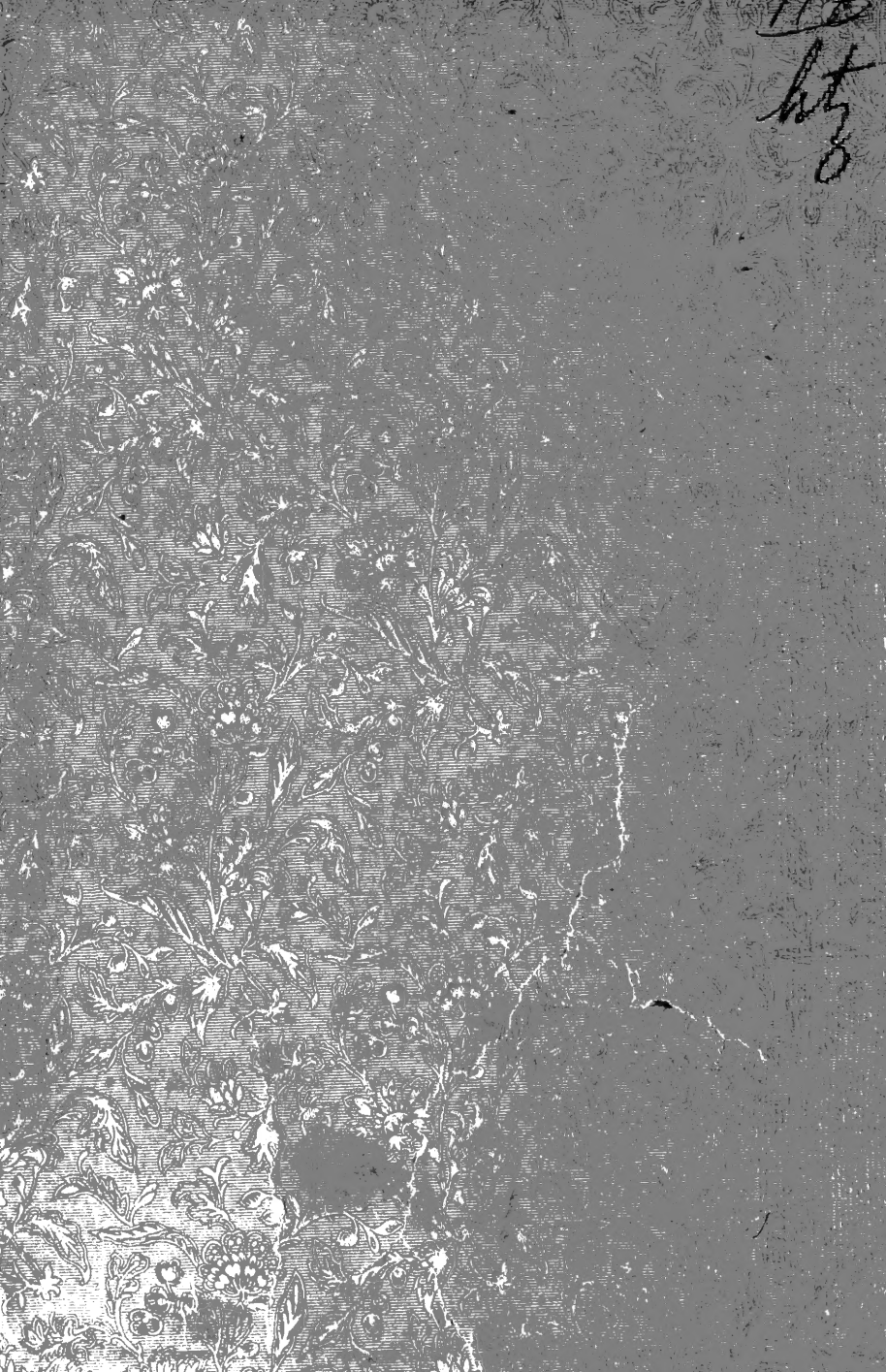


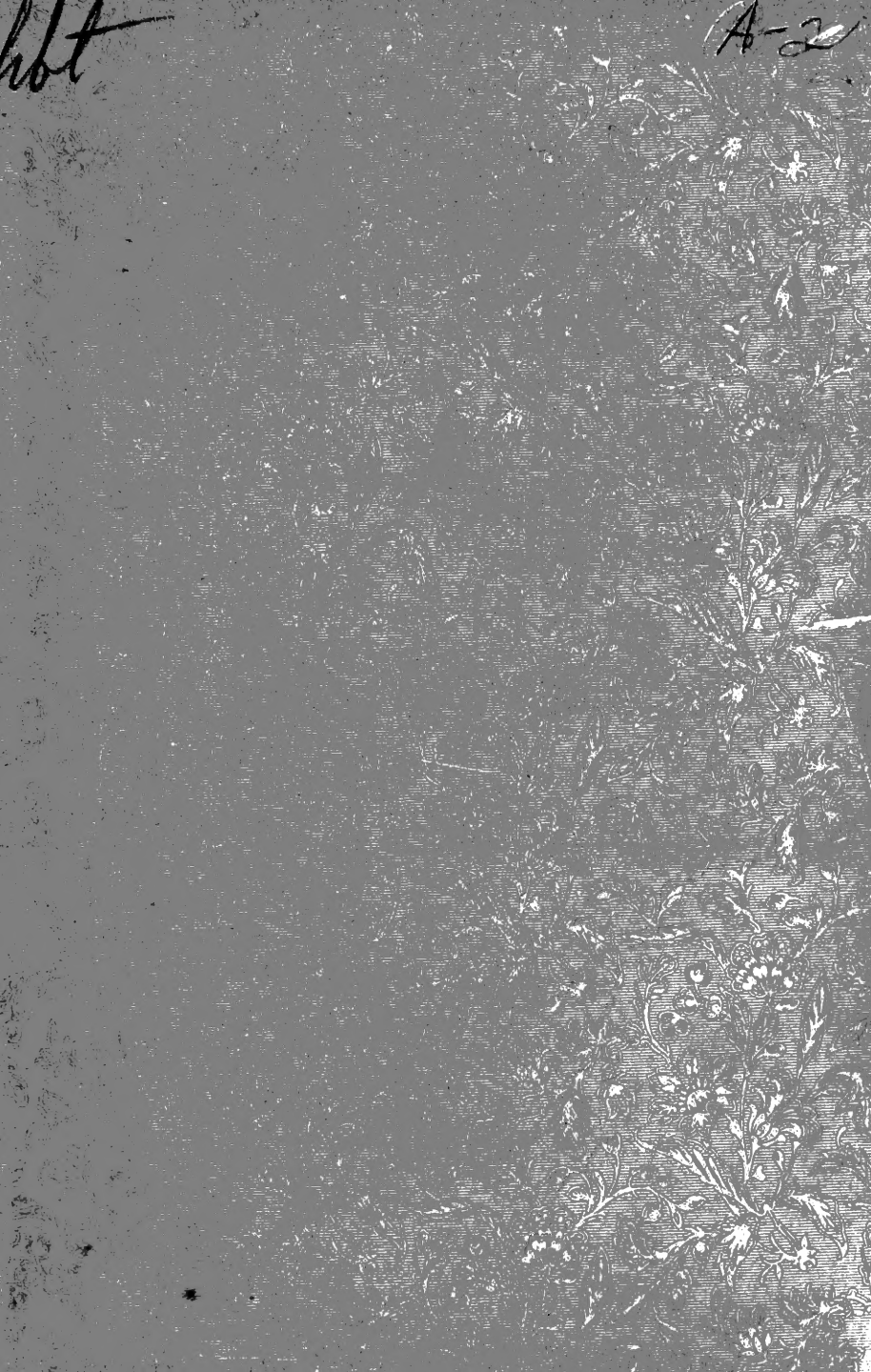


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NEW ENGLAND BIRD LIFE

BEING A

MANUAL

OF

NEW ENGLAND ORNITHOLOGY

REVISED AND EDITED FROM THE MANUSCRIPT OF

WINFRID A. STEARNS

MEMBER OF THE NUTTALL ORNITHOLOGICAL CLUB ETC.

BY

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PART I.—OSCINES

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PUBLISHERS' NOTE.

As circumstances beyond the control of the editor prevent his revision at present of the whole work, that portion embracing the large order *Oscines* is issued in advance as Part I., to be followed, as soon as practicable, by a second volume, completing the treatise.

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BOSTON STEREOTYPE FOUNDRY,
NO. 4 PEARL STREET.

TO

MY FATHER,

THE LATE PRESIDENT OF AMHERST COLLEGE;

AND TO

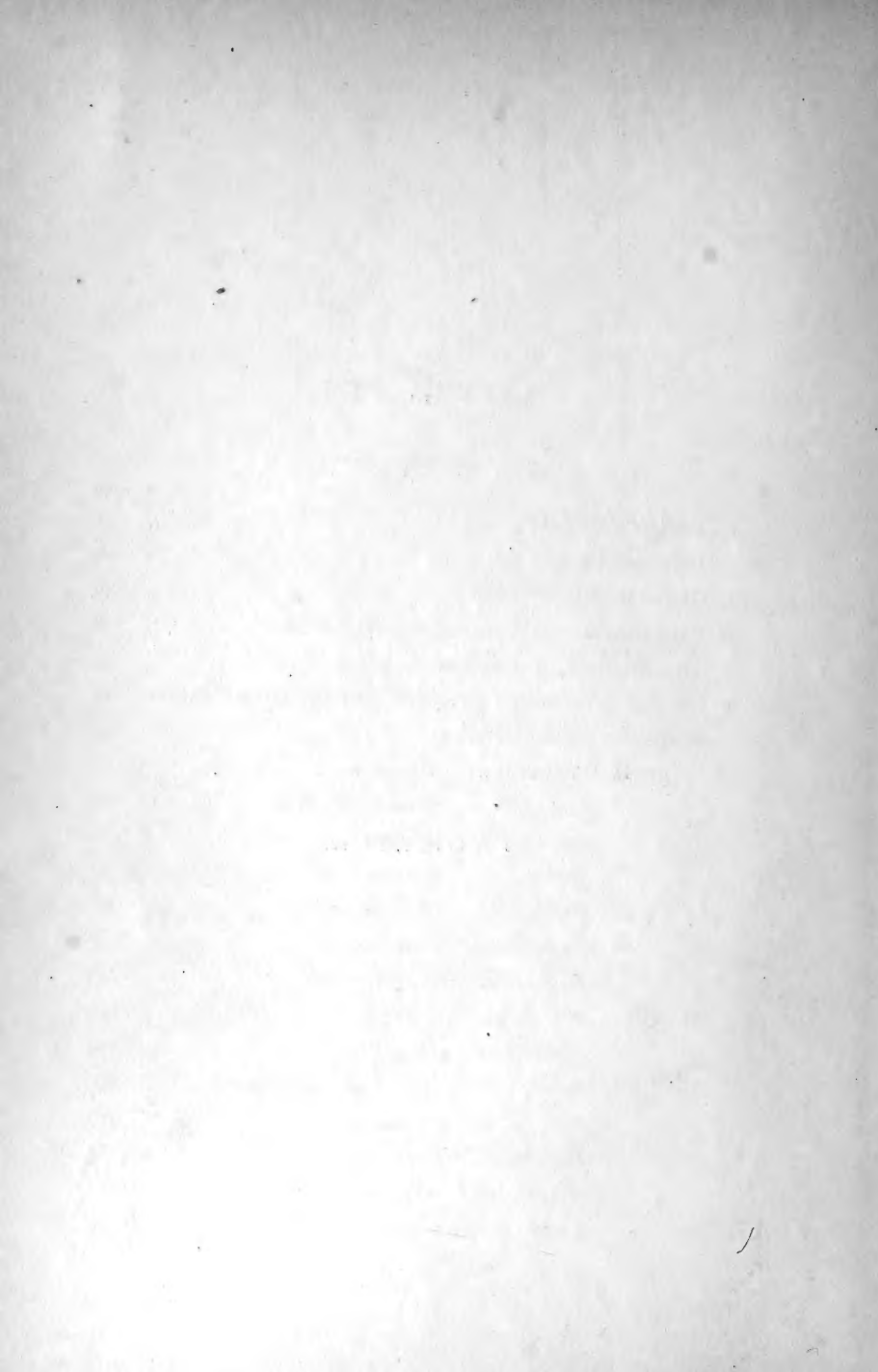
PROFESSOR LOUIS AGASSIZ,

WHO FIRST INSPIRED ME WITH THE LOVE OF SCIENCE,

This Volume

IS AFFECTIONATELY AND RESPECTFULLY

DEDICATED.



CONTENTS.

	PAGE
EDITOR'S PREFACE	5
INTRODUCTION	9
§1. GENERAL DEFINITIONS	9
2. PREPARATION OF SPECIMENS FOR STUDY	21
3. THE SUBJECT OF FAUNAL AREAS	34
4. ON THE LITERATURE OF NEW ENGLAND ORNITHOLOGY	41
BIRDS OF NEW ENGLAND	51
Family <i>Turdidæ</i> : Thrushes	51
<i>Saxicolidæ</i> : Stone Chats, &c.	67
<i>Sylviidæ</i> : Sylvians	71
<i>Paridæ</i> : Titmice	82
<i>Sittidæ</i> : Nuthatches	87
<i>Certhiidæ</i> : Creepers	90
<i>Troglodytidæ</i> : Wrens	93
<i>Alaudidæ</i> : Larks	102
<i>Motacillidæ</i> : Wagtails	104
<i>Sylvicolidæ</i> : American Warblers	106
<i>Tanagridæ</i> : Tanagers	177
<i>Hirundinidæ</i> : Swallows	181
<i>Ampelidæ</i> : Waxwings	191
<i>Vireonidæ</i> : Greenlets	195

	PAGE
Family <i>Laniidæ</i> : [Shrikes	207
<i>Fringillidæ</i> : Finches	214
<i>Icteridæ</i> : [American Starlings	292
<i>Corvidæ</i> : Crows and Jays	313
INDEX OF ENGLISH NAMES	321
INDEX OF SCIENTIFIC NAMES	323

EDITOR'S PREFACE.

ALTHOUGH several publications on the subject of which this volume treats have appeared, no complete and satisfactory exposition of the Bird-life of New England has yet been given to the public. It is now many years since Mr. E. A. Samuels' work appeared; and that treatise, however well answering former requirements of the case, would scarcely be considered to reflect the extent of our present knowledge. Mr. H. D. Minot's later work, which, by the way, is a better one, as far as it goes, than some of his critics seem disposed to admit, treated only the Land and Game Birds of New England, thus leaving untouched no small portion of the subject. In 1868, the present writer published "A List of the Birds of New England;" and, in 1875, a paper of similar plan and scope was issued by Dr. T. M. Brewer, with the obvious intention of correcting the presumed or alleged errors of the "List" of 1868. It is proper to add, however, that the last-named author found it necessary to speedily put

forth two supplementary lists, to include the numerous species which, through his insufficient information and his desire to reflect upon the paper of his predecessor, he had either ignorantly or designedly omitted.

