 13, inclusive.

118. *Spizella socialis* (WILS.).**Chipping Sparrow.**

An abundant summer resident. The first week in April is its usual time of arrival, but in 1894 it was first seen on March 21. It has not been observed later than October 16, and is sometimes apparently absent early in this month.

Nest-building is commonly begun during the first part of May, and birds have been seen carrying nest material as early as April 26 (1891). The latest date on which a nest with eggs has been observed is July 10 (1892). Where such are available the Chipping Sparrow seems to prefer for breeding purposes orchard trees or small ornamental evergreens, the nest being usually placed not more than twelve feet from the ground. Apparently two broods are ordinarily reared: four eggs, sometimes three, constitute the first complement; while three eggs, or not infrequently only two, is the number common during the latter part of the season.

Two nests measure as follows:

No.	Height.	Depth.	Inside top diameter.	Inside middle diameter.	Outside top diameter.	Outside middle diameter.	Outside bottom diameter.	Width of rim.
1.....	2.25	1.25	2.25 x 2.00	2.00 x 1.60	3.50 x 2.75	3.50 x 2.50	3.00 x 1.50	1.00 x 0.15
2.....	2.00	1.20	2.00 x 1.75	2.00 x 1.85	3.50 x 2.75	4.00 x 3.00	4.00 x 2.50	1.10 x 0.40

In autumn this species often collects into small flocks, frequenting then the fence-rows, thickets and the dryer portions of the swamps, at times associating with various species of Sparrows (including the ubiquitous *Passer domesticus*) and also occasionally with the Bluebird.

During June and July the Chipping Sparrow is often heard singing after dark, especially before midnight; and it is in spring one of the earliest singers of the morning. On May 22, 1890, it was first heard at 3:20 A. M.

119. *Spizella pusilla* (WILS.).**Field Sparrow.**

A summer resident; abundant. It appears generally during the first week in April, sometimes as early as March 25 (1894), and disappears commonly before the middle of October, the latest date on which it has been noted being October 16 (1891).

In spring and summer it is to be found chiefly in the fields on the uplands, then not in flocks; but in the fall it often in small companies frequents regularly also the thickets and weed-patches of the creek bottoms. During the latter season it associates commonly with the Chipping Sparrow, and also, though apparently less frequently, with several other species of *Fringillidæ*.

The present species breeds during May and June, along fence-rows, in thickets, on the edges of woodland, and in the vicinity of human dwellings; placing its nests usually in low bushes, often in those of the common wild blackberry (*Rubus villosus*).

The Field Sparrow sings from the time of its arrival until the latter part of July, not having been heard in song later than July 30 (1893).

GENUS **JUNCO** WAGLER.**120. Junco hyemalis (LINN.).****Slate-colored Junco; Black Snowbird.**

An abundant winter resident. It makes its appearance generally during the latter half of October, although it was in 1892 seen on October 2. It remains until late in April; latest in 1893, when it was noted on April 26.

It moves much in companies of from twenty to fifty individuals, seldom more, though a flock of eighty was encountered March 25, 1894. It is often found with other Sparrows, particularly Tree and Song Sparrows. Among its favorite haunts are the borders of the woods and the thickets on the bottom-lands, where during fall and winter the species may nearly always be found.

It usually sings to some extent during March and April, and its song has been heard even as early as February 25 (1892).

An albino specimen of this species, taken by Mr. W. E. Henderson, March 9, 1892, was, with the exception of a few isolated patches of color, entirely white.

GENUS **MELOSPIZA** BAIRD.**121. Melospiza fasciata (GMEL.).****Song Sparrow.**

A permanent resident; very abundant except in December and January. In late fall and winter it retires principally to the bottom-lands, where often in small flocks it seeks the shelter of the dense thickets. At this time it feeds more or less extensively on the seeds of the ragweed (*Ambrosia artemisiifolia*).

Nesting is begun in April, full complements of eggs having been taken on the third of May (1891). Nests with eggs have not been noted after June 14, but the species of course breeds considerably later than this date. Most of the nests observed have been in moist situations on the bottom-lands. A low bush is not infrequently utilized as a nesting place. The nest is usually very carefully concealed, sometimes being completely roofed over by growing grass. One found May 14, 1893, was located on the slope of a railroad embankment only a few inches beyond the ends of the ties and where the sitting bird was apparently disturbed by every passing train.

The measurements of six nests are as follows:

No.	Height.	Depth.	Inside top diameter.	Inside middle diameter.	Outside top diameter.	Outside middle diameter.	Outside bottom diameter.	Width of rim.
1.....	2.75	1.75	2.50 x 2.13	2.50 x 2.25	4.50 x 3.25	4.25 x 4.00	3.50 x 2.75	1.25 x 0.38
2.....	2.50	2.00	2.63 x 2.50	2.38 x 2.25	5.00 x 4.25	4.00 x 3.25	2.75 x 2.00	1.50 x 0.25
3.....	2.50	1.75	2.50 x 2.50	2.63 x 2.25	4.50 x 3.75	.....	.....	.....
4.....	2.25	1.50	2.50 x 2.10	2.50 x 2.30	4.00 x 3.40	4.25 x 3.50	3.00 x 2.50	1.00 x 0.50
5.....	2.00	1.75	2.50 x 2.25	2.50 x 2.25	4.00 x 3.63	4.50 x 4.00	3.00 x 3.00	1.25 x 0.50
6.....	3.00	2.00	2.75 x 2.50	2.50 x 2.38	4.75 x 3.50	4.50 x 4.50	3.75 x 3.50	1.75 x 0.25
Average ...	2.50	1.79	2.66 x 2.33	2.50 x 2.28	4.46 x 3.63	4.30 x 3.85	3.20 x 2.75	1.35 x 0.38

The Song Sparrow has been heard singing in every month of the year excepting December, but the season of its best song is from about the first of March until the first of August, and from late in September to the latter part of October. The music

of this species seems to be of remarkable variability. Within a week's time the writer once identified some fifteen distinct songs, with almost endless variations; and the repertoire was apparently not then even approximately exhausted. Striking individuality was in some cases evinced, both in the quality as well as in the character of the music; the different birds being observed morning after morning at the same places along the road, singing so nearly the same songs that it became to a degree possible to recognize the several individuals by their peculiarities. Although strictly speaking a slight uncertainty might exist in regard to the fact of their being really the same birds which were heard thus day after day from particular fence posts or telegraph poles, as the case might be, yet the circumstances were such as to remove all reasonable doubt of their identity.

122. *Melospiza georgiana* (LATH.).

Swamp Sparrow.

A rare spring and fall transient, frequenting the swamps, marshes and water-courses. The writer has for this species but three records, which are as follows: October 5, 1890; May 3, 1891; and May 10, 1891; two individuals having been observed on each of these dates. It is perhaps of more frequent occurrence than is thus indicated, since it is given by Wheaton¹ as a common transient visitor.

GENUS *PASSERELLA* SWAINSON.

123. *Passerella iliaca* (MERR.).

Fox Sparrow.

A tolerably common transient visitor from March 18 to April 12, and from October 19 to October 31. It is observed chiefly in the undergrowth of wooded banks, and in thickets, particularly those on the borders of woodland. It moves often in small loose flocks; and occasionally associates with Tree Sparrows.

GENUS *PIPILO* VIEILLOT.

124. *Pipilo erythrophthalmus* (LINN.).

Towhee; Chewink.

A common summer resident. The dates of its spring arrival range from March 18 (1894) to April 6 (1890); the male generally appearing a few days in advance of the female. It usually disappears soon after the middle of October, the latest date on which it has been observed being October 25 (1891).

This species may be found in the thickets of both the uplands and the bottoms, and also, though rather exceptionally, in the vicinity of human dwellings. Sometimes during the migrations it is seen in scattered companies of four or five individuals; but is seldom accompanied by birds of another species.

The breeding season is in May and June. The nest is occasionally found in a low bush; and not infrequently contains eggs of the Cowbird.

The Towhee may be heard in song soon after its arrival, and until the latter part of July, though it does not sing so steadily during this month. The date of latest song noted is July 27 (1893).

¹ Geological Survey of Ohio IV, 1882, p. 330.

GENUS **CARDINALIS** BONAPARTE.**125. *Cardinalis cardinalis* (LINN.).**

Cardinal; "Red Bird."

Resident throughout the year; abundant. Here almost universally known by the name of "Red Bird." It is most numerous in the thickets and the swamps on the bottom-lands, and in the many wooded ravines adjacent. It is, however, found regularly in suitable situations on the uplands, as well as in the door-yards and along the shaded streets of the towns. Although during the coldest weather evincing an apparent inclination to gather into the more sheltered locations, the species may, both winter and summer, be found in much the same situations. It is occasionally observed in company with other species, such as the Junco, Fox Sparrow, House Sparrow, and even the Robin.

Nest-building begins late in April, and eggs have been found until June 15, but the first three weeks of May seem to constitute the height of the breeding season. The nest is commonly well concealed in a bush or ornamental evergreen, and is usually less than ten, often but two or three, feet from the ground.

The measurements of three nests are as follows:

No.	Height	Depth.	Inside top diameter.	Inside middle diameter.	Outside top diameter.	Outside middle diameter.	Outside bottom diameter.	Width of rim.
1.....	5.25	2.00	2.88 x 2.75	2.50 x 2.50	6.50 x 5.00	5.25 x 4.75	4.00 x 3.50	1.50 x 0.56
2.....	4.00	2.50	3.50 x 3.00	2.75 x 2.50	6.50 x 5.50	4.50 x 4.50	3.75 x 2.25	1.75 x 0.75
3.....	3.50	1.75	2.50 x 1.88	2.25 x 1.75	6.00 x 5.00	8.00 x 5.50	5.25 x 4.75	1.50 x 0.75
Average...	4.25	2.08	2.96 x 2.38	2.50 x 2.25	6.33 x 5.17	5.92 x 4.92	4.33 x 3.50	1.58 x 0.69

The female, when flushed from the nest, leaves quietly, and ordinarily seeks to avoid subsequent observation. The well known propensity of this species to desert its breeding place upon slight provocation renders accurate observation upon the nest a matter of some difficulty. According to the writer's experience, a first visit, if due caution be exercised, will not usually result in abandonment, even should the female be in the vicinity at the time; but a second inspection is quite certain to result disastrously. A nest begun on April 28, 1891, was ascertained to contain two eggs on May 6; which data would determine the approximate period of its construction as five or six days. In all but one of the nests examined the maximum number of eggs has been two; the single exception containing three eggs, one of which was fresh, the others being five-eighths incubated (May 15, 1891). These circumstances suggest the possibility that other sets of two eggs, if allowed to remain a sufficient length of time, might have been augmented in a similar manner.

This species apparently sings little during the winter months, but begins to be heard usually about the later part of February,—the twenty-third of this month (1890) being the earliest record. The regular song period is carried well into August, after which time the singing is more or less intermittent, continuing, however, in some seasons until October 28.