Neither of the catalogues of New England Birds in mention professes to be more than a list of names, with very brief items respecting the life-histories, of the species represented; and the numerous "local lists" which have appeared from time to time are all of the same contracted scope. The most valuable of these will be found to be the writings of Boardman, Verrill, and Maynard for Maine, those of Maynard for New Hampshire, of Allen and Minot for Massachusetts, and especially of Merriam for Connecticut. The Bulletin of the Nuttall Ornithological Club contains numberless notices of New England Birds, by the writers already mentioned, and by Purdie, Brewster, Deane, Bailey, and many others who have contributed so largely to the general store of information which we have acquired. For much assistance in collating and sifting the scattered records which were necessarily to be examined, the editor is under special obligations to his friend, Mr. H. A. Purdie, of Boston.

While it is doubtless true that we have more precise and more nearly complete knowledge of the Birds of New England than we have yet acquired of those of

any equal area in the United States, it is nevertheless a fact that we possess no treatise which adequately reflects our present understanding of the subject. It is the object of the present volume to go carefully over the whole ground, and to present, in concise and convenient form, an epitome of the Bird-life of New England. The claims of each species to be considered a member of the New England Fauna are critically examined, and not one is admitted upon insufficient evidence of its occurrence within this area; the design being to give a thoroughly reliable list of the Birds, with an account of the leading facts in the life-history of each species. The plan of the work includes brief descriptions of the birds themselves, enabling one to identify any specimen he may have in hand; the local distribution, migration, and relative abundance of every species; together with as much general information respecting their habits as can conveniently be brought within the compass of a hand-book of New England Ornithology.

Mr. Stearns undertook this work several years ago, at the writer's suggestion that such a treatise was much to be desired, and could not fail to subserve a useful purpose. Having been diligently revised from time to time, in the light of our steadily increasing knowledge, Mr. Stearns' manuscripts have been submitted to the

editor's final corrections. In revising, and to some extent rewriting, them for publication, the editor has been influenced by the author's request that he would alter and emend at his own discretion; becoming in consequence equally responsible for the accuracy and completeness of the work. It should be added, moreover, that Mr. Stearns has had full permission to make such use as he saw fit of any of the editor's previous publications. The illustrations are all from these sources. The work having thus been brought fully up to date, is now submitted to the public in the confident hope that it will be favorably received by all who are interested in the attractive and agreeable study of our native birds.

E. C.

WASHINGTON, D. C., May 31, 1880.



INTRODUCTION.

§ I. GENERAL DEFINITIONS.

IT will tend to a better understanding of the subject of this treatise to begin the volume with some general definitions respecting the classification and structure of birds, and some explanation of the technical terms used in describing them.

According to Agassiz's principles of classification, the animal kingdom may be arranged in the following divisions:—

Branches: Characterized by the general plan of structure.

Classes: By the manner in which that plan is executed.

Orders: By the complication of structure.

Families: By form.

Genera: By details of execution in special parts.

Species: By the relation of individuals to each other and to their conditions of environment.

Each of these groups may be again divided into intermediate ones, distinguished by the prefix *sub*-. The main divisions of classes, orders, families, genera, and species, are in practice still recognized by all naturalists, however differently they interpret the significance

of such terms, and however widely the adherents of the modern doctrine of Evolution are at variance with those who accept Agassiz's notion of the separate creation and fixity of species. We can only retain the above definition of species with the understanding that the "relation of individuals to each other" is genetic, all species bearing to each other the relation of parent and offspring; and that their relation to "conditions of environment" is largely one of cause and effect.

The study of any particular group of animals constitutes one of the special departments of zoölogical science. Thus, Ornithology is the science of birds; and with it is generally associated Oölogy, or the study of their eggs. Birds form a class of animals easily recognized, among other characteristics of more or less exclusive pertinence, by the possession of *feathers* — those peculiar out-growths from the skin which are found in no other class than that of *Aves*. Birds occupy the next to the highest place in the scale of animal life, being only surpassed in relative rank by the *Mammalia*, to which man himself belongs. Their closest relationships, however, are with the reptiles; both birds and reptiles of the present geologic epoch being believed to have descended from a common ancestry. Birds of previous periods in the world's history had teeth, and presented other strong reptilian characters, which have gradually been lost as the two branches of one common stock diverged from each other in the process of evolution. Progressive specialization of structure and coincident differentiation of function have resulted in the extremely modified creatures we now know as birds, and produced a very clearly defined and completely circumscribed class of

animals, any living member of which may be recognized, as already said, by the possession of feathers. So highly modified has the original type become, that it is one of the triumphs of modern science to have traced the lineage of birds back to its point of departure from reptiles.

Structure of Feathers. A perfect feather, that is, one possessing all the parts a feather can have, consists of a main stem, or central shaft, and a supplementary stem, or after-shaft; each of these bearing two webs or vanes, one on each side. The main stem is divided into two parts: the hard, horny, hollow portion next to the skin, and the softer, pithy part, which alone bears the vanes. At the point where the web begins there is a little pit, called the umbilicus. The after-shaft is of similar structure and likewise bears webs; it springs from the main shaft near the umbilicus; it is commonly smaller than the rest of the feather, and is often wanting; it is not developed on the large stiff feathers of the wings and tail. The vane of a feather consists of a number of flat, narrowly-linear plates closely packed together, standing out from the shaft at a varying oblique angle. Each such plate, or lamina, is called a barb; and each barb bears a series of processes or offsets called barbules, just as the stem bears the barbs. It is these lesser processes that confer coherency upon the barbs, making the vane a web. For they are variously fringed with still lesser processes called barbicels and hooklets, the interlocking of which gives consistency to the whole feather.

Many feathers, however, do not answer to any such description, feathers being endlessly modified in the details of their structure in different birds and on dif-

ferent parts of the same bird. Three principal modifications have led naturalists to recognize as many classes of feathers. These are: the *pennaceous*, characterized as above; the *plumaceous*, or downy; and the *filoplumaceous*, or hairy. Downy feathers have a short weak stem with soft barbs, very slender barbules, rudimentary barbicels, and no hooklets. Hairy feathers are still further reduced to thin stiff shafts, barbs and barbules, lacking the other structures. A feather may be partly downy, and partly pennaceous. There is a particular kind of feather found in various birds, called powder-down. The great bulk of a bird's plumage is made up of the more perfect kind of feathers called contour-feathers, from the fact that they largely determine the apparent shape of the bird; but among these contour-feathers nestle the down-feathers, forming a more or less complete investiture of the body, the thready plumes being intermixed with the latter. One may readily observe these different kinds of feathers on plucking a duck, for example. Although the feathers of a bird usually appear to cover the whole body, they are very seldom everywhere inserted in the skin. They grow in special places called feather-tracts, separated by naked spaces, the form and disposition of these tracts and spaces, thus mutually distinguished, being characteristic to some extent of the different groups of birds, and consequently being of use for purposes of classification. Most birds possess peculiar apparatus for oiling their feathers, in the form of a gland situated on the rump. The development of feathers is analogous to that of hair and scales, though their structure is so much more complicated. The plumage is renewed by the process of moulting.

For convenience of description the exterior of a bird is divided into various parts which have received definite names, and the modifications of these parts are described in certain technical terms, which it is necessary for the student to learn. The "topography" of a bird is illustrated in the accompanying figure (Fig. 1), in which the principal parts are defined and named.

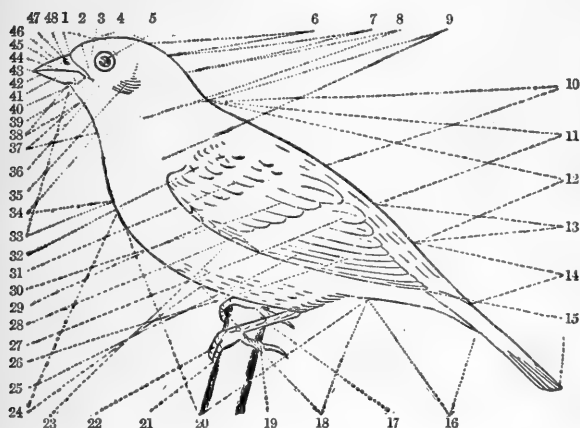


FIG. 1.—TOPOGRAPHY OF A BIRD. 1, forehead (*frons*). 2, lore. 3, circumocular region. 4, crown (*vertex*). 5, eye. 6, hind head (*occiput*). 7, nape (*nucha*). 8, hind neck (*cer-vix*). 9, side of neck. 10, interscapular region. 11, *dorsum*, or back proper, including 10. 12, *notæum*, or upper part of body proper, including 10, 11, 13. 13, rump (*uro-pygium*). 14, upper tail-coverts. 15, tail. 16, under tail-coverts. 17, tarsus. 18, abdomen. 19, hind toe (*hallux*). 20, *gastræum*, including 18 and 24. 21, outer or fourth toe. 22, middle or third toe. 23, side of the body. 24, breast (*pectus*). 25, primaries. 26, secondaries. 27, tertiaries; Nos. 25, 26, 27, are all *remiges*. 28, primary coverts. 29, *alula*, or bastard wing. 30, greater coverts. 31, median coverts, 32, lesser coverts. 33, the "throat," including 34, 37, 38. 34, *jugulum*, or lower throat. 35, auriculars. 36, malar region. 37, *gula*, or middle throat. 38, *mentum*, or chin. 39, angle of commissure, or corner of mouth. 40, *ramus* of under mandible. 41, side of under mandible. 42, *gonys*. 43, *apex*, or tip of bill. 44, *tomia*, or cutting edges of the bill. 45, *culmen*, or ridge of upper mandible, corresponding to *gonys*. 46, side of upper mandible. 47, nostril. 43 passes across the bill a little in front of its base.

Referring to this figure for a general notion of the parts of a bird, we may take up some of those charac-

ters of the bill, feet, wings and tail, with which descriptive ornithology is so largely occupied.

The Bill. Whatever its shape, this part of a bird always consists of an upper and an under mandible, these being its bony framework, covered with horny or leathery integument. Some birds of early periods had true teeth, like most reptiles and mammals, but such is not the case with any birds now living; the hardness of the bill answering every purpose of teeth. The principal parts of the bill are illustrated in Fig. 2. In most birds the covering of the

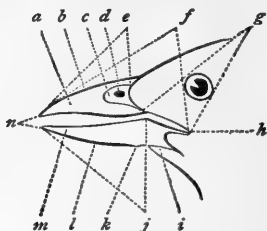


FIG. 2.—PARTS OF A BILL. *a*, side of upper mandible; *b*, culmen; *c*, nasal fossa; *d*, nostril; *e* (see below); *f*, gape, or whole commissural line; *g*, rictus; *h*, commissural point or angle of the mouth; *i*, ramus of under jaw; *j*, tomia of under mandible (the reference line *e* should have been drawn to indicate the corresponding tonia of the upper mandible); *k*, angle of gonys; *l*, gonys; *m*, side of under mandible; *n*, tips of mandibles.

bill is entire; in some, as in the Petrel, it is pieced. Birds of prey and some others have a soft swollen covering of the base of the upper mandible, called the cere; and in such the tip of this mandible is hooked over that of the lower mandible. The upper outline of the bill is the culmen, the corresponding lower outline is the gonys, the line of meeting of the two mandibles is the commissure. The nostrils open usually at the base of the upper mandible, and commonly in a

depression called the nasal fossa; they are often hidden by bristly or otherwise modified feathers. The various forms which the bill assumes in different groups of birds are indicated by terms, the meaning of which is usually obvious.

The Foot. Much misunderstanding prevails respecting the parts of a bird's legs and feet in comparison with those of a quadruped. Taking an ordinary case, as that of a Robin for instance, that part of the

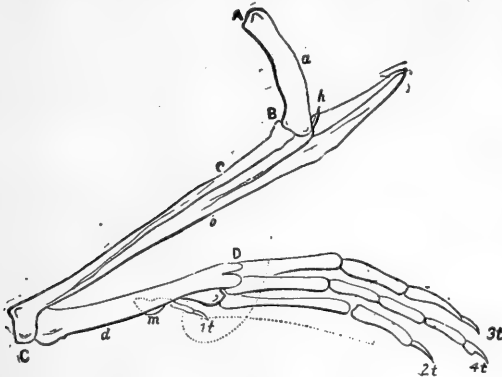


FIG. 3.—BONES OF A BIRD'S LEG AND FOOT. (From a Loon.) A, hip. B, knee. C, heel, or ankle-joint. D, bases of toes. *a*, thigh-bone (*femur*); A to B is the thigh, or "second joint." *h*, knee-cap (*patella*). *b*, *tibia*; and *c*, *fibula*; these two bones reaching from B to C, and representing the leg proper, or shin (*crus*). From C to D only, that is, from heel to toes, is the foot proper, chiefly consisting, in a bird, of the *metatarsus*, but in descriptive ornithology commonly called the *tarsus*; in common parlance, the shank. The whole limb, down to C, is commonly buried in the feathers; beyond C is the naked part. *d*, *metatarsal bone*, consisting of three metatarsal bones fused in one, commonly called the "tarsus." *m*, accessory metatarsal bone, supporting *1t*, the first or hind toe, of two joints; *2t*, second or inner front toe, of three joints; *3t*, third or middle front toe, of four joints; *4t*, fourth or outer front toe, of five joints. These joints are the *phalanges*. The dot-line 1 crosses the basal phalanges of all the toes; dot-line 2, the next set of phalanges. (N.B. In the Loon, the tibia projects above the knee-joint; but such is the case in very few birds, the knee of most birds being smoothly convex, as in man.)

hinder limb which is both feathered and hidden in the general plumage of the body, corresponds to the whole

leg of a quadruped as far down as the ankle-joint. The first joint which appears is one the convexity of which looks backwards; this is the ankle-joint. The slender, naked, and scaly part thence downward, is anatomically the foot of the bird, ending in the toes, on which latter alone the bird rests. Recalling the appearance of a fowl as usually brought to table, the reader will perceive that the whole *foot* of the bird has

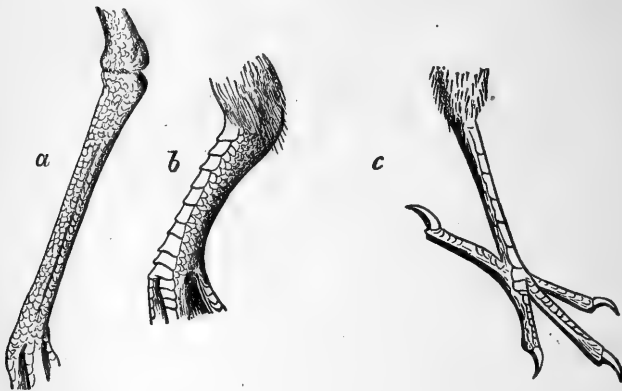


FIG. 4.—FEET. *c*, ordinary *passerine* foot (tarsus and toes), with tarsus *scutellate* in front, “booted” on the sides and behind. *b*, foot of Pigeon, *scutellate* in front, *reticulate* on sides. *a*, foot of Plover, entirely *reticulate*.

been removed; the “drumstick,” as it is called, is that part of the limb between the ankle and the knee, corresponding to the “shin” of man, while what is known as the “second joint” in carving, is the thigh, or that part between the knee and the hip. The terms “leg” and “foot” are very loosely applied to birds. In some birds, especially the Waders, the lower part of the leg or shin is naked, and protrudes from the general covering of the body; but ordinarily the whole leg, as well as the thigh, is hidden in the feathers.

In descriptive ornithology, the foot, or that part of the limb between the heel and the toes, is commonly called the *tarsus*. In some cases, as those of most Owls, it is clothed with feathers like the leg; it is ordinarily, however, covered with horny or leathery integument resembling that of the bill, and this hard skin is usually broken up into a number of scales or plates, the arrangement of which has been found of importance in classification.

The number of toes in most birds is four; there are never more; sometimes there are but three, and the Ostrich has but two. There are usually three in front and one behind; sometimes, as in the Woodpeckers and Cuckoos, there are two before and two behind; very rarely all four toes point forward. When there are but three toes, the hinder is always the missing one. A bird's toes are numbered from one to four, the hind toe being the first, then the inner front toe, next the middle front toe, and lastly the outer front toe. These digits are connected together by complete or partial webs in swimming and many wading birds; and they usually bear well-formed, arched, and acute claws, corresponding to the claws, nails, or hoofs of quadrupeds. The many modifications of the feet, like those of the bill, serve in large measure to distinguish different groups of birds.

The part of a bird's hind limb called the tarsus consists of several originally distinct bones, which more or less completely fuse together in adult life. The toes, on the contrary, retain the mobility of the several joints of which they are composed; and, as a rule, the hind toe has two joints, the inner front toe three, the middle front toe four, and the outer front toe five.

The Wing. The wing of a bird represents the fore limb of a quadruped, or the arm of man, modified for flight in a very remarkable manner. It joins the body by a shoulder-joint; thence a single long bone, the humerus, extends to the elbow, whence a pair of bones, the ulna and radius, reach to the wrist. There are some small bones in the wrist-joint, and the limb

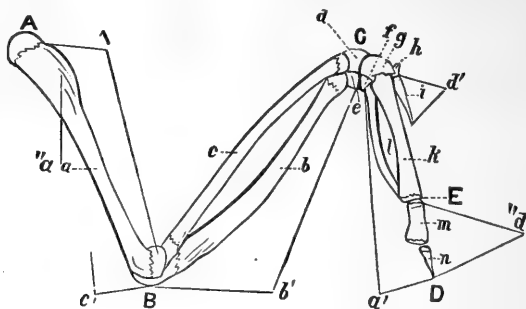


FIG. 5.—BONES OF A BIRD'S WING. (Taken from a young chicken, in which the *epiphyses*, or caps of growing bone, are still separate from the shafts.) A, shoulder. B, elbow. C, wrist, or *carpus*, sometimes loosely called "shoulder." E, juncture of metacarpal bones of hand with phalanges of the finger. D, tip of principal finger. A to B, arm, or upper arm, represented by *a*, the *humerus*. B to C, forearm, represented by *b*, the *ulna*, and *c*, the *radius*. *d* and *e*, the two *carpal* or wrist-bones (*radial* and *ulnar*). The figure 1 indicates lines running to the epiphyses of the humerus; the ends of ulna and radius show similar epiphyses, separated by zigzag lines from the shafts of these bones; *g* and *f* are similarly the epiphyses of the two principal metacarpal bones: *k*, the third, and *l*, the fourth. *h* is the second metacarpal bone (there is no first metacarpal in birds). *h*, *k*, and *l* soon fuse together, making a single compound metacarpal bone, corresponding to the metatarsal bone ("tarsus") of the foot; the ulna and radius correspond to the tibia and fibula of the leg; the humerus to the femur; forearm to shin; arm to thigh. The compound metacarpal bone *f g h k l* bears the "thumb" phalanx *i*, and the two finger phalanges *m*, *n*. *d'* is the first finger or "thumb," bearing the alula, or "bastard wing," *d''* is the next finger, and there may be another, not represented. The "primaries" are those feathers that grow on the space marked by the lines *a'*, or from C to D; the secondaries on the space *b'*, or from B to C; the tertiaries upon *c'*; the scapularies on the upper arm, *a'''*.

is finished by several bones of the hand, including those of the fingers. Just as in the case of the leg, the bones and joints correspond completely with those of a

quadruped. The convexity of the wrist-joint, or carpus, looks forward, as that of the ankle-joint does backward; and being the most prominent bend in the limb away from the body, is sometimes very wrongly called the "shoulder." But the shoulder-joint of a bird is found high up, buried in the muscles of the breast; the first bend in the limb has its convexity directed backward, and corresponds to our elbow. The wing is clothed with ordinary feathers, like those of the body, but has in addition the large stiff quills, which make up the greater part of the expanse of the wing. These quills, usually nine or ten in number, which grow upon the pinion-bones, that is, upon the bones of the hand and fingers, beyond the wrist, are called the *primaries*. Those which are situated upon the ulna, one of the two bones between the wrist and elbow, are called *secondaries*. A few of the innermost of these, or a row of such feathers above the elbow, are often described as the *tertiaries*. The bases of these large feathers are protected by several rows of *coverts*, as they are called, the special arrangement of which sometimes affords good characters for classification.

The bones of a bird's hand, like those of the tarsus, are originally distinct, but soon fuse together. The number of digits, or fingers, which remain separate is normally two or three; the outermost of which, commonly called the "thumb," bears the set of feathers known as the *alula*, or "bastard wing."

In case the first primary of a bird is rudimentary, or very much shorter than the second, it is commonly said to be *spurious*. The first and largest row of wing-coverts, overlying the secondary quills, are the *greater coverts*; the next row are the *median coverts*; the

remaining much smaller ones, in several rows, are collectively called *lesser coverts*. None of these feathers are to be confounded with those protecting the bases of the primary quills. The large feathers of the wings are collectively known as the *remiges*.

The Tail. This member consists of several large feathers, inserted, like the rays of a fan, upon the coccyx, or rump. The bones of this part of the spinal column protrude but little from the body, the oppo-

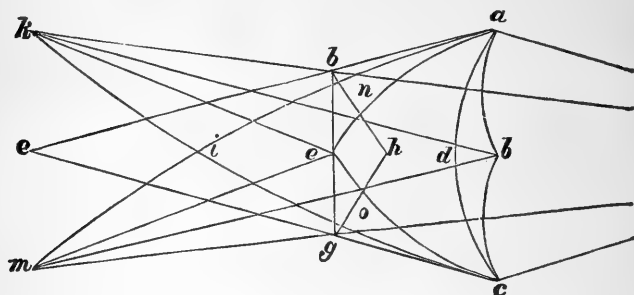


FIG. 6.—DIAGRAM OF SHAPES OF TAILS. *adc*, rounded; *aec*, graduate; *aic*, cuneate-graduate; *alc*, cuneate; *abc*, double-rounded; *feg*, square; *fhg*, emarginate; *fneog*, double emarginate; *kim*, forked; *kem*, deeply forked; *kom*, forficated.

site of their condition among quadrupeds, and the last one is peculiarly enlarged and modified in shape, to support the feathers. These are called the *rectrices*; they are usually large and stout, like the remiges of the wings, and their bases are protected above and below by smaller feathers, the upper and under tail-coverts, or *tectrices*. The shapes, and especially the relative lengths, of these large feathers, as in the case of the corresponding ones of the wings, affect the form of the tail as a whole, and give rise to many descriptive terms.

§ 2. PREPARATION OF SPECIMENS FOR STUDY.

IN preparing specimens for scientific purposes, it is not worth while to make a collection of mounted birds, however desirable such may be for ornamental purposes. In the first place, it takes too much time, which may more profitably be devoted to field-work, and the study of its results. Next, mounted birds take up too much room, and require special contrivances, such as glass cases, for their proper preservation and exhibition. Finally, and especially, mounted birds are not so easily handled and examined as skins, and are therefore less readily available for study. Mounting birds, therefore, for other than ornamental purposes, or to gratify an æsthetic taste, is not to be recommended, unless one wishes to establish a regular museum. The ends of science are much more readily secured, in all ordinary cases, by making a collection of skins, to be preserved in the drawers of a cabinet. Such a receptacle, somewhat resembling a bureau, proves very convenient, both for the storage and the transportation of specimens. The drawers should fit tightly, to exclude dust and bugs; and the case may also be provided with folding-doors, if desired, as an additional safeguard. Camphor, insect-powder, or some other approved insecticide, should be freely used. The dimensions of a convenient cabinet may be about four feet in height, three feet in width, and two feet deep, having drawers of graded depths, from the deepest at the bottom to the shallowest at the top. The deeper drawers may be fitted with movable trays. In filling such a cabinet, specimens should be assorted somewhat

according to their bulk, and each drawer should bear a label indicating its contents. The expense of such a cabinet would be of course according to the elegance of its material and finish; the main object to be secured is tight fitting of the drawers.

Though no complete treatise on the collecting and preparing of specimens is here necessary, a few hints to intending collectors of little experience may well be given. Birds may be trapped or snared, but are almost always shot. The choice of a gun is not easy, and must depend largely upon the collector's means, if not also upon his individual preference. The modern double-barrelled breech-loader is unquestionably the best arm for general purposes; but a good reliable arm of this kind is necessarily expensive, and many collectors make use of cane-guns, or even of a kind of pistol now extensively manufactured, to which a skeleton stock may be fitted if desired. Such arms are very cheap, perfectly safe, and become quite effective in the hands of a person skilled in their use. Whatever weapon be selected, it should be a breech-loader, and only fixed ammunition, in metallic or paper cartridges, should be employed. Muzzle-loading fire-arms are not to be thought of for a moment; they are anachronisms. Most of the collector's shooting is to be done with the finest shot that can be secured, in order to injure the specimens as little as possible. Nearly all inexperienced persons use too much shot, of too large size. But since the collector will require to secure large as well as small birds, and at long as well as short range, he should provide himself with an assortment of cartridges, loaded with shot of several different sizes. Three-fourths of the cartridges, at least,

should contain small charges of mustard-seed shot, and the remainder may be loaded with No. 8 and No. 4. The kind of charge in each may be indicated by using cartridges of different colors; or, in the case of metallic shells, by having the shot-wads of different colors, or marked with a figure showing the No. of the contained shot. Collectors who allow themselves to become nervous or excited in view of rare birds sometimes get hold of the wrong cartridge; but very little thoughtfulness will render such a mishap unlikely to occur. The collector cannot be too careful to have his cartridges well made, and to always be sure to know exactly what kind of a load is in each one of them. The general rule in loading is bulk for bulk of powder and shot, whatever the size of the latter. A medium or rather coarse-grained powder is preferable for breech-loaders. Use of Ely's or other good thick chemically prepared wads tends to keep a gun from fouling. It is almost needless to add that, whatever kind of a gun be selected, the weapon must be kept clean, to insure its greatest durability and efficiency.

As birds inhabit all kinds of places, it is impossible to tell the collector where to go to find them, unless he be in search of particular species; and the haunts of these can only be known to him with the ripening of his general experience in field-work. Such things must be learned in actual practice. One about to form a general collection of the birds of any particular vicinity will do well to cover the whole ground, ransacking successively every locality. As a general rule, well watered and wooded places offer most of abundance and variety in bird-life. Early morning and late evening hours are the best for collecting. Each specimen,

as soon as it is secured, should be carefully cleansed and smoothed, have the mouth, vent and shot-holes plugged with cotton, and be thrust head first into a paper cone, to keep the plumage from injury. The ordinary game-bag, or better, a fish-basket, may be used to carry the results of the day's shooting. In collecting eggs, great care is of course required to bring them safe home. They should be thickly wrapped with cotton, and deposited in a tin or wooden box.

Before skinning, each specimen should be measured as to the total length and spread of wings, as these dimensions cannot be accurately taken after the object is prepared for the cabinet. The "length" is the distance in a straight line from the tip of the bill to the end of the tail. The "expanse of wing" is the distance between the ends of the longest primaries when the wings are fully spread apart. A third measurement may also be preferably made before the specimen is skinned; that is, the "length of wing," which means the distance from the "bend of the wing" (from the carpal or wrist joint, sometimes improperly called the shoulder, as said above) to the end of the longest primary. Other measurements, usually taken either from the fresh or the dried specimen, are those of the tail, bill, tarsus, and middle toe, with its claw. The tail is to be measured from the insertion of the feathers in the coccyx to the end of the longest feather. Bills and feet cannot usually be accurately measured without the compasses. The length of the bill is the straight line from the base to the tip of the culmen. The length of the tarsus is the distance from the ankle-joint to the base of the middle toe. Besides measuring, it is always well to note the color of the eyes, bill, feet, any

naked patches of skin, &c. — in fact, the colors of any soft parts liable to fade or change in any way in drying. All these memoranda should be entered in a note-book, and also inscribed on the label of the specimen, together with the date of capture, the sex (ascertained by dissection, as noted beyond), the locality where procured, the collector's name, and any further observations he may have made, such as the contents of the stomach of the specimen, the abundance or scarcity of the species, the occupation of the bird at the moment of its death, &c.