The Cardinal is possessed of no mean imitative ability, of which, however, it does not seem to make frequent exhibition, and in regard to which little has apparently been written. On February 23, 1890, a male Cardinal was heard singing on one of the main streets of Wooster, but so closely did the song resemble in every respect the "purly, purly" of the Tufted Titmouse, that until the performer showed himself in plain sight and in the very act of uttering these notes, the belief that they proceeded from such a source was impossible. Similar remarks will equally apply to another Cardinal, which was very successful in reproducing the common call of the

Flicker—imitating it indeed so perfectly as to almost induce an erroneous note-book entry.

GENUS **HABIA** REICHENBACH.

126. *Habia ludoviciana* (LINN.).

Rose-breasted Grosbeak.

An abundant summer resident. Its spring arrival generally occurs during the first week of May. April 28 (1891) being the earliest record. It remains until September, having been latest noted on the twenty-fourth of this month. It is found in suitable locations both on the uplands and on the bottoms, but is apparently most numerously represented on and near the latter.

The species was unusually abundant during the breeding season of 1890. In the months of May and June of that year there were found by the writer, without special search, within four miles of Wooster, twenty-two occupied nests; nearly three times the number recorded for any other year. Certain extensive thickets lying for some distance along both sides of the track of the Pittsburg, Fort Wayne and Chicago R. R., and adjacent to large swamps, seemed to have a special attraction for the birds, since here within a radius of fifty yards were found during that season eleven nests. The next year the same thicket yielded on careful search only three or four nests.

Eggs of this species have been noted from May 17 to July 10 (1892), but the latter date must be considered somewhat exceptional, as a large majority of the nests discovered have been between the twenty-fifth of May and the twelfth of June. The number of eggs is rather more commonly three than four, while five have been but once observed.

The nest is placed usually not over twelve, yet sometimes twenty feet from the ground; and while no particular preference appears to be shown, the thorn (*Cratægus*) is as frequently as any other bush chosen as its site. The nest is seldom found in an orchard, but one discovered June 12, 1892, was so situated. It is often located in a comparatively exposed position, with apparently no attempt at concealment; and is, moreover, occasionally so loosely constructed that the eggs may be counted from below. On June 5, 1892, a set of eggs was taken from the same bush—an elder (*Sambucus Canadensis*)—from which also the year previous eggs had been collected, possibly from the same pair of birds.

A series of ten nests exhibits the following measurements:

No.	Height	Depth.	Inside top diameter.	Inside middle diameter.	Outside top diameter.	Outside middle diameter.	Outside bottom diameter.	Width of rim.
1.....	3.50	2.25	3.00 x 3.00	2.75 x 2.75	6.00 x 4.50	5.00 x 4.50	3.00 x 2.25	1.75 x 0.13
2.....	3.25	1.50	3.25 x 2.75	2.75 x 2.25	5.50 x 4.50	4.50 x 4.50	2.00 x 2.00	2.00 x 0.13
3.....	3.25	2.00	3.25 x 3.00	2.75 x 2.75	6.00 x 5.50	6.00 x 5.25	4.00 x 3.00	2.50 x 0.75
4.....	3.50	1.75	3.38 x 3.00	2.75 x 2.63	6.50 x 4.75	7.00 x 6.00	5.00 x 2.00	2.00 x 0.38
5.....	4.50	1.50	3.00 x 3.00	2.63 x 2.63	6.50 x 5.50	7.00 x 5.00	4.50 x 4.00	2.00 x 0.88
6.....	3.50	2.00	2.88 x 2.75	2.88 x 2.63	5.00 x 4.50	5.50 x 5.50	7.00 x 3.00	1.63 x 0.63
7.....	3.50	2.00	3.25 x 2.75	2.75 x 2.63	6.00 x 4.75	6.00 x 4.50	5.00 x 2.00	2.00 x 0.10
8.....	2.75	1.88	3.13 x 3.00	2.75 x 2.63	6.00 x 5.00	6.00 x 5.00	5.50 x 3.50	2.00 x 0.50
9.....	3.25	1.75	3.25 x 2.88	2.88 x 2.75	4.75 x 4.25	7.50 x 7.00	7.50 x 7.00	1.00 x 0.25
10.....	3.25	1.75	3.25 x 3.00	3.00 x 2.75	5.50 x 4.75	4.75 x 4.00	3.50 x 3.50	1.50 x 0.31
Average..	3.43	1.84	3.16 x 2.91	2.79 x 2.64	5.78 x 4.80	5.93 x 5.13	4.70 x 3.23	1.84 x 0.45

The male apparently to a considerable extent shares the duty of incubation, for he has quite as frequently as the female been discovered on the nest. The sitting parent is not readily disturbed, often remaining until almost touched by the hand.

The Rose-breasted Grosbeak continues in song through May and June, but does not appear to sing much after the middle of July, its song not having been heard later than July 10 (1893).

This species has been observed in the latter part of July feeding upon the seeds of the milkweed (*Asclepias Syriaca*.)

GENUS **PASSERINA** VIEILLOT.

127. *Passerina cyanea* (LINN.).

Indigo Bunting.

A summer resident; ordinarily abundant, yet apparently not every year equally numerous. The earliest date of its spring arrival is April 24 (1892), though it does not usually appear until the second week in May. It remains until October, and while not observed later than the seventh of the month, this perhaps does not represent the limit of its stay.

The species is found on both the uplands and the bottoms, although it seems to be, at least locally, more abundant on the latter, where in late summer and in the fall it assembles into small flocks, frequenting then chiefly the thickets and patches of high weeds. At this time it is often associated with other Sparrows, particularly the Field Sparrow and the Song Sparrow. For a bird so common, its nests seem in this locality to be easily overlooked, since a large amount of careful searching has resulted in the discovery of but a single nest containing eggs, this being on June 22, 1890.

The song of this species may be heard from the time of the bird's appearance in spring until late in July, but it has not been detected later than July 30 (1893). On one occasion a male was observed singing on the wing, much after the manner of the Bobolink, continuing his song until in soaring flight he reached the ground.

GENUS **SPIZA** BONAPARTE.

128. *Spiza americana* (GMEL.).

Dickeissel; Black-throated Bunting.

A rare summer resident. Arrives in May, the third of the month being the earliest date recorded. It was not observed during 1893. The writer is informed by Mr. W. E. Henderson that this species was present in much more than ordinary numbers and was common during the summer of 1894. A nest containing four fresh eggs was taken by the same gentleman on July 8 of that year.

The Dickcissel is almost exclusively a bird of the upland fields, being very rarely noted anywhere on the bottom-lands, even in the spring.

FAMILY TANAGRIDÆ. TANAGERS.

GENUS *PIRANGA* VIEILLOT.129. *Piranga erythromelas* VIEILL.

Scarlet Tanager.

A common summer resident, but usually most numerous during the spring migration. The dates of its arrival vary from May 1 to May 7, and it lingers in fall usually until late in September, being in 1890 last observed on October 3.

The breeding season begins about the middle of May, completed nests having been noted on the twenty-second of this month. It is exceptional to find other than incubated eggs after the middle of June. While a woodland situation is commonly chosen, an orchard tree is not infrequently the nesting site, particularly if the orchard be in proximity to a tract of woods.

The measurements of four nests are as follows:

No.	Height.	Depth.	Inside top diameter.	Inside middle diameter.	Outside top diameter.	Outside middle diameter.	Outside bottom diameter.	Width of rim.
1.....	3.00	1.75	2.75 x 2.50	2.25 x 2.25	5.50 x 4.00	6.00 x 4.50	3.50 x 2.50	2.25 x 0.50
2.....	3.00	1.75	2.25 x 2.25	2.25 x 2.25	4.25 x 3.50	5.00 x 4.00	3.75 x 3.25	1.00 x 0.85
3.....	2.00	1.25	2.50 x 2.25	2.25 x 2.10	4.25 x 3.50	5.25 x 3.75	3.75 x 2.75	1.25 x 0.50
4.....	3.50	2.00	3.00 x 2.50	3.00 x 2.45	6.00 x 4.25	5.50 x 4.50	4.00 x 3.50	1.80 x 0.50
Average	2.88	1.69	2.63 x 2.38	2.44 x 2.26	5.00 x 3.81	5.44 x 4.19	3.75 x 3.00	1.58 x 0.46

This species is a frequent nurse of the Cowbird, and often when the egg of this imposter is present only two or three eggs of the Tanager are deposited. In fact, one nest that was carefully watched from the time of its construction until incubation of the eggs was nearly half completed, contained but one egg of its owner and one of the Cowbird.

The Scarlet Tanager begins to sing soon after its arrival, and continues in song until late in July. It has not been heard subsequent to the twenty-seventh of this month.

FAMILY HIRUNDINIDÆ. SWALLOWS.

GENUS *PROGNE* BOIE.130. *Progne subis* (LINN.).

Purple Martin.

An abundant summer resident. It makes its spring appearance generally between the first and the eighth of April, though in 1892 it was seen on March 25. It usually disappears during the latter part of August or the first days of September; a solitary individual, however, was noted on September 20, 1893.

A Martin box on one of the main streets of Wooster is every spring regularly preempted by the House Sparrows before the arrival of the rightful tenants. The

Martins appear to be in this case more than a match for the Sparrows, for after a contention lasting rarely more than three or four days, always succeed in effectually expelling the intruders.

The first brood of young is hatched some time during the latter part of May, and the second about four or five weeks later. After the young of the earliest brood leave the nest—which event occurs ordinarily about the middle of June—the Martins every year congregate almost daily in the main streets of Wooster, roosting at night chiefly under the eaves of the higher buildings, wherever suitable places are available. These gatherings vary from ten to one hundred birds, reaching their maximum size in the latter part of July and the first part of August, after which time they gradually diminish. They are at first to a large extent composed of young birds and adult males. Until August the birds are observed to alight principally on the telegraph wires and the cornices of the higher buildings, but subsequently they appear to much prefer the court-house and its tall weathervaned tower. They are most active between sunset and dark, and their cackling cry may at this hour be almost incessantly heard. They grow somewhat less noisy as the season advances, but so long as they remain do not usually become entirely silent.

The Martin is one of the first birds astir in the morning, and in May its note is frequently to be heard by half-past three o'clock.

This species has been seen to pursue and to all appearances greatly annoy the Redtailed Hawk, but for just what purpose was not apparent.

GENUS **PETROCHELIDON** CABANIS

131. *Petrochelidon lunifrons* (SAY).

Cliff Swallow.

A common summer resident, but very locally distributed during the breeding season. It arrives between the middle of April and the first of May, the earliest date being April 16 (1893). It seems to practically disappear early in August, and has not been observed later than the twenty-fifth of this month (1890). It has been observed associated with no other species save the Barn Swallow.

Only one breeding colony of any considerable size has been noted; this having been tenanted continuously for a number of years.

Incubation of the first complement of eggs begins about the middle of May; of the second about five weeks later.

GENUS **CHELIDON** FORSTER.

132. *Chelidon erythrogastra* (BODD.).

Barn Swallow.

An abundant summer resident. It arrives usually about April 20, but in 1893 was first seen on April 9. It remains until late in August, not, however, having been noted after the twenty-fifth of this month.

The breeding season begins about the middle of May, and commonly continues until July, two broods being probably reared.