While proficiency in the higher branches of taxidermy is not easily acquired, any one may readily learn to make a fairly good bird-skin, answering all scientific purposes. An incision is to be made along the middle line of the abdomen, from the end of the breast-bone to the vent, and the skin carefully raised on each side as far as the legs. These are to be cut away from the body at the knee-joint, inside the skin, and afterward skinned down as far as the tarsus, scraping the flesh from the shin-bone, but leaving that bone in place. Next, skin around the coccyx or tail-bones, severing the tail from the body by cutting off the coccyx inside the skin, taking care to leave flesh enough for the feathers to maintain their insertion. The bird may now be hung, head downward, by a hook inserted in the exposed stump of the rump; and with a little care the skin may gradually be stripped off as far as the wings. At this stage the wings are to be severed from the body, inside the skin, at the shoulder-joint. At a later stage the wings themselves are to be separately skinned, like the legs, down as far as the wrist-joint, leaving the bones in, but removing the flesh by

scraping. As soon as the wings have been severed, the skin, which by this time will have been turned inside out, will easily slip along the neck as far as the head. To skin the latter is the most difficult part of the job, and must be carefully done, or the skin will tear. The head is to be uncovered nearly as far as the base of the bill, taking especial pains, at this stage of the process, not to stretch the skin unduly. The eyes are to be picked out, and then the entire base of the skull, together with the flesh between the jaws, and the brain, is to be removed, leaving the sides and top of the skull attached to the bill. The skin above the ears and eyes is closely adherent by membrane to the bone, and must be detached with care by cutting. In the general process of skinning, after the first incision, little if any use of the knife or scissors is required except to sever the legs, tail, and wings, to work about the eyes and ears, and to remove the base of the skull. Nearly all the necessary cutting may be better done with the scissors than with the knife. The skins of most birds slip off very easily, or at most only require to be detached with the thumb-nail. In the cases of Woodpeckers, some Ducks, and a few other birds, the heads of which are too large in proportion to the calibre of the neck to be skinned as above directed, this part must be afterward separately skinned by an incision made from the outside along the middle line of the skull.

If the above process has been properly conducted, the bird's skin has been turned inside out. The preservative may now be applied thoroughly to every part of the skin, and especially to the head, wings, legs, and tail, where bone or traces of flesh remain. The

best preservative is *arsenic*; none of the many preparations recommended are more effective, and none are so convenient. As much arsenic should be used as can be made to adhere to the skin. The skin is next to be turned right side out, taking care to draw the head carefully into place, and to set the bones of the wings and legs in their proper position. The plumage being nicely smoothed, and the whole object straightened out, the specimen is ready to receive the stuffing, which is to be introduced through the original incision. A pellet of cotton of the size of the bird's eye should be passed into the skin, and deposited in each socket; over this the eyelids are to be nicely adjusted. In general, no wrapping of the wing-bones is required, nor is it necessary to tie the wing-bones of opposite sides together inside the skin, as often directed, though both of these operations may be desirable in the cases of some large birds. A little cotton should be wrapped around the leg-bones of large birds; for small ones this is usually unnecessary. A cylinder of cotton, rather less in size than the neck of the bird, should be inserted in the neck, the farther end of the cylinder resting in the cavity of the skull, the other under the skin of the breast. The body-stuffing of any bird up to the size of a crow or hawk may be all in one mass, rather firmly moulded into something like the shape of the bird's trunk, but rather less in bulk. Insinuating this into the skin until it fits nicely, bring the edges of the original incision together, and the stuffing of the specimen is completed. It only remains to "set" the specimen in a shapely manner by folding the wings neatly, adjusting the head and neck, bringing the legs together, and then moulding the whole object by manipu-

lation into the desired shape. No specific directions can be given here; this part of the process, upon which so much of the comeliness of the specimen depends, must be learned by practice. The usual fault of beginners is in using altogether too much stuffing, and in making the skin "bulge out" in the wrong places, especially between the shoulders and along the neck. The specimen is usually meant to lie upon its back, with the head drawn near the body. Care should be taken, therefore, that the neck-cylinder of cotton be neither too long nor too thick, and that most of the elasticity of the stuffing shall expend itself in making the breast plump. Particularly, there should be little if any stuffing along the back between the shoulders. The general run of small birds may be stuffed nearly or quite to the natural size — *never* beyond it; but large birds usually are best left flattened to a considerable degree. The specimen being arranged to suit, it should be labelled by tying the label to the crossed legs, and be put away to dry, being placed either in a cylinder of stiff paper or a bed of cotton, or otherwise so fixed as to retain the shape given. After thorough drying, it may be quite closely packed for transportation, if desired, without material injury; but it should not be subjected to much pressure while still moist.

The contents of the crop or gizzard may be examined to ascertain the nature of the bird's food, and the result be recorded either in the note-book or on the label itself. The body in most cases should also be examined to make sure of the sex of the specimen. The testes of the male and the ovaries of the female lie in the same position in the small of the back, close to the kidneys, and may easily be reached by cutting

through the wall of the abdomen on one side, and pushing the intestines out of the way. The testes of the male are a pair of whitish or yellowish bodies lying close together. The ovary is a flattened mass of small spheres. In the breeding season, both these organs are subject to such enlargement that they become very conspicuous, and they differ so much in appearance that they cannot be mistaken; but at other times of the year they can only be recognized upon close examination, especially in the cases of small birds. The organs of a cock sparrow, for example, are as large as peas in May, though no bigger than a pin's head when not in action. The ripe ovary of a female bird is even more conspicuous. To denote the male sex, the sign for Mars (♂) is used; that for Venus (♀) being employed in the other case.

The labelling of specimens is an important matter, which should never be neglected, or even postponed. It is to be done at once on the completion of the operation of stuffing. Besides the items already indicated, the label should bear a number corresponding to one in the note-book, where all the information given upon the label should be duplicated, with any additional observations which the collector may desire to record.

Skins prepared in the manner indicated are to be preserved in the drawers of the cabinet for the purposes of study: they answer all the requirements of science. Should it be desired to mount them, however, they may be relaxed at any time by the application of moisture. It is not always possible to prevent the plumage from being soiled by the blood, grease, or other fluids of the body; but most such stains can be effaced by thorough washing with clean water and drying with

plaster-of-paris, the process to be repeated until the spot disappears.

In collecting nests and eggs, not less than in destroying birds themselves, humane reluctance to inflict needless suffering should restrain the ornithologist from indiscriminate and unnecessary interference with bird-life. Unless one wishes to collect largely for legitimate exchange, no more nests should be despoiled than may be necessary to stock one's own cabinet for the purposes of study. The commoner sorts of eggs are readily secured in a short time, and the birds laying these kinds should not afterward be molested. The greatest care must always be taken to identify the parents of nests and eggs secured; for specimens to which any doubt attaches are comparatively worthless for scientific purposes. It is not always sufficient to detect a presumed parent near the nest, for there is much liability to mistake where different kinds of birds are breeding together, particularly if they be of nearly related species, or of species whose nests, eggs, and breeding habits are similar. A bird actually seen on the nest, or fluttering away from it, affords the only sure indication of parentage; and if there be the slightest doubt as to the species, the parent should be snared or shot, to put the identification beyond question. The search for birds'-nests is not so much a matter of luck or accident as some suppose it to be. Careful and patient observation of the birds themselves during the breeding season gives the best clue to the situation of nests, many of which are hidden with the utmost display of the instinct of self-preservation. Our most successful collectors become expert through great patience and perseverance in watching birds and studying their

habits. Birds of one or another kind will be found nesting in every locality, and in almost every possible situation. It is, therefore, no more practicable to give precise directions for finding nests than it is to say how or where birds themselves are to be sought. This branch of wood-craft, like every other, must be learned from the best teacher — experience.

No portion of the collector's note-book can be filled with memoranda to more advantage than that devoted to the record of nests found and examined. The general nature of the surroundings, the exact situation of the nest, the materials composing it, the number of eggs it contains, the actions of the parents, the precise date, the condition of the eggs at the time, — all these should be duly entered, as items which fade quickly from the memory, and which cannot be subsequently attested by the contents of the cabinet. Few persons, if any, make extensive collections of nests. Many birds make no nests; others, only such structures as cannot be conveniently preserved; and those which are eligible for preservation in the cabinet usually require special precautions, such as wrapping or sewing with thread, for their safe keeping. Nests or nesting-places are, therefore, as a rule, described and recorded in the note-book, not kept for study. The contrary is the case with eggs, which may be preserved with ease, affording at once interesting and valuable objects of natural history.

Eggs, as a rule, should be kept in sets — a "set" being those taken from any one nest; and each one of a set should bear the same number, referring to a corresponding entry in the note-book, where the particulars above mentioned are recorded in full. The

number should be neatly written in ink. It is seldom advisable, and often impossible, to make an inscription of any length upon the shell, and the number alone usually answers every purpose. Eggs are best kept loose in small shallow trays of pasteboard, in a drawer of the cabinet; each tray containing also a written label corresponding as far as practicable to the entry in the register. They may also be packed in cotton in small boxes, as cigar boxes, for example. The largest and best public collection in this country — that in the Smithsonian Institution — is preserved in the former manner; Captain Bendire's collection, the best private one by far, is, I believe, kept in cotton in many small boxes.

For preservation, eggs must of course be emptied of their contents. This is accomplished by drilling a single hole near the middle of the egg, with the steel instrument to be procured of any dealer in natural history material. Drills of several sizes must be used for the different kinds of eggs. Having carefully drilled the hole, insert a blow-pipe, and force the contents out by blowing, holding the egg meanwhile over a basin of water. No particular directions need be given; a few trials will show the operator what delicacy of manipulation is necessary to prevent breakage. Accidents are more liable to happen from blowing too hard, by bursting the egg, than by breaking it under the fingers in drilling or during subsequent handling. A perfectly fresh egg is easily emptied; and nothing further is required than to rinse it thoroughly, by taking water into the mouth and spirting it through the blow-pipe. A Robin's egg, for example, may be perfectly emptied and rinsed through a hole scarcely admitting

the head of a common-sized dressing-pin ; and in every case the hole should be as small as can be got along with. Incubated eggs, however, present difficulty in proportion to the size of the contained embryo. The shell grows more fragile as incubation advances ; the membrane which lines the shell grows thicker and tougher. The hole must, therefore, be made larger, and be drilled with greater care ; the embryo, if advanced in size, must be cut in pieces with fine narrow-bladed scissors, and extracted piecemeal with forceps or a hook ; the lining membrane is to be extracted, if possible, by the same means ; and particular attention must be paid to thorough rinsing. Any attempt to force out an embryo by strong blowing is apt to burst the egg. With due care, however, a perfectly formed embryo may usually be removed without accident. The shell being empty and clean, it should be placed with the hole downward on blotting-paper, to drain ; and when perfectly dry, and marked with a number, it is ready to be placed in the cabinet. The only after care is to keep the specimens from the light and from the dust.

I repeat the caution, that the young collector cannot be too careful to identify and authenticate his eggs ; to keep them during blowing and afterward without mixing them up, and to be explicit and precise in his register-entries. A badly made collection of eggs is worse than worthless for any scientific purpose ; it is only fit for a child's amusement.

The whole subject of collecting birds and their eggs, and of preparing them for preservation in the cabinet, is fully treated in Coues' "Field Ornithology," to which the reader is referred for further particulars.

§ 3. THE SUBJECT OF FAUNAL AREAS.

IN his well-known article in the American Journal of Science and Arts, for January, 1866, Professor Baird adopts the general views of Dr. P. L. Sclater, respecting the primary division of the globe into Faunal Areas, as determined by the geographical distribution of birds, adding, however, a "West Indian Region" to those recognized by the English naturalist. The greater part of North America constitutes the Nearctic Region of these authors, and thus is subdivided by Professor Baird into three provinces — the Eastern, Middle, and Western. The first of these extends from the Atlantic seaboard westward across the Alleghanies and over the fertile valley of the Mississippi to the sterile plains beyond, at about the one hundredth degree of west longitude. Whatever further elaboration and modification in detail this scheme may require, so far as our country is concerned, it has stood the test of ulterior examination, and may be considered as accepted in its main features. Mr. J. A. Allen, who has since paid great attention to the subject of zoö-geography in general, with special reference to the subdivisions of these large areas, has presented the results of a study of the Eastern Province in his valuable paper, in the Bulletin of the Museum of Comparative Zoölogy (No. 3 of Vol. ii, pp. 387-404, 1871), where he divides the Province into the following lesser areas, called "Faunæ": —

1. *Floridian Fauna*. Including Florida south of Lake George on the interior, and of Cape Canaveral on the coast; this portion of the State differing

quite sensibly from the rest in its general faunal and floral characteristics.

II. *Louisianian Fauna*. Provisionally considered as limited to the northward by the isothermal line of 77° F., and embracing all that part of the United States south of such line, and east of the Great Plains, excepting the Floridian Fauna. It apparently extends up the coast as far as Norfolk, Virginia.

III. *Carolinian Fauna*. This extends from the northern boundary of the Louisianian Fauna northward to about the isothermal line of 71° F. "On the Atlantic coast the Fauna includes Long Island and a small portion of southeastern New York, which form its northern limit."

This Fauna is of special interest for us in the present connection, from the fact that its extension on the eastern side, as given by Mr. Allen, requires to be somewhat enlarged, in order to include a small portion of New England. For the lower valley of the Connecticut River has a Fauna, so far at least as birds are concerned, which is substantially the same as that of Long Island and the southeastern corner of New York. Among the birds given by Mr. Allen as "species limited in their northward range by the Carolinian Fauna" are the following, all of which are now known to occur in southern New England:—*Cardinalis virginiana*, *Euspiza americana*, *Guiraca cærulea*, *Helmintherus vermivorus*, *Icteria virens*, *Wilsonia mitrata*, *Dendræca cærulea*, *Pyrranga æstiva*, *Mimus polyglottus*, *Thryothorus ludovicianus*, *Poliop-tila cærulea*, *Lophophanes bicolor*, *Corvus ossifragus*, *Centurus carolinus*.

IV. *Alleghanian Fauna*. With the Carolinian for

its southern boundary, the northern boundary of this Fauna "appears" to be nearly coincident with the isothermal line of 65° F. It is, however, an extremely irregular line, with abrupt and deep sinuosities. Beginning on the coast to the eastward of Penobscot Bay, it sweeps first somewhat to the northeast, nearly or quite reaching Bangor; thence passing westward and southward, it follows the northern boundary of the lowlands through southern Maine and southern New Hampshire. In the Connecticut valley it rises farther to the northward, and in its southern descent skirts the eastern base of the Green Mountains, passing to the southward and westward of these highlands in Connecticut, and thence abruptly to the northward. Skirting the eastern border of the Champlain valley, it continues still northward to the valley of the St. Lawrence as far as Quebec. . . . The Alleghanian Fauna hence includes all of southern New England, [except the small piece occupied by the Carolinian, and] except the higher parts of the Green Mountain ranges, including even the southern third of Maine and a considerable part of New Hampshire and Vermont."

V. *Canadian Fauna*. All of New England, not included in the Carolinian and Alleghanian Faunæ, belongs to the Canadian, the northern limit of which coincides very nearly with the isothermal line of 57° F.

VI. *Hudsonian Fauna*; and VII. *American Arctic Fauna*. Lie successively northward of those already given. Their exact limits, however, need not here concern us.

It appears from the foregoing that New England includes portions of three of the Faunæ marked out

by Mr. Allen. The recognition of the "Carolinian" or lowermost of these, we owe to this author, who however left to be afterward determined its northward extension into the valley of the Connecticut. The "Alleghanian" Fauna was noted by Professor Agassiz in 1853. The "Canadian" was probably first so called by Professor A. E. Verrill (Proceedings of the Essex Institute, iii, 1863, pp. 136-139).

In the article just mentioned, Professor Verrill marks the boundary between the Canadian and Alleghanian Faunæ in the following manner :

"To me it seems best to take, as a guide in determining the northern limits of the Alleghanian Fauna, the most southern localities in which those birds peculiar to the Canadian Fauna commonly breed. The line thus established seems to separate the two Faunæ more distinctly than any other. The birds which have been most useful in this investigation, their habits being best known, are the Blue Snow Bird, Pine Finch, Canada Jay, Crossbills, Black-poll Warbler, and Spruce Partridge. Wherever these breed abundantly in any region, it may safely be considered as belonging to the Canadian Fauna. According to this arrangement the Adirondack region of New York, the northern parts of Vermont and New Hampshire, including most of the higher parts of the Green Mountains and all of the White Mountains, and even the summits of the higher Alleghanies, will be included in the Canadian Fauna. But the Alleghanian Fauna will extend northward into some parts of Canada West, about Lake Ontario, and along the valley of the St. Lawrence, perhaps as far as Montreal. In Maine the Canadian Fauna will embrace most of the northern portion of

the State, extending southward as far as the Umbagog Lakes in the western part. Concerning central and northeastern Maine I cannot speak with certainty, but the coast region, from Mount Desert to Eastport, together with the islands of the Bay of Fundy, and the southeastern coast of New Brunswick, belong to the Canadian Fauna. The central and southern parts of Nova Scotia, however, are somewhat more southern in character. . . . I have found that forests of spruce and white birch, so characteristic of the northern parts of New England, generally commence with the southern limits of the Canadian Fauna, yet most of the birds seem in no way dependent upon such forests, and many do not even frequent them."

The meeting-place of these two Faunæ in New Hampshire and Maine has been noted by Messrs. Maynard and Brewster in a paper by the former in the Proceedings of the Boston Society of Natural History (xiv, Oct., 1871). Writing of the Birds of Coos County, N. H., and Oxford County, Me., Mr. Maynard gives these localities as places where the Faunæ come together, and draws the dividing line in the following manner: "Starting on the northeast coast of Maine, near Mount Desert, the dividing line of these faunæ proceeds in a southwesterly direction along the southern margin of the mountain-range which stretches across the State to the White Mountains. Here it declines to the south, reaching quite to Rye Beach; then once more proceeds northwest along the western border of the mountain-range into Vermont, where it is not my present purpose to trace it. So abruptly is the line defined in many places by the range of mountains, that some birds which occur in abundance on one side

are found only as stragglers, or not at all, on the other."

The northern border of the Carolinian Fauna, which division Allen, Bicknell, Merriam, Purdie and others have recognized, is at present open to some question. The probability is, however, that it includes a portion of southeastern New York, the whole of Long Island, and a considerable part of Connecticut. So far as New England is concerned, the Carolinian fauna may be said, in a word, to include *the valley of the lower Connecticut River*. Non-recognition of this fact has led some writers, notably Dr. Brewer, to exclude from the New England list several species which should unquestionably be included. It may be assumed with entire safety, as always insisted by Dr. Coues, that any bird known to be found on New York, Long, or Staten Island, is certainly also a bird of New England, being sure to occur in that wedge of the Carolinian Fauna which, as we have just seen, extends some distance up the valley of the Connecticut. New England writers have not been always sufficiently impressed with this conviction. Nearly if not quite all the species which were included in Dr. Coues' list of 1868, on the strength of this circumstance, have since been actually detected in the region in mention, confirming the accuracy of such determination in the most satisfactory manner.

It will be obvious, from what has been said of the three Faunæ represented within the boundaries of New England, that the manner and character of the presence of any species in New England can only be established with due reference to the three diverse areas. A bird may be only a summer visitor in one of these

areas, or a winter resident in another, or a migrant only in a third; or it may occupy more than one of these natural divisions in a different manner at different seasons of the year. All matters relating to the presence of birds in New England at large, as well as to the details of their local distribution within such limits at any given period of the year, must rest upon consideration of the different Faunal areas involved in the solution of the problem. It rarely suffices to say of a species, simply, that it "breeds in New England," or that it is "migratory in New England;" much more explicit and precise statement being required in most cases. The zoologically varied character of New England is still further enhanced by the fact, that it presents an extensive sea-coast line, and therefore includes a number of marine birds which are only found inland by accident.

In the body of the present work the author has paid special attention to the local distribution of species, and has endeavored to work out the character and manner of the presence of each New England bird in more precise and satisfactory manner than has before been attempted. He has undertaken not only to indicate whether the bird be a permanent resident, a summer or winter visitant, a migrant or a straggler, in New England at large, but also to state in what portions of the country it takes one or another of these parts, in filling its rôle as an inhabitant of the six Eastern States, or of any of them; the natural faunal areas above indicated being kept prominently in view. It is considered a great gain in precision to refer expressly to the Canadian, Alleghanian, and Carolinian Faunæ, instead of using the terms so loosely employed by most writers.

§ 4. ON THE LITERATURE OF NEW ENGLAND ORNITHOLOGY.

UNDER this head it is proposed to present a summary notice of previous writings on New England Ornithology. This literature dates back at least two hundred and fifty years, notices of New England birds being contained in some of the very earliest historical, political, and other publications relating to America. All such writings, however, may of course be passed over as obsolete, having at most a present interest only for the antiquarian and the bibliographer, excepting, perhaps, in the single case of the Great Auk, whose former existence on the shores of New England they attest. There are likewise a number of treatises on the Ornithology of North America at large, which relate in due part to the birds of New England. Such are the standard works of Vieillot, Wilson, Bonaparte, Nuttall, and Audubon, in the first half of the present century, and the later ones of Baird, of Coues, and of Baird, Brewer, and Ridgway. Aside from such works of general scope, which it is not proposed to include in the following list, there are very many treatises devoted exclusively to New England Ornithology. Nearly all of these, as will be seen, are extremely modern; they give gratifying evidence of the diligence and success with which numberless New England writers have of late investigated the birds of their country. The list is derived, with permission, from Dr. Coues' Bibliographical Appendix to the "Birds of the Colorado Valley," and is believed to be practically complete. Most of the pub-

lications cited have been examined in the preparation of the present volume, in order to set forth fully the present state of our knowledge of the subject.

Chronological List of Publications relating to the Birds of New England; with Annotations.

1792. BELKNAP, JEREMY. *The History of New Hampshire.* 3 vols. 8vo. Boston, 1792. (Dover, 1812. Boston, 1813.)
Vol. iii contains an annotated list of 123 species of New Hampshire Birds, at pp. 165-174 of the orig. ed.
1794. WILLIAMS, SAMUEL. *The Natural and Civil History of Vermont.* Walpole, 1794. (2d ed. 2 vols. 8vo. Burlington, 1809.)
Contains notices of Birds, at pp. 134-146 of vol. i of the 2d ed.
1815. ——— Description of Duke's County [Massachusetts].
In: *Mass. Hist. Coll.*, 2d ser., iii, pp. 38-94. Boston, 1815.
List of Birds of Martha's Vineyard, p. 54.
1832. WILLIAMSON, WILLIAM D. *The History of the State of Maine [etc.].* 2 vols. 8vo. Hallowell, 1832.
Essay on the Birds, at pp. 140-150 of vol. i.
1833. EMMONS, EBENEZER. *A Catalogue of the Animals and Plants of Massachusetts. II. Birds.* In: *Hitchcock's Rep. Geol. Min. Bot. and Zoöl. Mass.* Amherst, 1833. pp. 545-551.
The first attempt at a scientific list of the Birds of this State. It is very incomplete, containing only 160 species, but reliable as far as it goes, containing no species not since confirmed as inhabiting Massachusetts.
- 1833? NUTTALL, THOMAS. *Remarks and Inquiries concerning the Birds of Massachusetts.* In: *Mem. Amer. Acad. Arts and Sci.*, new ser., i, 1833? (probably pub. 1831), pp. 91-106.
This article treats of 44 species, including 2 new ones.
1834. EMMONS, EBENEZER. *Observations on the Time of the Appearance of the Spring Birds in Williamstown, (Mass.) in the Years 1831, 1832, & 1833.* In: *Silliman's Amer. Journ. Sci.*, xxvi, 1834, p. 208.
Observations on 23 species.
1837. BREWER, THOMAS MAYO. *Some Additions to the Catalogue of the Birds of Massachusetts in Prof. Hitchcock's Report, &c.* In: *Journ. Boston Soc. Nat. Hist.*, i, pt. iv, 1837, pp. 435-439.
Adds 45 species to Emmons' list.

1839. PEABODY, WILLIAM B. O. A Report on the Ornithology of Massachusetts. In: Rep. Fishes, Reptiles, and Birds of Mass. 8vo. Boston, 1839. pp. 255-404.
Biographical notices, more or less extended, of 285 species known or believed to occur in Massachusetts.
1840. PEABODY, WILLIAM B. O. A Report on the Birds of Massachusetts made to the Legislature in the Session of 1838-9. In: Journ. Bost. Soc. Nat. Hist., iii, 1840, pp. 65-266.
Same as that in the State Report of 1839, *q. v.*
1842. ABBOTT, S. L. [Remarks on some Birds of Connecticut.] In: Proc. Bost. Soc. Nat. Hist., i, 1842, p. 56.
1843. LINSLEY, J. H. A Catalogue of the Birds of Connecticut, arranged according to their natural families. In: Amer. Journ. Sci. and Arts, xlv, No. 2, April, 1843, pp. 249-274. See *ibid.*, xlvi, 1844, pp. 50, 51.
This important list includes 302 species, being domesticated birds, and others believed to occur in the State, as well as native species known to do so. Merriam's late analysis of the list reduces the number to 239, thus eliminating 63 species admitted by Linsley upon inaccurate or insufficient grounds. See 1877.
1842. THOMPSON, ZADOCK. History of Vermont, Natural, Civil, and Statistical [etc.]. 1 vol. 8vo. Burlington, 1842. (2d ed. 1 vol. 8vo. Burlington, 1853.)
Chap. III, pp. 56-112, of either edition, is on the Birds of Vermont. The ed. of 1853 has additional bird-matter at pp. 20-28 of the Appendix.
1846. HOLDER, J. B. Catalogue of Birds noticed in the vicinity of Lynn [Mass.], during the years of 1844-'5-'6. In: Publications of the Lynn Nat. Hist. Soc., No. 1, Dec., 1846, pp. 1-8.
A nominal list of 185 species.
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Annotated list of 235 species, plus 10 stragglers, with an appendix giving 48 Massachusetts species not observed in Essex County.
1860. FOWLER, S. P. Changes produced by Civilization in the Habits of our [Massachusetts] common Birds. In: Proc. Essex Inst., iii, 1860, pp. 31-36.
- 1860-63. ALLEN, JOEL ASAPH. Birds of New England. In: New England Farmer (weekly paper), Aug. 11, 25, Sept. 22, Oct. 6, 20, Nov. 3, 17, Dec. 1, 22, 1860; Jan. 5, 26, Mar. 2, May 2, May 18, June 15, July 20, Sept. 21, Oct. 26, Nov. 23, 1861; Apr. 26, July 26, Aug. 16, Sept. 13, Oct. 18, 25, Nov.

8, Dec. 6, 1862. Also published in monthly issues of the same paper from Sept., 1860, to Jan., 1863.

Twenty-five articles, giving popular accounts of New England Birds in order from *Accipitres* to the middle of the *Fringillidæ*.

1861. HOLMES, E. Zoology of Maine. Birds. In: Sixth Ann. Rep. Sec'y Maine Board of Agric., 1861, pp. 113-122.
Nominal list of 193 species.
1861. WOOD, WILLIAM. Birds of Connecticut. In: Hartford *Times*, weekly ed., Mar. 16, 23, 30, Apr. 13, 20, May 4, 11, 18, 25, June 1, 8, 15, 22, 29, July 6, 20, 27, Aug. 10, 17, 24, 1861.
This series of articles treats only of the *Accipitres*. Some of the pieces also appeared in the daily ed. of the same paper.
1862. [HITCHCOCK, C. H.] Catalogue of the Birds of Maine. In: Proc. Portland Soc. Nat. Hist., i, pt. i, 1862, pp. 66-71.
Nominal list of about 230 species.
1862. BOARDMAN, GEORGE A. Catalogue of the Birds found in the vicinity of Calais, Maine, and about the Islands at the mouth of the Bay of Fundy. In: Proc. Boston Soc. Nat. Hist., ix, 1862, pp. 122-132.
Annotated list of 227 species, with 4 others added by the editor of the paper, A. E. Verrill.
1862. HOLMES, E. Birds of Maine—(Addenda.) In: Second Ann. Rep. Nat. Hist. and Geol. of Maine, 1862, p. 118.
Adds 13 species to his list of 1861, *q. v.*
1862. VERRILL, A. E. Catalogue of the Birds found at Norway, Oxford Co., Maine. In: Proc. Essex Inst., iii, 1862, pp. 136-160.
Annotated list of 159 species, followed by a similar list of 107 Maine Birds not observed at Norway.
1863. SAMUELS, EDWARD A. Mammalogy and Ornithology of New England, with reference to Agricultural Economy. In: Rep. U. S. Commissioner of Agric., 1863, pp. 265-286.
A general sketch of the subject.
1863. VERRILL, A. E. Additions to the Catalogue of the Birds found in the vicinity of Calais, Me., and about the Bay of Fundy. In: Proc. Boston Soc. Nat. Hist., ix, 1863, pp. 233, 234.
Twelve species added to Boardman's list of 1862, *q. v.*
1864. ALLEN, JOEL ASAPH. Catalogue of the Birds found at Springfield, Mass., with Notes on their Migrations, Habits, &c.; together with a list of those Birds found in the State not

yet observed at Springfield. In: Proc. Essex Inst., iv, 1864, pp. 48-98.

Giving 195 species at Springfield; 296 in Massachusetts.