On June 17, 1891, there was discovered in a barn the remains of a nest that had fallen from the side of the rafter to which it had been secured; this accident having of course resulted in the death of the young birds. The parents, nothing daunted, were constructing a second nest in exactly the same location, and on July 1 the female was found sitting upon two incubated eggs.

Two nests of this species present the following measurements :

No.	Height.	Depth.	Inside top diameter.	Inside middle diameter.	Outside top diameter.	Outside middle diameter.	Outside bottom diameter.	Width of rim.
1.....	4.00	1.50	3.00 x 2.88	2.50	5.25 x 3.50	5.00 x 3.00	4.00 x 1.50	1.50 x 0.25
2.....	2.00	1.50	3.00 x 2.50	2.00	4.50 x 3.00	.....	4.00 x 2.50	.....

The wires of the telegraph lines afford of course favorite places of rendezvous for this, as well as other species of Swallows, and it is no unusual occurrence to see a whole brood of young marshalled upon the wires, while the parent birds busily engage themselves providing food for the voracious appetites of their offspring. The habit these Swallows have, of at times fluttering along close to the surface of a small pond, instead of skimming swiftly over, gives them more the appearance of huge butterflies than of birds, and is an interesting performance.

The Barn Swallow is more or less gregarious even during at least a portion of the breeding season, but is most noticeably so in the months of July and August. At this time companies of fifty individuals are commonly encountered, and on July 27, 1893, a flock of 300 was observed.

In the spring of 1891 a perfect albino of this species was secured from among a number of other Barn Swallows, by Mr. E. N. Freeman, of Orrville. By reason of the inconsiderable development of the tail feathers the specimen was presumed to be a female. It was nearly pure white, the only observable diagnostic character of the plumage being the normal white tail markings, made discernible by the somewhat more dusky appearance of the remaining portions of the rectrices.

GENUS **TACHYGINETA** CABANIS.

133. **Tachycineta bicolor** (VIEILL.).

Tree Swallow.

A very rare summer resident; somewhat more common during the spring migration, but not observed in the fall. It seems to be quite irregular and very few records are available. Its earliest appearance was noted in 1893, when six were seen on April 9. On May 15, 1892, a flock of 100 and another of 85 were observed on the bottoms near Wooster, but other than this never more than six have been seen on any one date. It has only twice been noticed in summer: on June 14, 1891, and on July 17, 1892

GENUS **STELGIDOPTERYX** BAIRD.

134. **Stelgidopteryx serripennis** (AUD.).

Rough-winged Swallow.

A common summer resident. The dates of its spring arrival range from April, 8 to April 21. It was observed latest in 1890, when it was seen on August 24.

During the summer it is confined principally to the bottom-lands, where usually, but not always, it breeds in the immediate vicinity of running water. Nesting begins

late in May or early in June, and the complement of five or six, rarely seven, eggs is generally completed between the first and the fifteenth of the latter month. The nest is situated either in a convenient crevice of a stone culvert or bridge abutment, or else in an excavation in the perpendicular face of the bank of a creek. When the last location is selected, the length of the burrow ranges from twenty to sixty inches. This passage has an average diameter of three and one-half inches, but is somewhat enlarged at the nest, which is placed three to eighteen inches from its inner extremity. This latter distance does not seem to be proportionate to the length of the burrow, but varies indefinitely.

The composition of the nest includes straw, grass and weedstalks; and its lining consists of fine grass, small leaves of some species of willow, with sometimes the stalk leaves of wheat or other similar grain, but no feathers of any description. The willow leaves have been present in all the nests examined, and seem to be a characteristic feature. The nest is loosely constructed, and is sometimes quite bulky.

Five nests afford the following measurements:

No.	Height.	Depth.	Inside top diameter.	Outside top diameter.	Outside bottom diameter.	Width of rim.
1.....	2.50	1.25	2.50 x 2.25	8.50 x 4.34	7.50 x 4.00	3.00 x 0.25
2.....	2.00	0.75	2.75 x 1.75	7.00 x 3.50	.....	.....
3.....	2.50	1.25	2.50 x 2.00	6.50 x 4.50	.....	.....
4.....	2.75	1.25	2.50 x 2.25	7.00 x 4.50	10.00 x 4.50	2.00 x 0.88
5.....	3.00	1.25	2.62 x 2.50	6.00 x 5.00	.....	.....
Average.....	2.55	1.15	2.58 x 2.15	7.00 x 4.7	8.75 x 4.25	2.50 x 0.57

As will be noticed, the maximum outside bottom diameter is sometimes much greater than that at the top, but this is partially accounted for by the fact that the lower portion of the nest is often so loose that anything like accurate measurement is practically impossible. The frequent great difference between the extremes of similar outside dimensions of the same nest is of course due to the greater possibility for extending the nest longitudinally in the passage.

A nest, despoiled of its contents in 1891 was the next year tenanted by possibly the same pair; but this is apparently an exceptional occurrence, since the same breeding place is rarely occupied two years in succession. The incubating female is without difficulty induced to fly out, a stick thrust into the passage generally proving immediately effective, though sometimes the bird withdraws into the burrow beyond the nest.

FAMILY AMPELIDÆ. WAXWINGS, ETC.

SUBFAMILY AMPELINÆ. WAXWINGS.

GENUS AMPELIS LINNÆUS.

135. *Ampelis cedrorum* (VIEILL.).

Cedar Waxwing.

Irregularly abundant; probably a permanent resident, though rarely observed during the winter months. It is generally seen in flocks, except during the breeding season; but is seldom associated with other species.

Nest-building is begun sometimes by the first of June, and the four or five young are usually well fledged by the middle of July. Most of the nests observed have been situated in apple orchards.

FAMILY LANIIDÆ. SHRIKES.

GENUS LANIUS LINNÆUS.



NORTHERN SHRIKE, REDUCED.

136. *Lanius borealis* VIEILL.

Northern Shrike; Butcher-bird.

A tolerably common winter resident. It is probably present every year, although in apparently somewhat irregular numbers. Specimens in the writer's collection were taken on November 5 and December 26, 1892.

137. *Lanius ludovicianus excubitorides* (SWAINS.).

White-rumped Shrike.

A tolerably common summer resident from March 25 to September 21. It seems to be more frequently observed on the bottoms, though occurring also on the uplands.

Two nests taken were situated in a moist meadow along Killbuck Creek. They were respectively four, and four and one-half feet from the ground, and quite well concealed both being placed in thorn bushes (*Crataegus*). The materials consisted of twigs of the thorn bushes, weedstalks, grass and straw; with a neat lining of fine grass, gray vegetable fibres, moss and cattle-hair. One of these nests was taken June 7, 1890, and contained five eggs, which were three-eighths incubated; the other on May 29, 1892, and contained six eggs, in which incubation was one-eighth advanced.

The measurements of these two nests are as follows:

No.	Height	Depth.	Inside top diameter.	Inside middle diameter.	Outside top diameter.	Outside middle diameter.	Outside bottom diameter.	Width of rim.
1.....	4.50	2.00	3.00 x 2.75	3.00 x 2.75	5.50 x 4.50	6.00 x 4.00	4.00 x 2.00	2.00 x 0.75
2.....	6.00	3.00	3.50 x 2.75	3.25 x 3.12	7.00 x 5.50	6.00 x 5.50	5.50 x 5.00	1.75 x 0.63

Mr. W. E. Henderson mentions the discovery of a nest containing seven eggs, which seems sufficiently unusual to be worthy of record.

The breeding Shrikes of this County are intermediate between *Lanius ludovicianus* and *L. ludovicianus excubitorides*, but judging from the specimens examined, they appear on the whole to most closely approach the latter, and may, at least for the present, stand as such.

FAMILY VIREONIDÆ. VIREOS.

GENUS VIREO VIEILLOT.

SUBGENUS VIREOSYLVA BONAPARTE.

138. *Vireo olivaceus* (LINN.).

Red-eyed Vireo.

A common summer resident. Its spring arrivals, as noted, are from May 3 to 15, inclusive. The latest fall date is October 3 (1891), but the species generally disappears in September.

It affects both the uplands and the lowlands, but is for the most part confined to the woods, breeding preferably in the timbered ravines and near the borders of the forests.

The Red-eyed Vireo sings steadily from the time of its arrival until about the middle of August, and thereafter more or less intermittently usually as long as it remains, the latest song date being October 3 (1891).

139. *Vireo gilvus* (VIEILL.).

Warbling Vireo.

An abundant summer resident; somewhat more numerous at the time of the spring migration. It appears ordinarily during the first week of May, and remains until late in September. Extreme dates are April 28, 1891, and October 2, 1892.

In most situations excepting the woodlands, the present species, particularly during the breeding season, replaces to a great extent the Red-eyed Vireo. It occurs most commonly along the sparsely timbered portions of the streams, as well as in the vicinity of rural dwellings and the well shaded streets of the towns.

The nesting season is initiated during the latter part of May, and eggs may be obtained at almost any time in June. The breeding place preferred seems to be an apple orchard, and the nest when thus located is usually from four to twenty feet from the ground, but elsewhere is commonly at an altitude of between twenty-five and forty feet. Aside from orchard trees, nests have been detected in maples (*Acer rubrum*), in wild cherry trees (*Prunus serotina*) and in willows.

The measurements of three nests are as follows:

No.	Height.	Depth.	Inside top diameter.	Inside middle diameter.	Outside top diameter.	Outside middle diameter.	Outside bottom diameter.	Width of rim.
1.....	2.00	1.50	1.88 x 1.88	1.88 x 1.88	3.38 x 2.88	3.50 x 3.00	2.75 x 2.00	1.00 x 0.38
2.....	2.50	1.50	2.00 x 1.75	2.25 x 2.00	2.88 x 2.38	3.63 x 2.75	1.75 x 1.38	0.56 x 0.06
3.....	2.25	1.65	2.25 x 1.75	2.20 x 2.05	3.10 x 2.50	3.15 x 2.50	1.50 x 1.25	0.50 x 0.30
Average..	2.25	1.55	2.04 x 1.79	2.11 x 1.93	3.12 x 2.59	3.43 x 2.75	2.00 x 1.54	0.69 x 0.25

A nest discovered on June 26, 1892, in an almost inaccessible position in an apple tree, was ascertained to contain nearly fledged young. One of these had by accident become entangled in some of the external fibres of the nest, and having fallen, hung suspended by the feet. This was indeed a very unfortunate position for the fledging, and we undoubtedly earned its gratitude by affording it the relief which it had been of course unable to obtain from its anxious parents.

The Warbling Vireo sings regularly until about the first of August, and subsequently, though less frequently, until into September, the latest date of song heard being in 1892, on September 23. This species has a curious habit of most unconcernedly singing although its home be quite closely approached, and it sometimes continues its song even while its nest is in process of being removed.

SUBGENUS **LANIVIREO** BAIRD.

140. **Vireo flavifrons** VIEILL.

Yellow-throated Vireo.

Tolerably common as a summer resident, but most numerous in spring, arriving ordinarily between the first and the seventh of May. It has not been observed later than July 28 (1892), but it probably remains until at least the middle of August. It is confined principally to the tall timber, being found on both the uplands and the bottoms.

It may be heard in song from the time of its appearance in spring until the latter part of July. Its silence after the first of August perhaps accounts for its having escaped any subsequent notice, since it is much oftener heard than seen.

FAMILY **MNIOTILTIDÆ**. WOOD WARBLERS.

GENUS **MNIOTILTA** VIEILLOT.

141. **Mniotilta varia** (LINN.).

Black and White Warbler.

A common spring transient and very rare summer resident. It makes its appearance between the first and the fifteenth of May, and during the spring migration frequents the woods on both the uplands and the bottoms, being often associated with other Warblers. In summer it has been noted principally in the wooded ravines adjoining the lowlands.

GENUS **HELMINTHOPHILA** RIDGWAY.

142. **Helminthophila pinus** (LINN.).

Blue-winged Warbler.

A rare summer resident; somewhat more numerous in spring, arriving between the first and the tenth of May. It is seldom seen on the uplands, but affects chiefly the thickets of the bottoms. Owing no doubt to the character of the localities frequented, it is generally heard rather than seen.

143. *Helminthophila peregrina* (WILS.).

Tennessee Warbler.

A spring and fall transient; tolerably common, though somewhat irregular. It has been observed in spring between May 15 and May 24; in fall from September 21 to October 7. It was most numerous during the spring of 1892. It frequents thickets and woodlands generally, being found often in company with other Warblers. Its song is heard quite regularly during the spring migration.

GENUS *DENDROICA* GRAY.**SUBGENUS *PERISSOGLOSSA* BAIRD.****144. *Dendroica tigrina* (GMEL.).**

Cape May Warbler.

A transient visitor; apparently rare in spring, but tolerably common in the fall, though of rather local occurrence. In the spring it has been only once seen,—on May 6, 1892; but in the autumn it has been observed from September 25 to October 7. It appears to somewhat prefer the lowlands, and has been chiefly noted in the valley of the Killbuck, usually near the stream, in thickets and the less heavily wooded portions of the forests.

SUBGENUS *DENDROICA* GRAY.**145. *Dendroica æstiva* (GMEL.).**

Yellow Warbler.

An abundant summer resident. Its spring arrival has been usually between April 21 and April 25, and it generally remains until September, not, however, having been noted later than the seventh of this month. It is apparently more numerous on the bottoms than on the uplands.

Thickets along streams seem to furnish the most acceptable nesting sites, and in this locality a decided preference is shown for the elders (*Sambucus Canadensis*), much the greater number of nests found being situated in these bushes.

The three eggs of a set (containing also one egg of the Cowbird) taken May 29, 1891, are somewhat peculiar in pattern of coloration, and exhibit considerable difference in size. The ground color is greenish white; in one of the eggs almost immaculate, with near the larger end a very few minute dots of clove brown and dull lilac and one long streak of clove brown. A second egg is similar to the one described, but is slightly more heavily marked, though much less so than is usual in eggs of the species. The other egg is thickly marked,—but still somewhat less so than average specimens—with small spots of fawn color, drab and dull lilac, these being in a broad zone about the central portion of the egg. These eggs measure respectively: .70 x .52, .71 x .52, .62 x .44.

The height of the breeding season is apparently between the middle of May and the first of June, as a large proportion of the nests found contained, or evidently had contained, unincubated eggs during this period. Incompleted nests have been noted by May 11 (1890), and eggs have been found as late as June 22 (1891).

Eight nests exhibit the following measurements:

No.	Height.	Depth.	Inside top diameter.	Inside middle diameter.	Outside top diameter.	Outside middle diameter.	Outside bottom diameter.	Width of rim.
1.....	3.50	1.63	2.00 x 1.70	2.00 x 1.75	2.75 x 2.44	2.75 x 2.50	1.50 x 1.50	0.50 x 0.25
2	3.50	1.63	1.88 x 1.63	1.88 x 1.88	3.50 x 2.75	3.00 x 3.00	2.50 x 2.50	1.12 x 0.63
3.....	3.63	1.38	1.63 x 1.50	2.00 x 1.75	2.75 x 2.50	2.88 x 2.63	1.63 x 1.25	0.63 x 0.25
4	3.00	1.50	1.88 x 1.75	1.95 x 1.88	2.88 x 2.50	2.75 x 2.63	2.25 x 1.00	0.50 x 0.25
5.....	2.50	1.50	2.00 x 1.88	2.00 x 1.75	3.25 x 2.25	3.38 x 3.00	2.25 x 1.75	0.56 x 0.19
6	2.00	1.20	1.85 x 1.65	2.10 x 1.95	2.90 x 2.50	3.50 x 3.00	3.00 x 2.60	0.85 x 0.35
7.....	3.25	1.25	2.00 x 1.70	2.10 x 2.05	2.65 x 2.15	3.25 x 2.50	2.75 x 1.00	0.50 x 0.20
8.....	2.15	1.50	1.85 x 1.60	2.15 x 2.00	2.85 x 2.65	2.75 x 2.75	2.50 x 2.00	0.75 x 0.35
Average	2.94	1.43	1.89 x 1.68	2.02 x 1.88	2.94 x 2.47	3.03 x 2.75	2.30 x 1.70	0.68 x 0.31

This species sings very persistently for the first few weeks after its advent in spring, and quite regularly up to about the beginning of July, continuing more or less intermittently until the last of this month. The latest song was recorded in 1891, on July 28.

146. *Dendroica cærulescens* (GMEL.).

Black-throated Blue Warbler.

A common transient visitor; much more numerous in spring than in fall. It is however, somewhat irregular in numbers, being decidedly less frequent in some seasons than in others. It appears usually during the first few days of May, and remains for two or three weeks. It lingered late in 1892, being last observed on June 1. The earliest record of its arrival is April 23 (1893).

It has been noted in the fall on but two occasions,—October 5, 1890, and September 18, 1892. On the latter date one was seen singing. The Black-throated Blue occurs with other of the Warblers in the thickets and woods of both the uplands and the bottoms.

147. *Dendroica coronata* (LINN.).

Myrtle Warbler.

An abundant transient visitor; somewhat more numerous in fall than in spring. It has been observed as early as April 16 (1893), but does not usually appear until several days later. It remains until about May 22. In autumn it has been noted from September 25 to November 6. The lowlands along the creeks seem to be favorite resorts for this species, and during the fall it may there be found often in small flocks. With the possible exception of *Dendroica striata* the Myrtle Warbler is by far the most numerous of the transient species of the family.

148. *Dendroica maculosa* (GMEL.).

Magnolia Warbler.

A transient visitor; one of the less frequent species. It is sometimes tolerably common, but has been observed only between May 11 and May 22. It is apparently

of most regular occurrence in the thickets bordering woodlands and in the undergrowth of the forests.

149. *Dendroica cærulea* (WILS.).

Cerulean Warbler.

Rare; probably occurring solely as a transient visitor. It was noted only in 1891, when on May 8 an adult male was shot and two other individuals were seen. Another was observed on May 10, and one also on May 15. These were all apparently in full song, and had not this been the case, would have passed unnoticed amid the multitudes of migrant Warblers which at this season throng the tops of the forest trees in the valley of the Killbuck.

150. *Dendroica pensylvanica* (LINN.).

Chestnut-sided Warbler.

A tolerably common transient from May 14 to May 20. It is also a very rare summer resident, but has not been observed in the fall. The only summer records are for 1893, in which year one of these birds was, on July 9, seen singing in the woodland of the Killbuck Valley, at a locality about four miles northwest of Wooster. On July 10 and 16 of the same year, a Chestnut-sided Warbler, quite probably the former individual, was again heard in the same vicinity.

The species frequents almost exclusively the woodlands, moving among the branches of the highest trees, and also, though apparently less preferably, in the low undergrowth.

151. *Dendroica castanea* (WILS.).

Bay-breasted Warbler.

A very rare transient visitor. The only dates for this species are May 22 and 24, 1892. The birds seen were in rather open woodland, in the lower portions of the trees, and were without difficulty closely approached.

Although Wheaton mentions¹ this species as occurring "in great numbers" in fall, the writer has strangely enough failed to detect it during that season. Many Black-poll Warblers have been shot in the hope of securing specimens of *D. castanea*, as the latter might of course, if not captured, readily pass for *D. striata*.

152. *Dendroica striata* (FORST.).

Black-poll Warbler.

An abundant fall transient, but seen during the spring season only in 1892, when it was common from May 21 to May 30. In the autumn it has been observed from September 18 to October 16. It may be found almost wherever there are trees or bushes, and in the streets of the towns is, of all the transient Warblers, the one most frequently occurring, and the species most numerously represented. It is seen occasionally in small straggling companies, consisting, however, of rarely more than six or seven individuals.

¹Geological Survey of Ohio IV, 1882, p. 255.

153. *Dendroica blackburniæ* (GMEL.).**Blackburnian Warbler.**

Although Wheaton considers¹ this bird an abundant transient in the vicinity of Columbus, it is seemingly very rare in Wayne County. Only three individuals have been noted; two on May 20, 1890, and one on May 20, 1892. It is possibly more common than is thus indicated.

154. *Dendroica virens* (GMEL.).**Black-throated Green Warbler.**

A common spring transient from May 1 to May 22. It is apparently rare in the fall, as there is available but one record for that season: October 4, 1891. It may be found in the woods of both the uplands and the bottoms, and there its very distinctive song may be heard almost any day during its spring migration.

GENUS *SEIURUS* SWAINSON.

OVEN-BIRD, NATURAL SIZE.

155. *Seiurus aurocapillus* (LINN.).**Oven-bird; Golden-crowned Thrush.**

A rare summer resident. It is for a while in May common in certain localities, especially in portions of the Killbuck Valley, where at this season it occurs associated with the next species. It arrives early in May, and remains until the middle of October (May 1 to October 16). It has seldom been noted on the bottom-lands except during the migrations, since it retires for the summer to the most secluded portions of the upland forests.

156. *Seiurus motacilla* (VIEILL.).**Louisiana Water Thrush.**

Rare summer resident. A certain portion of the valley of the Killbuck, lying between four and five miles northwest of Wooster, is the only locality where this species has in summer been observed, and although it there probably breeds, its nest has not been discovered. In this place the species is usually common for a few days in spring, frequenting the woods and thickets along the creek, together with the many mossy ravines in the adjacent woodland. It has been in spring occasionally

¹Geological Survey of Ohio IV, 1882, p. 252.

noted in swamps in other portions of the Killbuck Valley, but no other spot seems to be quite so congenial as the one above mentioned,

This Warbler arrives usually late in April, the twenty-first of the month (1891) being the earliest date recorded. It has not been observed later than July 28 (1892). It is generally in full song at the time of its spring appearance, and for a season its notes form one of the characteristic bird melodies of its favorite haunts.

GENUS *GEOTHLYPIS* CABANIS.

SUBGENUS *OPORORNIS* BAIRD.

157. *Geothlypis agilis* (WILS.).

Connecticut Warbler.

A very rare transient visitor. The only record is a single specimen taken October 2, 1892.

SUBGENUS *GEOTHLYPIS* CABANIS.

158. *Geothlypis philadelphia* (WILS.).