1864. SAMUELS, EDWARD A. Ornithology of Massachusetts—List of Species. In: Eleventh Ann. Rep. Sec'y Mass. Board of Agric. for 1863, 1864, Appendix, pp. xviii-xxix. Also separate, 8vo, Boston, 1864, pp. 15.
Annotated list of 267 species.
1865. HAMLIN, C. E. Catalogue of Birds found in the Vicinity of Waterville, Kennebec County [Maine]. In: Tenth Ann. Rep. Sec'y Maine Board of Agric. 1865, pp. 168-173.
Nominal list of 135 species.
1865. SAMUELS, EDWARD A. Oology of some of the Land Birds of New England, as a means of identifying injurious or beneficial species. In: Rep. U. S. Agric. Dept. for 1864, 1865, pp. 386-430.
Treating of a large number of species.
1867. ALLEN, JOEL ASAPH. Winter Notes of an Ornithologist. In: Amer. Nat., i, 1867, pp. 38-48.
Relating to Birds of Massachusetts.
1867. ALLEN, JOEL ASAPH. Ornithological Calendars. In: Amer. Nat., i, 1867, pp. 54, 109, 160.
Appearances of migratory Birds in Massachusetts in March, April, and May.
1867. ALLEN, JOEL ASAPH. The Birds of Spring. In: Am. Nat., i, 1867, pp. 141-144.
Relating to New England.
1867. SAMUELS, EDWARD A. Ornithology and Oology of New England; [etc.]. 1 vol. 8vo. Boston, 1867.
There are several editions of this popular treatise: 4to, Boston, 1868; 8vo, Boston, 1870; 8vo, Boston, 1875.
1867. WYMAN, JEFFRIES. An Account of some Kjøekkenmæddings, or Shell-heaps, in Maine and Massachusetts. In: Amer. Nat., i, 1867, pp. 561-584.
Remains of various birds noted, especially of *Alca impennis*.
1868. COUES, ELLIOTT. Catalogue of the Birds of North America contained in the Museum of the Essex Institute; with which is incorporated A List of the Birds of New England. With Brief Critical and Field Notes. In: Proc. (Comm.) Essex Inst., v, 1868, pp. 249-314. (Also sepa-

rately published, re-titled A List of the Birds of New England. 8vo. Salem, 1868. pp. 71.

This article, aside from the Museum Catalogue, gives an annotated synopsis of the Birds of New England, 335 in number, with various others indicated as of probable occurrence.

1869. BOARDMAN, GEORGE A. Breeding of Rare Birds [at Milltown, Me.]. In: Am. Nat., iii, 1869, p. 222.
1869. BOARDMAN, GEORGE A. The Black Vulture in Maine. In: Amer. Nat., iii, 1869, p. 498.
Also, occurrence there of *Gallinula martinica*.
1869. BREWER, THOMAS MAYO. Sea-side Ornithology. In: Amer. Nat., iii, 1869, pp. 225-235.
Relating to Birds of the New England coast.
- 1869-70. ALLEN, JOEL ASAPH. Notes on some of the Rare Birds of Massachusetts. In: Amer. Nat., iii, 1869, pp. 505-519; iii, 1870, pp. 568-585, 631-648.
Supplementary to the author's paper of 1864, raising the number of Massachusetts birds to 315.
1870. MAYNARD, C. J. Catalogue of the Birds of Eastern Massachusetts, with notes relative to their migration, habits, etc., etc., etc. In: The Naturalist's Guide. Part II. pp. 81-170.
Annotated list of 299 species.
- 1871-72. GOODHUE, DANIEL. Catalogue of, and Observations on the Birds of Vermont. In: Arch. Sci. and Trans. Orleans Co. Soc. Nat. Hist., i, No. iii, Apr., 1871, pp. 102-105; No. v, Oct., 1872, pp. 171-174.
This rare tract was not seen by Dr. Coues in preparing his Bibliography, and has never before been correctly cited in full. The article is a mere fragment, never completed.
1871. BOARDMAN, GEORGE A. Ornithological Notes from Maine. In: Am. Nat., v, 1871, p. 662.
Notes on four species.
1871. PALMER, C. Ornithological Notes. In: Am. Nat., v, 1871, p. 120.
Four species, in Maine.
1872. BREWSTER, WILLIAM. Birds New to Massachusetts Fauna. In: Amer. Nat., vi, 1872, pp. 306, 307.
Six species given, among them *Tringa bairdi*.
1872. MAYNARD, C. J. A Catalogue of the Birds of Coos Co., N. H., and Oxford Co., Me., with annotations relative to the breeding habits, migrations, etc. . . . With Notes by

- Wm. Brewster. In : Proc. Bost. Soc. Nat. Hist. for Oct., 1871, pub. 1872, pp. 356-385.
Fully annotated list of 164 species.
1873. HERRICK, HARROLD. A partial Catalogue of the Birds of Grand Menan, N. B. In: Bull. Essex Inst., v, No. 2, 1873, pp. 28-41.
Annotated list of 194 species.
1873. WHITMAN, S. P. Pigeon Cove and Vicinity. By H. C. Leonard. 1 vol. 16mo. Boston, 1873.
Contains; at pp. 157-175, notes on Birds of Cape Ann, by S. P. Whitman.
1873. PURDIE, H. A. Notes on some of the Rarer Birds of New England. In : Amer. Nat., vii, 1873, pp. 692, 693.
Mention of about 25 species. Attention is called to the extension of the Carolinian Fauna into New England.
1875. BREWER, THOMAS MAYO. Catalogue of the Birds of New England, with brief notes indicating the manner and character of their presence ; with a list of species included in previous catalogues believed to have been wrongly classed as Birds of New England. In : Proc. Boston Soc. Nat. Hist., xvii, 1875, pp. 436-454.
This is one of the two leading lists of New England Birds, and is very reliable, as far as it goes. It gives 336 species, and rejects 29 which are supposed to have no claim to be included—this being almost exactly the number which the author, in two subsequent lists, found it necessary to restore.
1875. BROWN, NATHAN C. Ornithological Notes from Portland, Maine. In : Rod and Gun, vi, May 8, 1875, p. 81.
1875. CHICKERING, J. J. Notice of White Mountain Birds and Insects. In : Field and Forest, i, No. 6, Nov., 1875, p. 48.
1875. FLAGG, WILSON. Birds and Seasons of New England. 1 vol. 8vo. Boston, 1875.
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1875. STEARNS, W. A. Birds Breeding on Penikese Island [Massachusetts]. In : Amer. Nat., ix, 1875, pp. 514, 515.
1876. ALLEN, JOEL ASAPH. Decrease of Birds in Massachusetts. In : Bull. Nuttall Club, i, No. 3, Sept., 1876, pp. 53-60.
1876. BREWER, THOMAS MAYO. Birds of New England. In : Bull. Nuttall Club, i, No. 4, Nov., 1876, pp. 89-93.
Controversial, in defence of his list of 1875.
1876. BREWSTER, WILLIAM. On the occurrence of certain Birds in the New England States. In : Bull. Nuttall Club, i, No. 1, Apr., 1876, pp. 17-20.
Five species.

1876. GLADWIN, CHARLES O. Birds of Southern Connecticut. In: Forest and Stream, vi, Mar. 30, 1876, p. 116.
1876. GRAY, ARTHUR F. Resident Birds of Danvers [Mass.]. In: Forest and Stream, vi, Apr. 27, 1876, p. 181.
1876. KEYES, F. H. May Songsters at Springfield [Mass.]. In: Forest and Stream, vi, June 20, 1876, p. 338.
1876. MERRIAM, C. HART. Passerculus princeps and Parus hudsonicus in Connecticut. In: Bull. Nuttall Club, i, No. 2, July, 1876, p. 52.
1876. MINOT, H. D. The Summer Birds of the White Mountain Region. In: Amer. Nat., x, No. 2, 1876, pp. 75-80.
Commentary on various species.
1876. MORRIS, ROBERT T. Game Birds of Connecticut. In: Forest and Stream, vii, Sept. 28, 1876, p. 116.
Notes on 53 species.
1876. MORRIS, ROBERT T. Local Nomenclature [for wild fowl of Connecticut]. In: Forest and Stream, vii, Dec. 7, 1876, p. 276.
1876. [MORRIS, ROBERT T.] Birds resident at New Haven. In: Forest and Stream, vi, Mar. 2, 1876, p. 52.
1876. PARKER, S. S. A report [on spring birds] from New Hampshire. In: Forest and Stream, vi, Apr. 27, 1876, p. 180.
1876. P[URDIE], H. A. Birds of New England. In: Bull. Nuttall Club, i, No. 3, Sept., 1876, pp. 72, 73.
Making some required additions to and corrections of Dr. Brewer's Catalogue of 1875.
1876. ROBINSON, R. E. Spring Birds of Vermont. In: Forest and Stream, vi, June 22, 1876, p. 318.
1876. [NEWCOMB, R. L.] The Massachusetts Coast. In: Forest and Stream, vi, Aug. 3, 1876, p. 417.
Ornithological diary, March 9 to May 17.
1877. BREWER, THOMAS MAYO. Defence of his Catalogue of the Birds of New England. In: Bull. Nuttall Club, ii, No. 2, Apr., 1877, pp. 44-48.
Continuation of the controversy.
1877. BROWN, NATHAN C. Notes on Birds new to the Fauna of Maine, etc. In: Bull. Nuttall Club, ii, No. 1, Jan., 1877, pp. 27, 28.
Five species given.

1877. BROWNE, F. C. A List of Birds observed on and around Clark's Island, Plymouth, Mass. In: *Forest and Stream*, viii, Mar. 22, 1877, p. 96.
1877. GOODHUE, C. F. The Birds of Webster [N. H.] and adjoining Towns. In: *Forest and Stream*, viii, 1877, pp. 33, 49, 98, 113, 146.
Annotated list of species.
1877. MERRIAM, C. HART. A Review of the Birds of Connecticut, with Remarks on their Habits. In: *Trans. Conn. Acad.*, iv, 1877, pp. 1-165. Also separate, 1 vol. 8vo. New Haven, 1877. 1 p. l., pp. 1-165+1.
* This is an important article, being the best authority on the Birds of the State. It treats more or less fully of 291 species, with special reference to Linsley's catalogue of 1843.
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1877. PURDIE, H. A. Distribution of New England Birds. A reply to Dr. T. M. Brewer. In: *Bull. Nuttall Club*, ii, No. 1, Jan., 1877, pp. 11-17.
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1877. PURDIE, H. A. Notice of a few Birds of rare or accidental Occurrence in New England. In: *Bull. Nuttall Club*, ii, No. 1, Jan., 1877, pp. 20-22.
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1878. ALLEN, JOEL ASAPH. A List of the Birds of Massachusetts, with Annotations. In: *Bull. Essex Inst.*, x, 1878, pp. 3-37.
Species authentic in the State, 317; extirpated, 4; of probable occurrence, 24; hypothetical species, 3. "Considered as fairly entitled to recognition as Massachusetts birds," 340.
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1878. BREWER, THOMAS MAYO. Notes on certain Species of New England Birds, with additions to his Catalogue of the Birds of New England. In: *Proc. Boston Soc. Nat. Hist.*, xix, Apr., 1878, pp. 301-309.
Twenty-one species to add to his list of 1875.

1878. BROWNE, F. C. Spring Migration of Birds [in Massachusetts]. In: *Forest and Stream*, x, Mar. 7, 1878, p. 76.
Tabular exhibit of dates of arrival of 20 species.
1878. MURDOCK, J. Effects of the warm Winter on the Migration of Birds [in Massachusetts]. In: *Bull. Nuttall Club*, iii, No. 2, Apr., 1878, pp. 75, 76.
1878. [NEWCOMB, R. L.] Extracts from a Naturalist's Note-Book [at Salem, Mass.]. In: *Forest and Stream*, x, Apr. 4, 1878, p. 155.
1878. NEWCOMB, R. L. Field Notes [on Birds at Salem, Mass.]. In: *The Country*, Apr. 13, 1878, p. 354.
1878. NEWCOMB, R. L. [Occurrence of Rare Birds at Salem, Mass.] In: *The Country*, June 29, 1878, p. 152.
1878. PURDIE, H. A. Capture of the Yellow-Throated Warbler in Massachusetts, and Notes on other Rare Massachusetts Birds. In: *Bull. Nuttall Club*, iii, No. 3, July, 1878, p. 146.
1878. WOOD, WILLIAM. The Birds of Connecticut. In: *Familiar Sci. and Fancier's Jour.*, new ser., v, 1878, pp. 6, 26, 49, 73, and continued.
1879. BROWN, NATHAN C. Notes on a few Birds occurring in the Vicinity of Portland, Me. In: *Bull. Nuttall Club*, iv, No. 2, Apr., 1879, p. 106.
1879. BROWNE, F. C. Notes on Arrival, Presence, and Departure of Water Birds, at and near Clark's Island, Plymouth, Mass., from May 1 to Dec. 26, 1852. In: *Forest and Stream*, xii, June 19, 1879, p. —.
Capture of *Micropalama himantopus*, etc., in 1852.
1879. BOARDMAN, GEORGE A. Southern Birds Down East. In: *Forest and Stream*, xiii, Sept. 4, 1879, p. 605.
Cathartes atratus and *Rhynchops nigra* in Maine.
1879. BREWER, THOMAS MAYO. Notes on New England Birds. In: *Bull. Nuttall Club*, iv, No. 1, Jan., 1879, pp. 63, 64.
Occurrences of 7 species.
1879. BREWER, THOMAS MAYO. Some Additional Notes upon Birds observed in New England, with the names of five species not included in his previous Lists of New England Birds. In: *Proc. Boston Soc. Nat. Hist.*, xx, for May 7, 1879, pub. Nov., Dec., 1879, pp. 263-277.
Being the second of his supplementary lists; see 1878 and 1875. The total of New England birds is here raised to 361.

BIRDS OF NEW ENGLAND.

FAMILY TURDIDÆ: THRUSHES.

ROBIN.

TURDUS MIGRATORIUS *Linn.*

Chars. Above, dark olive-gray, becoming black on the head and blackish on the tail; under parts, to the vent, and including the under wing-coverts, chestnut, of a rich deep shade in adult summer birds, paler or variegated with white or gray in immature examples. Throat streaked with white and black. Three white spots on the eyelids. Under tail-coverts and tibiæ white, mixed with more or less gray. Wing-quills dusky, edged with hoary ash, and with the color of the back. Ends of outer tail-feathers white. Mouth yellow. Bill of a rich yellow, often with dusky tip; in the young, dusky. Feet blackish, the soles yellowish. Eyes dark brown. Very young birds are speckled above and below, each feather being spotted. The Robin is subject to albinism, partial or complete; and instances of melanism have been recorded. Length, 9.50-10.50; extent, 15.00-16.00; wing, 5.00-5.50; tail, 4.00-4.50; bill, 0.80; tarsus, 1.25.