Mourning Warbler.

Apparently a very rare transient visitor. It has been positively identified but once,—on May 14, 1893, when a single adult male was found in the thick undergrowth of the woodland along Killbuck Creek, about four miles northwest of Wooster.

159. *Geothlypis trichas* (LINN.).

Maryland Yellow-throat.

An abundant summer resident. The dates of its appearance range from April 23 to May 7, and it is present generally until the first of October, although less numerous during September. Dr. Wheaton¹ writing probably with regard to the vicinity of Columbus, says that this species "remains until the first of September."

It is more common on the bottoms than on the uplands, and though of course a bird of thickets and fencerows, it sometimes wanders away from both. On July 2, 1891, a Maryland Yellow-throat was heard singing in the midst of a large wheat-field, where there seemed nothing to attract it from the presumably more suitable localities in the neighborhood.

The song of this species continues throughout the whole of the bird's summer sojourn, but is more irregular during September and the latter part of August. The date of latest song heard (October 2, 1892,) is coincident with the latest record for the species. In spring it is one of the early morning singers, being often among the first species heard. On May 27, 1890, it was singing at 3:35 A. M.

¹Geological Survey of Ohio IV, 1882, p. 275. *

GENUS **ICTERIA** VIEILLOT.**160. Icteria virens** (LINN.).**Yellow-Breasted Chat.**

A rare summer resident. It has not been noted earlier than May 17, nor later than August 3, but probably neither of these dates represents the extreme of its presence here.

This species on the uplands frequents the woods and the dense thickets, but on the bottoms is confined apparently to the latter. A nest taken by Mr. J. Hine, near Wooster, June 17, 1893, contained five eggs, two of them, however, being those of the Cowbird. The nest was situated in a hickory sapling in underbrush near the edge of woodland.

Although much has been written concerning the vocal powers of the Yellow-breasted Chat, little attention seems to have been called to its ability for mimicry; yet nevertheless, besides being a wonderful ventriloquist, it manifests at times a remarkable imitative faculty. The different notes of the Robin, Catbird, Brown Thrasher, together with those of many other species, including even the croak of the Green Heron, are all reproduced so faithfully that one begins to wonder whether after all the thicket contains not a number of birds instead of a single Yellow-breasted Chat. It seems, however, that such an exhibition is more rarely given than its ordinary vocal performance. This species has been found in full song on July 4, but later in the season has not been heard singing.

GENUS **SYLVANIA** NUTTALL.

WILSON'S WARBLER, NATURAL SIZE.

161. Sylvania pusilla (WILS.).**Wilson's Warbler.**

A rare transient visitor. Observed in spring from May 22 to June 1, but in autumn only on September 18, 1892. It has been noted principally in thickets along streams, and in the undergrowth of woodland. It is in full song during its spring passage, and its notes constitute a pleasing warble, in part somewhat suggestive of the song of the House Wren.

GENUS **SETOPHAGA** SWAINSON.**162. Setophaga ruticilla** (LINN.).**American Redstart.**

A very rare summer resident, though common as a spring transient. It appears usually during the first week of May, the earliest date being April 30 (1891). It frequents the woods of both the uplands and the bottoms; being often associated with other species of Warblers. It has been observed in summer on but one occasion,—July 27, 1893,—and has been entirely overlooked in the fall. It is generally in song upon its arrival in spring; and was heard singing on July 27.

FAMILY **TROGLODYTIDÆ**. WRENS, THRASHERS, ETC.

SUBFAMILY **MIMINÆ**. THRASHERS.

GENUS **GALEOSOPTES** CABANIS.

163. Galeoscoptes carolinensis (LINN.).**Catbird.**

An abundant summer resident from April 26 to October 2.

The numerous and extensive thickets on the bottom-lands seem to afford particularly favorable nesting sites, since it is there that during the breeding season this species occurs most abundantly. The nests are seldom higher from the ground than six feet, and by far the greater number of those found have been but three and one-half feet or less; but almost always carefully concealed. When the situation is, as occasionally chosen, an orchard, the nest is generally at least twelve or fourteen feet from the ground and in the upright fork of a limb. The lining of the nest was ascertained to be in nearly every case entirely of dark-colored roots, the only exceptions containing in addition a small quantity of grass and weedstalks. Three or four eggs generally constitute a complement; five having been but twice recorded. Occupied nests have been noted from May 14 to June 26.

The Catbird sings very continuously from the time of its arrival until August, and subsequently more or less intermittently until September. The latest date of song heard is September 18 (1892).

GENUS **HARPORHYNCHUS** CABANIS.

SUBGENUS **METHRIOPTERUS** REICHENBACH.

164. Harporhynchus rufus (LINN.).**Brown Thrasher.**

A common summer resident. It appears sometimes by April 1, though not infrequently several days later. Not observed in fall after September 17 (1893).

The breeding season continues from the first of May until about the first of July, but nests with eggs are rarely to be found subsequent to the middle of June. The usual nesting site is a brush-heap or a sheltered thicket; a location offering good opportunity for concealment being apparently preferred.

The two nests measured present the following dimensions:

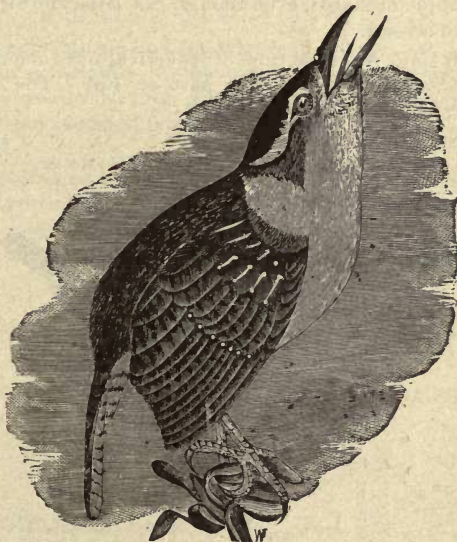
No.	Height.	Depth.	Inside top diameter.	Inside middle diameter.	Outside top diameter.	Outside middle diameter.	Outside bottom diameter.	Width of rim.
1.....	3.50	1.75	4.00 x 3.00	3.50 x 2.75	6.50 x 6.00	7.00 x 7.00	5.00 x 4.00	2.50 x 0.75
2.....	4.00	2.00	4.25 x 4.00	3.75 x 2.75	7.50 x 6.50	6.00 x 5.50	5.00 x 4.50	1.50 x 0.50

This species sings quite regularly until into July, but has not been heard in song after than the thirtieth of this month.

SUBFAMILY TROGLODYTINÆ. WRENS.

GENUS **THRYOTHORUS** VIEILLOT.

SUBGENUS **THRYOTHORUS**.



CAROLINA WREN, REDUCED.

165. **Thryothorus ludovicianus** (LATH.).

Carolina Wren.

A common permanent resident; somewhat less numerous in winter. While perfectly at home in the towns, it seems to be partial to the bottom-lands and to the

wooded ravines,—the thickets and swamps along the streams being particularly suitable for its habitation.

A nest visited on May 6, 1890, contained five fully fledged young. This nest was situated in a small barn in the town of Wooster, being placed on the bare floor of a hay loft, close against the side of the building; thus being completely hidden from the outside, though plainly visible from within. The birds entered the nest through a knot-hole in the weather-boarding, but were very shy when conscious of being observed. For some unknown reason, the nest, while containing young, was removed from the loft and placed upon the ground outside, where, however, the parent birds continued their attentions until the young were able to fly.

The Carolina Wren has been observed in song during every month of the year with the exception of December, and it sings with apparently as much vivacity in zero weather as during the most pleasant days of spring.

GENUS **TROGLODYTES** VIEILLOT.

SUBGENUS **TROGLODYTES.**

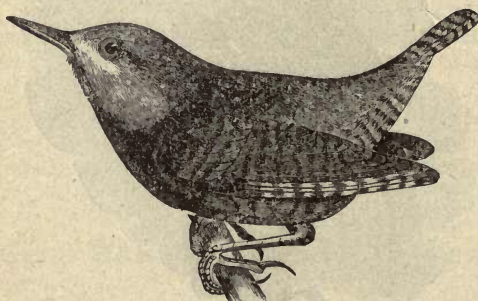
166. **Troglodytes aëdon** VIEILL.

House Wren.

A common summer resident. It appears late in April or early in May, and remains sometimes until October 16, though is unusual after October 1. During the breeding season the apple orchards, even though not adjacent to human habitations, seem to be its favorite resorts.

The House Wren sings from the time of its arrival until about the first of August, but less continuously during the greater part of July. The date of latest song heard is July 30 (1893).

SUBGENUS **ANORTHURA** RENNIE.



WINTER WREN, SLIGHTLY REDUCED.

167. **Troglodytes hiemalis** VIEILL.

Winter Wren.

A rare winter resident; tolerably common during the spring and fall migrations. It has been observed from September 27 to May 15, principally along fencerows, in thickets and in woodland undergrowth.

GENUS **CISTOTHORUS** CABANIS.SUBGENUS **TELMATODYTES** CABANIS.168. **Cistothorus palustris** (WILS.).**Long-billed Marsh Wren.**

A common summer resident from May 5 to September 25. It is to be found in nearly all the more extensive swamps, especially where the cat-tail flag (*Typha latifolia*) abounds. While it of course breeds regularly in this locality, no nests have been discovered, owing to the great difficulty of traversing at the proper season the swamps where it occurs.

It is in song throughout its sojourn here, but sings with much less frequency during the latter part of the summer.

FAMILY **CERTHIIDÆ**. CREEPERS.GENUS **CERTHIA** LINNÆUS.169. **Certhia familiaris americana** (BONAP.).**Brown Creeper.**

A tolerably common spring and fall transient and rare winter resident. During the winter it remains principally in the woods of the bottom-lands, but during the migrations it occurs also on the high ground. Its earliest fall appearance is October 2, and it has never been observed later in spring than May 1; seldom, in fact, after the middle of April.

No positive breeding record has been established, but an unoccupied nest, which in position and structure much resembled that of this species, was discovered on May 7, 1891. This nest was situated about twenty feet from the ground in a crevice behind the bark of a dead tree, in damp bottom-land woods along the Killbuck.

FAMILY **PARIDÆ**. NUTHATCHES AND TITS.SUBFAMILY **SITTINÆ**. NUTHATCHES.GENUS **SITTA** LINNÆUS.170. **Sitta carolinensis** LATH.**White-breasted Nuthatch.**

A permanent resident; common in summer, abundant in fall and winter. It is most numerous in woodland, though in winter it commonly is elsewhere encountered. During the summer it apparently is partial to the bottom-lands and to timbered ravines, but in the fall and winter it is equally if not more abundant in the upland woods, being then frequently associated with Tufted Titmice, Chickadees and Golden-crowned Kinglets.

All the nests which have fallen under the writer's observation have been situated in either natural cavities or the abandoned excavations of Woodpeckers,—in living trees, or trees only partially dead. The breeding season continues usually from about the middle of April until the middle of June, nests with eggs being most common during the first three weeks in May. The disturbance of a nest containing even eggs sometimes occasions on the part of the parent birds an exhibition of great concern, and they repeatedly approach almost within reach, making at intervals swift dashes toward the intruder.

The notes of the White-breasted Nuthatch are most frequently heard during the colder months of the year.

171. *Sitta canadensis* LINN.

Red-breasted Nuthatch.

A very rare transient visitor. The only record for this species is September 26, 1890.

SUBFAMILY PARINÆ. TITMICE.

GENUS *PARUS* LINNÆUS.

SUBGENUS *LOPHOPHANES* KAUP.

172. *Parus bicolor* LINN.

Tufted Titmouse.

A permanent resident; abundant except in summer. It is equally numerous on the uplands and the lowlands.

On October 2, 1892, a Tufted Titmouse was observed industriously hammering away at something in the crotch of a low tree. This object eventually proved to be the half-punctured cocoon of a large moth (*Telea polyphemus*).

The Tufted Titmouse sings more or less continuously all the year, being least frequently heard during December and January. The duration of its maximum song seems to be from about the first of March until some time in June, after which period it sings much less regularly.

SUBGENUS *PARUS* LINNÆUS.

173. *Parus atricapillus* LINN.

Chickadee.

Resident; abundant in winter, but considerably less numerous in summer. During the latter season it is found most frequently in the woods of the bottomlands, though is by no means entirely confined to them; while in winter it occurs almost everywhere, at only this season regularly visiting the yards along the streets of the towns.

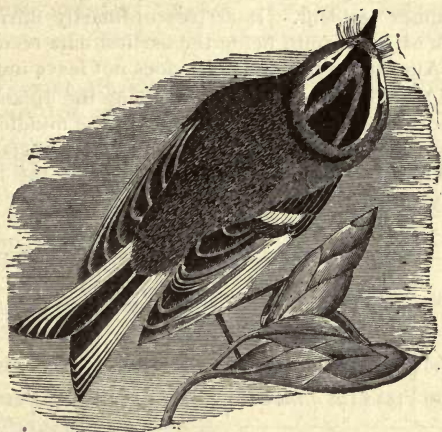
The nesting season begins about the middle of April, full complements of eggs being most common from the first to the fifteenth of May. A second brood is sometimes reared in June. Rather open bottom woodlands, where decaying stumps

abound, seem to be the favorite localities for breeding purposes. The nests situated in these low stumps are rarely over two feet from the ground, and considerable danger threatens from the spring flooding of the bottom-lands and the consequent uninhabitable condition of the nests when the water rises high enough to enter. A nest found by Mr. W. E. Henderson, June 24, 1892, was situated in a cavity in one of the supports of an old rail fence.

FAMILY SYLVIIDÆ. WARBLERS, KINGLETS, GNATCATCHERS.

SUBFAMILY REGULINÆ. KINGLETS.

GENUS **REGULUS** CUVIER.



GOLDEN-CROWNED KINGLET, SOMEWHAT REDUCED.

174. **Regulus satrapa** LIGHT.

Golden-crowned Kinglet.

Abundant in fall and spring; tolerably common as a winter resident. During the last mentioned season it remains chiefly in the shelter of ornamental evergreens, and in the most sheltered portions of the woods, but throughout the migrations it is found nearly everywhere.

It appears in fall with considerable regularity about the first of October, the extreme dates being September 27 and October 3. It departs about the end of the third week in April, but has once been observed to linger until May 1 (1892). It moves often in small scattered companies of usually not more than fifteen individuals; sometimes, though not ordinarily, associating with other birds.

175. **Regulus calendula** (LINN.).

Ruby-crowned Kinglet.

A transient visitor; abundant in the spring, but generally not so numerous in autumn. It has been noted from April 5 to May 15, and from September 23 to Octo-

bér 20. It is found principally in woodlands and thickets, both on the uplands and the bottoms, not being so frequently as the preceding species observed along the streets of the towns.

This species is, of course, regularly in song during the season of its occurrence in spring, and has been heard singing in October fully as well as during the vernal migration.

SUBFAMILY POLIOPTILINÆ. GNATCATCHERS.

GENUS **POLIOPTILA** SCLATER.

176. *Polioptila cærulea* (LINN.).

Blue-gray Gnatcatcher.

A common summer resident. It arrives ordinarily during the latter part of April, the nineteenth of this month being the earliest date recorded. It has not been observed later than August 3, yet it probably does not leave until September.

Throughout the breeding season it affects chiefly the upland woods and the timbered ravines adjacent. Nest-building begins about the middle of May, or even somewhat earlier, and by the middle of June nearly all the nests contain young. Apparently no second brood is regularly reared, but should the first nest be destroyed, another is commonly constructed.

The measurements of two nests are as appended:

No.	Height.	Depth.	Inside top diameter.	Inside middle diameter.	Outside top diameter.	Outside middle diameter.	Outside bottom diameter.	Width of rim.
1.....	2.65	1.70	1.85 x 1.20	1.80 x 1.60	2.25 x 2.10	2.75 x 2.35	2.85 x 2.00	0.75 x 0.35
2.....	2.50	1.60	1.85 x 1.25	1.65 x 1.50	2.05 x 1.90	2.60 x 2.25	2.25 x 1.85	0.50 x 0.25

The well-known scolding note of this species is most conspicuous from April to about the middle of July, being subsequently comparatively seldom heard. The real song of the Blue-gray Gnatcatcher has, in this locality, been detected upon only a single occasion,—August 3, 1890. It is a simple but pleasing ditty, in quality rather suggestive of the songs of some Warblers. It consists of one or two introductory notes, followed by a short warble; and the whole may be represented, very imperfectly of course, by the syllables *zeé-ù*, *zeé-ù*, *kseé-kseé-kseé-ksù*.

FAMILY **TURDIDÆ**. THRUSHES, SOLITAIRES, BLUEBIRDS, ETC.

SUBFAMILY **TURDINÆ**. THRUSHES.

GENUS **TURDUS** LINNÆUS.

SUBGENUS **HYLOCICHLA** BAIRD.

177. *Turdus mustelinus* GMEL.

Wood Thrush.

An abundant summer resident from April 21 to September 27. It may, in general, be regarded as a somewhat more numerous inhabitant of the woods on the bottoms

than of those on the uplands, although it is found in almost all suitable localities. It is particularly numerous in the woods along portions of Killbuck Creek.

The breeding season continues from about the end of the first week in May until the middle of July, but is at its height during the last two weeks of May and the first week in June. The favorite nesting places are wooded ravines and the timbered banks bordering the bottom-lands. Nearly all the nests found have been in saplings or bushes, usually from three to five, never higher than ten, feet from the ground.

The measurements of two nests are as follows :

No.	Height.	Depth.	Inside top diameter.	Inside middle diameter.	Outside top diameter.	Outside middle diameter.	Outside bottom diameter.	Width of rim.
1.....	3.50	1.63	3.13 x 3.00	2.75 x 2.75	4.50 x 4.00	5.50 x 5.25	4.00 x 3.50	0.63 x 0.38
2.....	4.00	2.25	3.00 x 3.00	3.00 x 3.00	4.50 x 4.25	5.25 x 5.00	6.00 x 4.50	1.00 x 0.50

This species is commonly imposed upon by the Cowbird, sometimes to the extent of two or even three eggs. A nest discovered June 28, 1891, contained three eggs of the Wood Thrush and three of the Cowbird. The former, with two of the latter, were perfectly fresh, while the third Cowbird's egg, besides being badly cracked and addled, was buried nearly out of sight among the materials composing the bottom of the nest. These circumstances seem clearly to indicate that this Cowbird's egg had been deposited several days in advance of the other eggs, and while the nest was in process of construction.

The Wood Thrush is in full song from the time of its arrival until the middle of June; subsequently continuing, but with less regularity, up to about the middle of July.

178. *Turdus fuscescens* STEPH.

Wilson's Thrush.

This species is apparently the least numerous of all the transient Thrushes. It has been observed only in 1892, when on May 1, 15, and 22, it was seen near Wooster, in woodland in the valley of the Killbuck. In the collection of Mr. E. N. Freeman, of Orrville, is a single specimen, which was taken in spring near that place.

179. *Turdus aliciae* BAIRD.

Gray-cheeked Thrush.

A tolerably common spring and fall transient, yet owing to the character of the localities frequented, and to its shy, retiring habits, is somewhat liable to be overlooked. It has been noted from May 8 to May 14, and from September 18 to October 2; principally in thickets along streams and the borders of woods, and in the timbered ravines adjoining the lowlands.

The stomach of a specimen shot on September 18, 1892, was filled with berries of the poke-weed (*Phytolacca decandra*), on which the bird was feeding when killed.

180. *Turdus ustulatus swainsonii* (CAB.).**Olive-backed Thrush.**

A tolerably common transient visitor from October 3 to 12, but not observed in the spring. It has been noted principally in timbered ravines, and on the wooded banks bordering the bottom-lands.

181. *Turdus aonalaschkæ pallasii* (CAB.).**Hermit Thrush.**

The most common species of the four transient Thrushes. It has been observed in spring from April 9 to May 11, and in fall from October 15 to October 20. It frequents chiefly the forests areas of the bottoms, and the woods along the upland streams, though is occasionally seen on the outskirts of the towns. It is apparently not in song during its migration through this region.

GENUS *MERULA* LEACH.**182. *Merula migratoria* (LINN.).****American Robin.**

An abundant summer resident. A few sometimes remain over winter. Its arrivals in spring have been from February 5 to 27, according to the severity of the season, but it is usually present before the middle of this month. It generally disappears by the first of November, and occasionally even earlier.

Nest-building is begun commonly about the first of April, and young with short tails, but able to fly, may be seen by the fifteenth of the following month. The breeding season appears to be at its height during May and the latter part of April, and to be practically ended by the first of July, since no occupied nests have been found later than June 26.

This species constructs its nest in all sorts of situations: not infrequently on a fence-post close to the railroad track, or even on the cross-bar of a telegraph pole. A nest discovered April 20, 1890, was on the top of one of the posts supporting an old shed; another, found on April 13 of the same year, was placed on the projecting end of one of the horizontal beams of a carriage bridge over a small stream. A nest was observed May 4, 1890, on one of the iron girders of a railroad bridge near Wooster. It was scarcely three feet below the rails, and directly beneath one of them. When found it contained three eggs, which in due time were hatched, and the young probably (though this was not positively determined) reared in safety. A nest noted May 18, 1890, was situated on the bank of a creek, in a small bush which overhung the water. It was built upon another Robin's nest, evidently an old one, for the new material of the superstructure was in marked contrast to the weatherbeaten appearance of the foundation.

Of sixty-two nests examined, thirty-seven were less than ten feet from the ground; twelve were between ten and fifteen feet; eight between fifteen and twenty; three between twenty and twenty-five; and one each at altitudes of twenty-five and thirty feet.

Robins in a condition of partial albinism seem not to be very uncommon. One in the writer's collection was taken March 9, 1892, and another was secured on March 27 of the same year; but these have, however, only a small proportion of white feathers.

The Robin has been ascertained to feed upon the fruits of the following plants and trees, the three first mentioned, at the season of their abundance, entering regularly and largely into its diet: elder (*Sambucus Canadensis*), poke-weed (*Phytolacca dacandra*), dogwood (*Cornus florida*), laurel oak (*Quercus imbricaria*), basswood (*Tilia Americana*).