Summer resident, everywhere abundant. Arrives early in March, and departs about the middle of November; but individuals may be found at times throughout the winter. Breeds in great numbers. The nest of the Robin may be found almost anywhere, the favorite situations, however, being in trees in

orchards, gardens, and fields; it is sometimes placed on rafters or under the eaves of houses, more rarely in bushes or even on the ground. It is a bulky structure, largely composed of mud, surrounded with coarse and lined with fine vegetable fibre. The eggs



FIG. 7. — HEAD OF ROBIN. (Natural size.)

are usually four or five in number, plain greenish blue (though occasionally speckled), measuring 1.10 to 1.25 in length, by 0.75 to 0.85 in breadth.

Two or three broods may be reared; the first eggs being laid in April, the next late in May, and sometimes another set in July. The Robin is one of the most beneficial birds to the agriculturist, destroying incalculable numbers of noxious insects during the whole time that it is engaged in rearing its young. The enormous amount of insect food required and consumed by a nestful of young Robins can hardly be realized by those who are not familiar with the statistics which have been derived from actual observation.* It is, therefore, entitled to protection and encouragement, notwithstanding its inroads upon garden fruit at certain seasons. In the fall it takes to the woods, and gathers in large flocks, preparatory to the departure of most of the individuals composing them.

* See, for example, the observations of *Lyle*, in *Am. Nat.*, xii, 1878, p. 448; or of *Forbes*, in *Trans. Illinois Hortic. Soc.*, xiii, 1879, p. 120.

VARIED THRUSH.

TURDUS NÆVIUS *Gm.*

Chars. "Above, rather dark bluish slate; under parts generally, a patch on the upper eyelids continuous with a stripe behind it along the side of the head and neck, the lower eyelid, two bands across the wing-coverts and the edges of the quills, in part, rufous orange brown; middle of the belly white. Sides of head and neck, continuous with a broad pectoral transverse band, black. Most of the tail-feathers with a terminal patch of brownish white. Bill black. Feet yellow. Female more olivaceous above, the white of the abdomen more extended, the brown beneath paler; the pectoral band obsolete. Length, 9.75; extent, 15.00; wing, 3.90; tail, 1.25."—(*Baird.*)

The Oregon Robin, or Varied Thrush, is only a straggler from the Pacific slopes. There is but one authentic instance of its occurrence in New England.

A single individual was taken at Ipswich, Mass., in December, 1864.

(See *Coues*, Pr. Essex Inst., v, 1868, p. 312; *Allen*, Am. Nat., iii, 1869, p. 572; *Maynard*, Nat. Guide, 1870, p. 89; *Brewer*,



FIG. 8. — HEAD OF VARIED THRUSH. (Nat. size.)
Pr. Bost. Soc., xvii, 1875, p. 438; *Allen*, Bull. Essex

Inst., x, 1878, p. 00; all these notices referring to the same case.)

The bird had been previously, but wrongly, accredited to New England; for it appeared afterward that a specimen found in the Boston market was really from New Jersey. There are other instances of the capture of specimens at Islip, Long Island, and at Hoboken, New Jersey. (See *Coues*, Birds Col. Valley, 1878, p. 19.)

WOOD THRUSH.

TURDUS MUSTELINUS *Gm.*

Chars. Upper parts tawny, purest and deepest on the head, shading into olive on the rump and tail; below, white, faintly tinged on the breast with buff, nearly everywhere marked with large, well-defined, rounded or triangular spots of blackish. Inner webs and ends of wing-quills dark brown, with buffy or whitish edging toward their bases. Ear-coverts sharply streaked with dusky and white. Bill blackish-brown, with flesh-colored or yellowish base of under mandible. Feet flesh-colored. This is the largest species of the subgenus *Hyllocichla*, which includes all the smaller spotted Thrushes of North America. Length, 7.50-8.00; extent, about 13.00; wing, 4.00-4.25; tail, 3.00-3.25; bill, 0.75; tarsus, 1.25. The sexes are alike. In its first plumage the young is speckled above.

This famous vocalist, whose song is so delightful at dawn and sunset during the mating season, is a summer resident, but not very abundant, and less so in northern than in southern New England, being decidedly the most southerly of the four common species of its subgenus. It is one of the species which is practically limited in its northward range by the Alleghanian Fauna, and its presence in New England in

midsummer is a good indication that such locality belongs to this Fauna. It is found chiefly in low, damp woods, and in thickets. The nest is usually placed in a bush or low tree, in the situations just indicated, a few feet from the ground. It is composed of leaves and grasses, with a layer of mud, and then a lining of fine rootlets.

The eggs, four or five in number, are greenish-blue, like those of the Robin, but smaller, being 1.05 to 1.12 in length by 0.68 to 0.75 in breadth. They are laid usually about the last of May. The bird arrives from the south early in May, and departs for its winter home during October.



FIG. 9.—HEAD OF WOOD THRUSH. (Nat. size.)

HERMIT THRUSH.

TURDUS PALLASI *Cab.*

Chars. Above, brownish-olive, changing on the rump and upper tail-coverts to reddish-brown; under parts white, shaded with olive-gray on the sides, tinged with buff on the neck and breast, and marked with numerous large angular dusky spots. Throat unmarked. A yellowish ring round the eye. Bill dusky, most of the under mandible pale. Mouth yellow. Eyes brown. Feet pale brownish. Length of male, 7.00-7.50; extent, 11.00-12.00; wing, 3.50-3.75; tail, 2.75-3.00; bill, 0.45; tarsus, 1.00. Female smaller, scarcely 7.00 long, &c. Very young birds are speckled on the upper parts, like other species of this group, and of various related families of *Oscines*.

[*Obs.* The proper name of this species is much in question, and not easy to determine. The earliest designation of any American "Hermit" Thrush appears to be *Turdus aonalaschkae*, Gm., Syst. Nat., 1788, p. 808, from the island of Unalashka. Supposing this to have actual reference to the Western variety called *Turdus nanus* by Baird in 1858, and by most subsequent writers, and remembering that *Turdus nanus* of Audubon was based upon a specimen from Pennsylvania, though also extended to include the Western form, it would appear that by strict construction of the rules of nomenclature the Eastern Hermit Thrush should be called *Turdus aonalaschkae* var. *nanus*. On this point, see *Coues*, Birds Col. Valley, 1878, p. 20; *Ridgw.*, Proc. Nat. Mus., ii, 1880, p. 1. — C.]

The Hermit Thrush is another bird whose breeding range draws a line between the two principal Faunæ of New England, being restricted in the breeding season to the Canadian Fauna, as the Wood Thrush is to the Alleghanian. It hence inhabits northern New England and the higher parts of Massachusetts in the summer, but is only a migrant in spring and fall in other portions of the country. At these seasons, and particularly in the autumn, it is very common in southern New England. It reaches Connecticut early in April, and spreads northward during that month. The return movement from its breeding grounds begins in September, but is protracted through the greater part of November; and, not impossibly, a few stragglers may linger in winter in the Connecticut valley. During the breeding season it is a shy, solitary bird, inhabiting chiefly low, dense woods; but it is more generally distributed, and oftener seen, during the migrations. The nest is built on the ground or very near it, in some low, secluded spot, generally in dense shrubbery; no mud is used in its composition, the structure being a rather bulky mass of leaves, weeds, bark, and

grasses. The eggs, four or five in number, resemble those of the Wood Thrush or Robin in being greenish-blue, normally without spots, but are smaller, measuring about 0.90 by 0.65; they are indistinguishable from those of the Veery. The Hermit is an eminent vocalist, but sings only for a short period during the nesting season, when the retiring and exclusive habits of the bird withdraw it from common observation. It utters a plaintive note of two syllables when driven from its nest, and at other times has only a single call-note. As the name implies, it is the most secretive of the Thrushes in its habits, and would be little known were it not so abundant and so widely dispersed during the migrations.

OLIVE-BACKED THRUSH.

TURDUS SWAINSONI *Cab.*

Chars. Above, clear olivaceous, of the same shade over all the upper parts; below, white, strongly shaded with olive on the sides; the throat, breast, and sides of the head and neck tinged with buff, and most of the under parts, except the throat, marked with numerous large dusky spots; a strongly-marked yellowish ring around the eye; mouth yellow; bill blackish, the basal half of the lower mandible pale; iris dark brown; feet pale brown. Length of male, 7.00-7.50; extent, 12.00-12.50; wing, 4.00; tail, 3.00; bill, 0.50; tarsus, 1.10. Female smaller: length, 6.75; extent, 11.50, &c.

The range of the Olive-backed Thrush in New England is closely coincident with that of the Hermit. Like the latter, it breeds in the Canadian, and is a migrant in the Alleghanian, Fauna. It is rather less

abundant than the Hermit, especially during the migrations, in most localities ; moreover, it arrives rather later in the spring, and does not linger so long in the autumn. Entering Connecticut early in May, it passes on to the Canadian Fauna during that month ; a few doubtless breed in elevated portions of Massachusetts, but the majority go farther north. Leaving its breeding grounds early in September, it is commonly seen in southern New England during that month and about half of October, generally in small, straggling companies, which flit secretly through the woods and shrubbery, or ramble quietly over the ground, among fallen leaves. In some parts of Maine and New Hampshire it is the commonest Thrush, except the Robin, during the breeding season. Its usual resorts are similar to those of the Hermit, but the mode of nesting, as well as the eggs, is quite different, though the structure of the nest itself is much the same. The nest is built not upon the ground, but in a bush or small tree, at a man's height, or beyond it. The first set of eggs is laid about the 1st of June, and there may be a second set five or six weeks later. These are usually four in number, dull greenish-blue in ground-color, but freely speckled with brownish. In size they are not distinctively different from those of the Hermit, but may average a trifle larger. The Olive-back has a pleasing song while mating and nesting, and is not at all chary of its vocalization at such times ; but nothing will be heard from it during the migrations except a sharp, abrupt call-note. Its general habits and tastes are like those of the Hermit, the most evident difference between the two birds being in the position of their nests and the times of their migrations.

GRAY-CHEEKED THRUSH.

TURDUS SWAINSONI ALICLÆ (*Bd.*) *Coues.*

Chars. Similar to *T. swainsoni*; differing in lacking the yellowish eye-ring and the buffy suffusion on the breast and sides of the head, in being rather larger, and in having a longer and comparatively slender bill. The average size of the bird represents about the maximum dimensions of *T. swainsoni*. The length sometimes exceeds 8.00, and the bill is rather over 0.50.

This species or variety is common in New England during the migrations, but is not, to my knowledge, known to breed within our limits. So far as our incomplete information enables us to judge, it is decidedly a more northern bird than the Olive-backed Thrush — one whose breeding range does not reach south of the Hudsonian Fauna. According to the view taken by Dr. Coues, it is just this difference in the breeding range which effects those distinctions in color and size which have been claimed as specific, the Gray-cheeked Thrushes being the larger and darker northern-bred individuals of the *swainsoni* stock. Mr. Allen has always declined to recognize the bird as in any way distinct from the Olive-backed, uniting the two together in his latest list of Massachusetts birds. Dr. Brewer's New England list rates it as a good species, with the remark: "migratory in spring and fall." Mr. Minot also presents it as a species, considering it "a rare migrant" in New England. According to Mr. Merriam, it occurs in Connecticut with the Olive-back during the migrations, being more numerous than the latter in some parts of that State, as about New Haven, and less so in other localities.

While on the subject of the specific characters of the New England Thrushes, I may note how easily the four leading species may be distinguished by the color of the upper parts alone. The Wood Thrush is tawny, turning to olive on the rump. The Hermit is olive, turning to tawny on the rump. The Olive-back is entirely olive. The Veery is entirely tawny.

TAWNY THRUSH; VEERY.

TURDUS FUSCESCENS Steph.

Chars. Above, entirely reddish-brown, of the same shade throughout. Below, white, the sides shaded with pale gray, the throat and fore breast (only) strongly tinged with buff, in which buff area are a few small brown arrow-heads, the chin and throat, however, mostly immaculate. There are a few obsolete grayish spots in the white of the lower breast, but the markings are otherwise confined to the restricted buff area. No decided light ring around the eye. Bill dark above, mostly pale below; feet pale. Length of male, 7.00-7.50; extent, about 12.00; wing, 4.00-4.25; tail, 3.00; bill, 0.60; tarsus, 1.20. Female smaller. Average dimensions, taken from both sexes, are: length, 7.35; extent, 11.75; wing, 3.90; tail, 2.85; tarsus, 1.12.

The Veery is the commonest of the Thrushes, excepting always the Robin, in southern New England during the breeding season. Like the Wood Thrush, it is characteristic of the Alleghanian Fauna at such times, though it also extends sparingly into the Canadian, where the Hermit and the Olive-back are so abundant and characteristic. It enters Connecticut about the last of April, and reaches Massachusetts early in May; the greater number are then already on their breeding grounds, but few passing farther on,

as just intimated. The eggs are laid about the 1st of June, a second set being sometimes deposited in July. The nesting habits, as well as the general traits of the bird, are similar to those of the Hermit, although the Veery is not so retiring and solitary. The nest is usually placed on the ground, or near it, at the foot of a bush or tussock, though sometimes elevated a little distance. The eggs, to the number of four or five, are rather pale greenish-blue, normally unmarked, and measure on an average about 0.85 by 0.60. Neither the nest nor the egg is distinguishable with certainty from that of the Hermit. The departure of the birds in the fall is prompt, the movement beginning early in September, and being concluded in the fore part of the following month.

MOCKING-BIRD.

MIMUS POLYGLOTTUS (*L.*) *Boie.*

Chars. Above, ashy-gray; below, dull white; wings and tail blackish, the former marked with large white spaces on the primary quills, and across the ends of the coverts, the outer tail-feathers entirely white, the next pair (one or more) tipped with white. Bill and feet black, the former often pale at base below; soles dull yellowish. The male is known from the female by the superior size, and greater extent and purity of the white markings on the wings and tail. Young birds are brownish-gray above, and speckled below. Length of male about 10.00, but ranging from 9.50 to 11.00; extent, 13.00-15.00; wing, 4.00-4.50; tail, 4.50-5.00; bill, 0.75; tarsus, 1.25.

The Mocking-bird is practically restricted in its northward extension to the Carolinian Fauna, and has but once been observed beyond Massachusetts, where,

as also in Connecticut and in Rhode Island, it is a rare summer resident — if indeed it be of more than casual occurrence. Its true home is in the Southern States, and in the Middle, even, it is not a common bird. It was given in 1843 by Linsley as a bird of Connecticut, and has since been occasionally reported from the three nether States of New England. According to Allen, writing in 1864, it had been known to breed in Springfield, Mass., several times within five years, and two pairs nested there in 1860. Mr. Samuels gives it as a rare summer resident, occasionally breeding in Massachusetts; and Mr. Brewster took it late in the fall near Concord, Mass. Dr. Brewer records a specimen

from Nantucket, October 8, 1878, and another taken in Boston, Decem-

ber 7, 1878

— the latter, however, being

unquestionably an escaped cage-bird.