During the course of the writer's investigations in the County, two Robin roosts were discovered. One of these was in a thick, bushy swamp along the Pittsburg, Fort Wayne and Chicago R. R. track, about two miles southwest of Wooster; but was seldom observed to be occupied. The other roost was situated in the northern portion of the city of Wooster, where, along parts of two streets, the birds made use of the thick foliaged maple trees. This roost, like the first, was the rendezvous for a comparatively small number of birds, which resorted thither more or less irregularly from 1891 to 1893, inclusive. It was first discovered in 1891, when on April 12, between six and seven o'clock in the afternoon, 494 birds were counted as they flew in from the southern part of the city. This was, of course, the census from only one direction, circumstances preventing more extended observations. Although no birds were seen to enter the roost again that year, some may very probably have been present. During the next year the Robins were noted at the roost on but a single occasion,—a few being seen July 17.

In 1893, however, the roost was used with apparently considerable regularity, both in the spring and after the close of the breeding season. Although similar gatherings in both summer and winter are, of course, well known to take place, the fact that the Robin resorts to roosts in the spring, before, and even for a while during the breeding season, is alluded to by neither Mr. Brewster,¹ Mr. Torrey² nor Mr. Widmann.³ Mr. Brewster states that none were seen at the roosts earlier than June 11, and is inclined to consider this exceptionally early. Small numbers of birds were, however, seen to enter this Wooster roost every few days from March 27 to May 15, after which date none were noticed until August 8. From August 8 to August 31, the flight was almost nightly observed, the number recorded gradually increasing, reaching its maximum towards the latter part of the month.

Throughout this period the largest number seen on any one evening was 265, but since the count was made from a single point, this number probably represents only a fraction of the total number of birds which daily resorted to the roost. None were noted on any occasion earlier than 6.36 P. M., and by 7.15 all had passed; the bulk being seen usually between 6.50 and 7.05 P. M. The time utilized by the birds was thus between sunset and dusk. In passing over the city most of the earlier comers flew quite high, only descending as the roost was neared; but a little later the flight was lowered so as barely to clear the house-tops; while the last flew close to the ground, passing chiefly through openings between the buildings.

The Robin commences to sing within a few days after its arrival, and continues in full song until late in June. Through July it sings regularly, though less frequently, and subsequently is heard more or less intermittently until towards the last of August. Then it is usually silent till late in September, when for a brief period its song is again resumed. The latest record of song is October 19 (1892). The following data indicate the time at which on several days the first note of the Robin was heard:—

May 8 (1891) at 4.03 A. M.;
 May 22 (1890) at 3.55 A. M.;
 May 27 (1890) at 3.25 A. M.;
 July 28 (1892) at 4.00 A. M.

¹ Auk VI., 1890, pp. 360 et seq.

² The Footpath Way, 1893, pp. 153 et seq.

³ Auk XII., 1895, pp. 1 et seq.

GENUS **SIALIA** SWAINSON.**183. Sialia sialis (LINN.).****Bluebird.**

Abundant; usually a permanent resident, though less numerous in winter, but if this season be especially severe, is probably altogether absent. Those individuals of the species which migrate south for the winter apparently return in February.

The breeding season extends from the middle of April to about the first of August, two or three broods being reared. A nest found May 25, 1890, in a small decaying stump, contained well fledged young and one addled egg. The entrance to this nest was only one foot above the ground.

The Bluebird sings regularly from about the middle of February until late in June, but much less frequently thereafter. It may at intervals, however, be heard till October, the latest recorded date of song being October 21 (1892).

HYPOTHETICAL LIST.

The following list is intended to comprise such birds as seem of probable occurrence in the region at present under consideration. Future investigations will doubtless establish Wayne County records for many of the species thus catalogued.

ORDER PYGOPODES.

FAMILY /PODICIPIDÆ.

1. **Colymbus holbœllii** (REINH.).

Holbœll's Grebe.

Given by Wheaton, in his Report on the Birds of Ohio,¹ as a rare transient. It has been taken both on Lake Erie and on the waters of the interior of the State.

FAMILY URINATORIDÆ.

2. **Urinator lumme** (GUNN.).

Red-throated Loon.

A rare transient in Ohio.

ORDER LONGIPENNES.

FAMILY LARIDÆ.

3. **Larus delawarensis** ORD.

Ring-billed Gull.

In Ohio, especially on Lake Erie, a tolerably common species during the migrations.

¹ Geological Survey of Ohio IV, 1882, p. 566.

4. *Sterna forsteri* NUTT.**Forster's Tern.**

A transient visitor; of more or less frequent, though irregular, occurrence in the interior of the State.

5. *Sterna hirundo* LINN.**Common Tern.**

Common as a transient; apparently not a regular summer resident in the State, except on the Lake shore.

6. *Hydrochelidon nigra surinamensis* (GMEL.).**Black Tern.**

Wheaton records this species as a common summer resident in northern Ohio, and as a common transient elsewhere in the State.

ORDER STEGANOPODES.**FAMILY PHALACROCORACIDÆ.****7. *Phalacrocorax dilophus* (SWAINS.).****Double-crested Cormorant.**

A tolerably common transient in Ohio.

ORDER ANSERES.**FAMILY ANATIDÆ.****8. *Anas strepera* LINN.****Gadwall.**

A tolerably common transient visitor; probably also a summer resident in at least portions of the State.

9. *Aythya marila nearctica* STEJN.**American Scaup Duck.**

Transient visitor in Ohio; apparently not abundant.

10. *Aythya collaris* (DONOV.).**Ring-necked Duck.**

According to Wheaton, this species occurs abundantly as a transient in the State.

11. *Oidemia americana* SW. & RICH.**American Scoter.**

Occurs as an occasional winter visitor in the State.

12. *Oidemia deglandi* BONAP.**White-winged Scoter.**

This species has been taken both on Lake Erie and in the interior of the State.

13. *Chen hyperborea* (PALL.).**Lesser Snow Goose.**

Probably occurs, at least sparingly, with the next species.

14. *Chen hyperborea nivalis* (FORST.).**Greater Snow Goose.**

Mentioned by Wheaton as a rather irregular transient in Ohio, apparently more common on the Lake shore than elsewhere in the State.

15. *Anser albifrons gambeli* (HARTL.).**American White-fronted Goose.**

A transient visitor; occurring more or less frequently throughout the State.

16. *Branta canadensis hutchinsii* (RICH.).**Hutchins' Goose.**

Wheaton gives it as a rare transient; but a critical examination of the wild Geese killed in Ohio may possibly determine this subspecies to be of more frequent appearance than it has heretofore been considered.

17. *Olor buccinator* (RICH.).**Trumpeter Swan.**

Has been several times taken in Ohio; and some of the Swans which have from time to time been seen in Wayne County may have been of this species.

ORDER HERODIONES.

FAMILY ARDEIDÆ.

18. *Ardea candidissima* GMEL.

Snowy Heron.

Although not of common occurrence, specimens have been taken in northern Ohio.

19. *Nycticorax nycticorax nævius* (BODD.).

Black-crowned Night Heron.

Wheaton mentions this species as probably breeding in suitable places throughout the State.

ORDER PALUDICOLÆ.

FAMILY GRUIDÆ.

20. *Grus americana* (LINN.).

Whooping Crane.

A rare and probably an irregular transient in the State.

21. *Grus canadensis* (LINN.).

Little Brown Crane.

A rare transient visitor in Ohio.

FAMILY RALLIDÆ.

22. *Porzana noveboracensis* (GMEL.).

Yellow Rail.

A transient visitor; possibly a summer resident, though apparently not very common in the State.

ORDER LIMICOLÆ.

FAMILY PHALAROPODIDÆ.

23. *Phalaropus lobatus* (LINN.).

Northern Phalarope.

A transient visitor in Ohio; but seems to be not very common.

24. *Steganopus tricolor* VIEILL.¹

Wilson's Phalarope.

Like the last, a somewhat uncommon and irregular transient on the streams and lakes of the State. Wheaton mentions its possible summer residence in northwestern Ohio.

FAMILY RECURVIROSTRIDÆ.

25. *Himantopus mexicanus* (MÜLL.).

Black-necked Stilt.

This is a rare species in Ohio, but specimens have been several times taken in the northern part of the State.

FAMILY SCOLOPACIDÆ.

26. *Macrorhamphus griseus* (GMEL.).

Dowitcher.

A rare transient in the State.

27. *Tringa canutus* LINN.

Knot.

Transient visitor; perhaps not uncommon on the larger bodies of water.

28. *Tringa fuscicollis* VIEILL.

White-rumped Sandpiper.

Transient visitor; apparently more frequently found on the Lake shore than elsewhere in the State.

¹ *Phalaropus tricolor* of the A. O. U. Check-List; but the claims of *Steganopus* to full generic rank seem to be perfectly valid. Cf. ELIOT, North American Shore Birds, 1895, p. 222.)

29. *Tringa bairdii* (COUES).**Baird's Sandpiper.**

A spring and fall transient; probably not rare in suitable localities in at least portions of the State.

30. *Tringa minutilla* VIEILL.**Least Sandpiper.**

A common transient, probably throughout the State. It is possibly a rare summer resident on Lake Erie.

31. *Tringa alpina pacifica* (COUES).**Red-backed Sandpiper.**

A common transient; perhaps more numerous on Lake Erie than in the interior of the State.

32. *Ereunetes pusillus* (LINN.).**Semipalmated Sandpiper.**

An abundant transient visitor in Ohio.

33. *Calidris arenaria* (LINN.).**Sanderling.**

A common transient visitor in the State, though apparently most numerous on the shore of Lake Erie.

34. *Limosa fedoa* (LINN.).**Marbled Godwit.**

A transient visitor; probably not uncommon in some portions of the State.

35. *Limosa hæmastica* (LINN.).**Hudsonian Godwit.**

Of less frequent occurrence in Ohio than the preceding species, but has been taken on Lake Erie and also in the interior.

36. *Symphemia semipalmata* (GMEL.).**Willet.**

A transient visitor; possibly a summer resident on the shore of Lake Erie. It appears to be not very common throughout the greater portion of Ohio.

37. *Numenius longirostris* WILS.**Long-billed Curlew.**

A transient visitor; in northwestern Ohio possibly an occasional summer resident.

38. *Numenius hudsonicus* LATH.**Hudsonian Curlew.**

A transient visitor; rare in the State.

39. *Numenius borealis* (FORST.).**Eskimo Curlew.**

A transient visitor; seemingly of rare occurrence in Ohio.

FAMILY CHARADRIIDÆ.

40. *Charadrius squatarola* (LINN.).**Black-bellied Plover.**

Apparently not a common species, but occurring sometimes in the interior of the State.

41. *Charadrius dominicus* MÜLL.**American Golden Plover.**

An abundant transient in Ohio, being found during migration in large numbers in suitable localities.

42. *Ægialitis semipalmata* BONAP.**Semipalmated Plover.**

Common transient visitor; according to Wheaton, most numerous in the fall.

43. *Ægialitis meloda circumcincta* RIDGW.**Belted Piping Plover.**

A summer resident probably only on Lake Erie; a tolerably common transient elsewhere in the State. This, the Mississippi Valley form, seems more likely to occur here than *Ægialitis meloda* from the Atlantic Coast; but no Ohio specimens have been examined.

FAMILY APHRIZIDÆ.

44. *Arenaria interpres* (LINN.).

Turnstone.

A transient visitor; apparently not common in the State.

ORDER RAPTORES.

FAMILY FALCONIDÆ.

45. *Accipiter atricapillus* (WILS.).

American Goshawk.

Of occasional occurrence as a winter visitor in Ohio.

FAMILY BUBONIDÆ.

46. *Surnia ulula caparoch* (MÜLL.).

American Hawk Owl.

A rare winter visitor in the State.

ORDER PASSERES.

FAMILY TYRANNIDÆ.

47. *Contopus borealis* (SWAINS.).

Olive-sided Flycatcher.

A rare transient visitor in Ohio.

FAMILY CORVIDÆ.

48. *Corvus corax principalis* RIDGW.

Northern Raven.

A rare winter visitor in Ohio, chiefly in the northern portion. Although no Ohio specimens of the Raven have been accessible, it seems probable that the form occurring in the State is as above given.

FAMILY FRINGILLIDÆ.

49. *Coccothraustes vespertinus* (COOP.).**Evening Grosbeak.**

Although there appear to be but five published records of the occurrence of this species in Ohio, it is, during a winter favorable to its wanderings, liable to be found in almost any part of the northern half of the State.

50. *Pinicola enucleator canadensis* (CAB.).**American Pine Grosbeak.**

An irregular winter visitor, chiefly to northern Ohio. The American form, as here distinguished, though not admitted to the A. O. U. Check-List, is recognized by Mr. Ridgway, and is apparently tenable as a subspecies.

51. *Loxia curvirostra minor* (BREHM).**American Crossbill.**

An irregular winter visitor, though sometimes numerous even in the southern part of the State.

52. *Loxia leucoptera* GMEL.**White-winged Crossbill.**

Winter visitor; in Ohio, of much less frequent occurrence than the preceding species.

53. *Spinus pinus* (WILS.).**Pine Siskin.**

Wheaton mentions this species as an abundant winter visitor, and as possibly breeding in northern Ohio.

54. *Calcarius lapponicus* (LINN.).**Lapland Longspur.**

A common and moderately regular winter visitor in at least the northern half of the State.

55. *Ammodramus henslowii* (AUD.).**Henslow's Sparrow.**

Recorded by Mr. Lynds Jones¹ as a summer resident at Oberlin, Ohio, where it "was found to be not uncommon during the summer of 1894". Aside from the statement of Audubon², this seems to be the only reliable record of the occurrence of the species in the State. Its appearance in other suitable localities may, however, with reasonable confidence be anticipated.

¹ Auk XII, 1895, p. 241; Bulletin of Wilson Ornithological Chapter, No. 6, January 30, 1896, p. 2.

² Birds of America III, 1841, p. 76.

56. Chondestes grammacus (SAY).

Lark Sparrow.

Rare summer resident in northern Ohio; apparently more common towards the middle of the State.

57. Melospiza lincolni (AUD.).

Lincoln's Sparrow.

A tolerably common transient visitor in Ohio.

FAMILY TANAGRIDÆ.

58. Piranga rubra (LINN.).

Summer Tanager.

A common summer resident in the southern part of the State, but apparently rare in northern Ohio.

FAMILY HIRUNDINIDÆ.

59. Clivicola riparia (LINN.).

Bank Swallow.

Summer resident in some parts of Ohio, but appears to be only transient in others.

FAMILY AMPELIDÆ.

60. Ampelis garrulus LINN.

Bohemian Waxwing.

A winter visitor to northern Ohio.

FAMILY VIREONIDÆ.

61. Vireo philadelphicus (CASS.).

Philadelphia Vireo.

A transient visitor; probably not rare in the State.

62. Vireo solitarius (WILS.).

Blue-headed Vireo.

A transient visitor; apparently not breeding in Ohio.

63. Vireo noveboracensis (GMEL.).**White-eyed Vireo.**

A summer resident in Ohio; probably more common in the southern portion of the State.

FAMILY MNIOTILTIDÆ.

64. Helminthus vermivorus (GMEL.).**Worm-eating Warbler.**

A summer resident in the more southern parts of the State. It probably occurs also in northern Ohio.

65. Helminthophila chrysoptera (LINN.).**Golden-winged Warbler.**

A summer resident; apparently not common in Ohio.

66. Helminthophila rubricapilla (WILS.).¹**Nashville Warbler.**

A common transient visitor in at least portions of the State.

67. Helminthophila celata (SAY).**Orange-crowned Warbler.**

An occasional transient visitor in the State.

68. Compothlypis americana usneæ BREWSTER.**Northern Parula Warbler.**

A transient visitor throughout much of the State, though probably breeding in suitable localities. This species has been on one or two occasions partially identified in Wayne County, but no specimens have been secured.

69. Dendroica dominica albilora RIDGW.**Sycamore Warbler.**

A summer resident, at least formerly, even in northern Ohio, though probably local in its distribution.

¹ Cf. FAXON, Auk XIII, 1896, p. 263.

70. *Dendroica kirtlandi* BAIRD.**Kirtland's Warbler.**

The possibility that Kirtland's Warbler may yet be taken in Wayne County is suggested by the proximity of the type locality of the species, together with the probability that the valleys of the tributaries of the Muskingum River form the highway of migration for many of the birds which breed about Cleveland, or which occur there during the spring season.

71. *Dendroica vigorsii* (AUD.).**Pine Warbler.**

A rare transient visitor in Ohio.

72. *Dendroica palmarum* (GMEL.).**Palm Warbler.**

A common transient visitor, though perhaps somewhat local in the State.

73. *Dendroica discolor* (VIEILL.).**Prairie Warbler.**

Given as a summer resident in northern Ohio, by Wheaton, who says that it is rare. A Warbler seen by the writer in May, 1891, was probably of this species, but the bird was unfortunately not secured.

74. *Seiurus noveboracensis* (GMEL.).**Water Thrush.**

A tolerably common transient visitor in the State.

75. *Geothlypis formosa* (WILS.).**Kentucky Warbler.**

A summer resident in Ohio, but rare and local. On April 23, 1893, an individual, undoubtedly of this species, was seen singing in the woods on the bottom-lands of the Killbuck, in Wayne County. As, however, the bird was not obtained, the circumstance is mentioned merely as a hypothetical record.

76. *Sylvania mitrata* (GMEL.).**Hooded Warbler.**

A rare summer resident in Ohio.

77. *Sylvania canadensis* (LINN.).**Canadian Warbler.**

A transient visitor; not uncommon in the State.

FAMILY MOTACILLIDÆ.

78. *Anthus pensilvanicus* (LATH.).

American Pipit.

A common transient visitor in Ohio.

FAMILY TROGLODYTIDÆ.

79. *Mimus polyglottos* (LINN.).

Mockingbird.

A summer resident; rare even in the southern part of the State, but has been reported breeding near Lake Erie.

80. *Thryothorus bewickii* (AUD.).

Bewick's Wren.

A summer resident in southern Ohio.

81. *Cistothorus stellaris* (LICHT.).

Short-billed Marsh Wren.

A summer resident in the State, but apparently of local distribution. A careful investigation of the numerous swamps of Wayne County would possibly reveal the presence of this species.

FAMILY PARIDÆ.

82. *Parus carolinensis* AUD.

Carolina Chickadee.

A regular summer resident in Ohio, at least from the latitude of Columbus southward.

NOTE.

By reason of an unfortunate misunderstanding, the proof-sheets of pages 243-270 were not submitted to the author for revision. This oversight has resulted in the admission of a number of unpleasant inaccuracies of punctuation, particularly in the generic and subgeneric names; and furthermore has rendered necessary the insertion of the following list of

ERRATA.

- Page 245, 2nd line from bottom, for occasional read occasional.
Page 247, 3d line from top, for *Aegialites* read *Aegialitis*.
Page 247, 13th line from top, *Syrinum* read *Syrnium*.
Page 248, 13th line from bottom, for *valutina* read *velutina*.
Page 249, 14th line from top, for *saccharum* read *Saccharum*.
Page 249, 21st line from top, for prevalent read prevalent.
Page 250, 8th line from bottom, for Chilion read Chelidon.
Page 250, 9th line from bottom, for Progue read Progne.
Page 250, 16th line from bottom, for Spicella read Spizella.
Page 251, 1st line from top for Deudroica read Dendroica.
Page 251, 4th line from top, for pennsylvanica read pensylvanica.
Page 251, 27th line from top, for asia read asio.
Page 252, 21st line from top, for pennsylvanica read pensylvanica.
Page 252, 5th line from bottom, for Erismatur read Erismatura.
Page 252, 9th line from bottom, for valisneria read vallisneria.
Page 255, 6th line from top, for (LINN.) read LINN.
Page 255, 18th line from top, for CEPHI read CEPPHI.
Page 255, 1st line from bottom, for park read part.
Page 256, 5th line from top, for (COUES) read COUES.
Page 256, 7th line from top, for Appearing read Appears.
Page 256, 8th line from bottom, for (GMEL.) read GMEL.
Page 256, footnote, for survey read Survey.
Page 256, footnote, for p. 42 read p. 542.
Page 257, 2nd line from bottom, for hough read though.
Page 258, 4th line from top, for (LINN.) read LINN.
Page 258, 5th line from bottom, for (GMEL.) read GMEL.
Page 258, 10th line from bottom, for Badpate read Baldpate.
Page 258, 11th line from bottom, for (GMEL.) read GMEL.
Page 258, 16 h line from bottom, for (GMEL.) read GMEL.
Page 259, 2nd line from top, for (LINN.) read LINN.
Page 261, footnote, for survey read Survey.
Page 263, 2nd line from top, for LINN. read LINNÆUS.
Page 263, 7th line from bottom, for (LINN.) read LINN.
Page 264, 5th line from top, for (GMEL.) read GMEL.
Page 264, 14th line from top, for (LINN) read LINN.
Page 264, 22nd line from top, for approa h read approach.
Page 264, footnote 4, for i dicated read indicate.
Page 265, 6th line from top, for (AUD.) read AUD.
Page 265, 8th line from bottom, for (LINN) read LINN.
Page 267, 3rd line from top, for (GMEL.) read GMEL.
Page 267, 21st line from top, for were rea l was.
Page 268, 3rd line from top, for (VIEILL) read VIEILL.
Page 268, 12th line from bottom, for occuring read occurring.
Page 269, 14th line from top. for fieldst read fields.
Page 269 4th line from bottom, for shriveled read shrivelled.
Page 270, 4th line from bottom, for preferring read preferring.
Page 271, 10th line from top, for (LINN.) read LINN.
Page 279, 9th line from top, for (LINN.) read LINN.
Page 279, 18th line from top, for (LINN.) read LINN.
Page 280, 4th line from top, for (BONAP.) read BONAP.







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