Mr. Merriam gives several Connecticut instances. The

northernmost point known to have been reached is Calais, Me., where one individual was observed by Mr. G. A. Boardman.

The principal New England records of captures or occurrences are as follows:—*Peabody*, Rep. Orn. Mass., 1839, p. 300. *Linsley*, Am. Journ. Sci., xlv,



FIG. 10. — MOCKING-BIRD.
(About $\frac{2}{3}$ natural size.)

1843, p. 255. *Allen*, Pr. Essex Inst., iv, 1864, p. 67. *Brewster*, Rod and Gun, v, Mar. 13, 1875, p. 370. *Merriam*, Rev. Birds Conn., 1877, p. 7. *Brewer*, Pr. Bost. Soc., xx, 1879, p. 263.

CAT-BIRD.

MIMUS CAROLINENSIS (L.) Gray.

Chars. Slate-colored, paler and more grayish below. Crown of head, wings, tail, bill and feet black. Under tail-coverts chestnut. Young more sooty-colored, with little or no distinction of a black cap, and the under tail-coverts dull rufous. Length, 8.50-9.00; extent, 11.00-12.00; wing, 3.50-3.75; tail, 4.00; bill, 0.70; tarsus, 1.00-1.10.

An abundant summer resident throughout nearly the whole of New England. It is restricted in its northern extension only by the Canadian Fauna, and is said to be wanting in New England only in northeastern Maine. It enters the country the last of April or early in May, and remains



FIG. 11. — HEAD OF CAT-BIRD. (Natural size.)

through the greater part of October in most sections, only finally withdrawing from the lower Connecticut valley in November. It breeds throughout its range. The nest is one of the most familiar objects in orchards, shrubbery, and about the skirts of woods, very generally placed but a few feet from the ground. It is

constructed chiefly of leaves, bark-strips, and rootlets, mixed with twigs of considerable size, rags, twine, &c.,—but roots and bark are usually most conspicuous in its structure. The eggs, to the number of four or five, are rich dark bluish-green in color, unmarked, measuring about 0.90 long by 0.68 broad. Two broods may be reared under favorable circumstances. The first set of eggs is laid about the last of May; the next, if there be one, early in July. Besides its curious note of alarm and interrogation, from the sound of which the common name of the species is derived, the Cat-bird has a song of great compass, variety, and melody. Next after the Thrasher and the Mocking-bird, "prince of song," the palm must be awarded to this humble tenant of the shrubbery for power of mimicry and range of vocalization, as well as for sweetness of execution in singing. It is also entitled to protection and grateful regard on account of the great numbers of injurious insects which it destroys—a service to us against which the small quantity of fruit which the Cat-bird steals should be considered no offset. Notwithstanding its musical ability, its harmless and inoffensive disposition, and the benefits it confers upon the agriculturist, the Cat-bird is an object of derision and persecution, as undeserved as it is cruel. It is not easy to account for this subtle yet decided aversion which the bird excites; but it is like the feeling which many persons have against cats, and is probably occasioned by the mewing, cat-like cry of this incomparable mimic.

BROWN THRUSH; THRASHER.

HARPORHYNCHUS RUFUS (L.) Cab.

Chars. Above, uniform rich rust-red, with a bronzy tint; below, white, more or less strongly tinged with tawny, especially on the breast and flanks, and marked profusely with oval or lanceolate spots of dark brown, which run up each side of the throat in a chain. Throat, belly, and under tail-coverts only unspotted. Wings and tail like the back, the tail-feathers having pale tips, and the greater and median wing-coverts being blackish near their ends, then conspicuously tipped with white. Bill black, yellow at base below. Iris fine yellow. Length, about 11 inches; extent, 12.50-14.00; wing, 3.75-4.25; tail, 5.00 or more; bill, 1.00; tarsus, 1.25.

The well-known Thrasher is a common summer resident in southern New England, though less abundant than the Cat-bird, and not extending so far north, being decidedly characteristic of the Alleghanian Fauna. It does not appear to be so hardy as its humble relative just named, and is seldom if ever

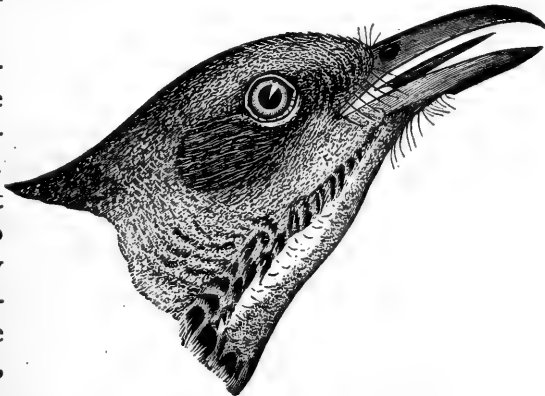


FIG. 12.—HEAD OF THRASHER. (Natural size.)

seen even in Connecticut after the first few days of October. It arrives late in April, and is soon dispersed

throughout its breeding range, which includes the lower parts of Vermont, New Hampshire, and Maine. Eggs, to the varying number of three to six, are usually laid twice each season, the first set late in May, the next early in July. The habitual resorts of the Thrasher are those shared with the Cat-bird, and the mode of nidification is essentially the same ; though there is greater latitude of choice in selecting a nesting site, which is sometimes on the ground, oftener in low, thick shrubbery, occasionally twenty feet from the ground in a close-foliaged tree. The eggs are readily recognizable, being dull white or greenish-white, thickly and minutely speckled with light brownish or reddish dots ; they measure an inch or more in length, by about four-fifths of an inch in breadth. While the general traits and habits of the Thrasher resemble those of the Cat-bird closely, the former is a shyer and more retiring bird, keeping in closer concealment in the shrubbery, and usually hiding nearer the ground. It is quick and furtive in its movements, and on fearing detection will often long remain motionless, until it sees a chance to steal silently away. It is fond of rambling on the ground, where it scratches over the fallen leaves like a Towhee Bunting. The song is little inferior to the proper performance of the Mocking-bird, though its range of mimicry is much more restricted. Like the Cat-bird, the Thrasher delights to mount to some high or isolated perch during the nuptial season, and there, in an easy attitude, with depending tail, loosened plumage, and head thrown up, repeat again and again its delightful strains.

FAMILY SAXICOLIDÆ: STONE CHATS, ETC.

WHEAT-EAR; STONE CHAT.

SAXICOLA CENANTHE (L.) Bechst.

Chars. Adult: Ashy-gray; forehead, supraciliary line, and under parts white, latter often brownish-tinted. Upper tail-coverts white; wings and tail black, latter with most of the feathers white for half their length. Line from nostril to eye, and broad band on side of head, black. Bill and feet black. Young, everywhere cinnamon brown, paler below. Wing, 3.50; tail, 2.50; tarsus, 1.00; middle toe and claw, 0.75. — (*Coues.*)

A rare straggler to New England, of entirely fortuitous occurrence.

[In 1868, I included this species in my New England List (*Pr. Essex Inst.*, v, 1868, p. 268), on the strength of its repeated occurrence along the Atlantic coast of North America, from Greenland and Labrador to Long Island and the Bermudas. The propriety of enumerating it among the New England stragglers has been lately established by Mr.

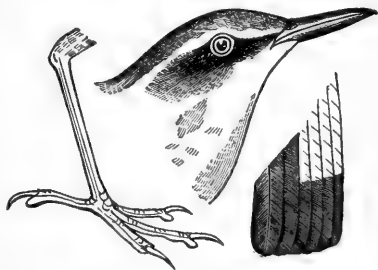


FIG. 13. — DETAILS OF STRUCTURE OF *Saxicola œnanthe*.

Boardman, who records a specimen secured at Calais, Maine (*Bull. Nuttall Club*, v, 1880, p. 115). I found the bird in Labrador in 1860, and the alleged Nova Scotian

example mentioned in my list has since been ascertained to have come from the same country (see Brewer, Pr. Bost. Soc., xvii, 1875, p. 450), where, I am inclined to believe, the Stone Chat will ultimately prove to be found regularly, and not so rarely as has been supposed. Mr. Boardman's New England record remains single. Mr. Lawrence's Long Island record is in Ann. N. Y. Lyc. Nat. Hist., viii, 1866, p. 282.—C.]

BLUE-BIRD.

SIALIA SIALIS (L.) *Hald.*

Chars. Male, in full plumage: Rich azure-blue, the throat, breast and sides chestnut, the belly and under tail-coverts white or bluish-white, the ends of the wing-quills dusky. Bill and feet black. Female, and male in imperfect plumage: The blue of the upper parts obscured by grayish-brown, or interrupted by reddish-brown edging of the feathers; the chestnut paler, the whitish of the belly more extended. Newly-fledged young are brown above, becoming blue on the rump, tail, and wings, the back streaked with whitish lines, nearly all the under parts speckled with white and brownish. A white ring around the eye. Length, 6.50-7.00; extent, 12.00-13.00; wing, 3.75-4.00; tail, 2.75-3.00; bill, 0.45; tarsus, 0.75. Specimens differ much in size, and interminably in color during the progress toward the perfect feathering. Albinotic individuals have been observed.

The Blue-bird, famed for the beauty of its color and the dreamy delight of its voluptuous warbling, is chiefly a summer resident in New England, excepting, probably, the northern portions of Maine. While not strictly limited in its northward range by the Alleghanian Fauna, it is nevertheless much more abundant and more generally dispersed in that area and in the Caro-

linian, than in the Canadian. In southern New England, and particularly in the lower valley of the Connecticut, a few Blue-birds may be observed in the winter, at any time during mild open weather; but it does not follow that such birds actually pass the whole season within our limits. As one of the earliest harbingers of spring, this agreeable bird appears in southern New England sometime in February; and the flocks which make up in the fall do not all leave before the middle of November. From March to October, however, the Blue-birds are in full force, and there are few localities in the southern part of New England where they are not familiar and abundant birds about the habitation of man, though they grow less numerous as we pass northward of Massachusetts. They are very beneficial birds, destroying great numbers of insects, though they also feed extensively on various berries and other small soft fruits. The nest is placed in the hollow of a tree, stump, or fence, or in the box so often provided for their accommodation. It consists chiefly of dried grasses or other soft vegetative materials, but may also be furnished with feathers or hair. The bird is an early breeder, constructing its first nest in April, and usually having eggs by the first week in May; another set may be laid late in June. The eggs are commonly four to six in number; but if they be taken, as many



FIG. 14.—HEADY BLUE-BIRD. (Nat. size.)

as fifteen or twenty may be successively deposited by the distressed but persevering parent. The eggs are very pale blue in color, sometimes almost white, and are unmarked; they measure from 0.75 to 0.85 in length, by 0.60 to 0.65 in breadth.

Being among the most familiar of our several half-domesticated native species, which habitually breed about the dwelling-places of man in the boxes or other shelter provided for their accommodation, the Blue-birds have of late years been incessantly subjected to annoyance by the European Sparrow. These aggressive and quarrelsome birds, finding the boxes quite to their liking, commonly attempt to take forcible possession, and drive out the rightful occupants. To their credit be it said, however, the Blue-birds resent the intrusion with more spirit than such mild-mannered creatures, of the utmost gentleness of disposition, might be expected to display; being not seldom successful in the attempt to defend themselves and hold their own. Sharp disputes, however, are inevitable, in all places where the Sparrows are numerous, and only cease with the complete discomfiture of either the attacking or the defending party; and the inoffensive Blue-birds are sometimes forced to contend against successive outrages of this kind, till all the Sparrows in the vicinity, satisfied of the futility of their attempts to dispossess the resolute Blue-birds, direct their hostilities against other birds, such as Swallows, less fitted by nature to withstand their attack.

FAMILY SYLVIIDÆ: SYLVIANS.

RUBY-CROWNED KINGLET.

REGULUS CALENDULA (L.) *Licht.*

Chars. Above, olive-green, becoming brighter on the rump, the wings and tail dusky, edged with yellowish; wings crossed with two whitish bars, and inner secondaries edged with the same. Under parts dull whitish, tinged more or less strongly with buffy or yellowish or greenish-gray. A whitish ring around the eye. Crown with a concealed patch of rich scarlet (wanting in the young, and also in many spring birds; supposed not to be acquired till the second year). Bill and feet black. Length about 4.25, but varying from 4.10 to 4.50; extent, 6.75-7.50; wing, 2.10-2.30; tail, 1.75; bill, 0.25; tarsus, 0.75.

This dainty little creature is one of the many birds which mark the distinction between the Canadian and Alleghanian Faunæ, being apparently limited by the former in its southward range during the breeding season. There can be no reasonable doubt that it breeds in northern New England, where it has been observed in summer; but I am not aware that the inference has been established as a fact by the discovery of its nest and eggs. In the greater part of New England, however, the Ruby-crown occurs only as a spring and autumn migrant, appearing in the Alleghanian Fauna during the first half of April, on its northward way, remaining a month or so, and then passing on, to recur again during the autumnal movement, in October and the following month. While migrating it is abundant in woods, orchards, and gardens, though on

the whole less numerous than the Golden-crest, with which it freely associates, as it does also with the Chickadees, Nuthatches, Creepers, and various Warblers, in active, restless troops, which roam incessantly through the foliage. The Ruby-crown has been taken so late in the season, in Connecticut, as to render it not improbable that a few individuals may linger in winter in southern New England. The determination of its breeding range is a matter of special interest, which it is hoped may be not much longer delayed. The nest has been found in Colorado, in a spruce, about fifteen feet from the ground; it was a lovely felted mass of hair and feathers, mixed with moss and some short pieces of straw, and was quite large in comparison with its diminutive owner. It contained five young birds and one egg.

"In autumn and winter," says Mr. Minot, "their only note is a feeble lisp. In the spring, besides occasionally uttering an indescribable querulous sound, and a harsh, grating note, which belongs exclusively to that season, the Ruby-crowned Wrens sing extremely well, and louder than such small birds seem capable of singing. Their song commonly begins with a few clear whistles, followed by a short, very sweet, and complicated warble, and ending with notes like the syllables *tu'-we-we*, *tu'-we-we*, *tu'-we-we*. These latter are often repeated separately, as if the birds had no time for the prelude, or are sometimes merely prefaced by a few rather shrill notes with a rising inflection." (B. N. E., 1877, p. 55.)

GOLDEN-CRESTED KINGLET.

REGULUS SATRAPA *Licht.*

Chars. Above, olive-green, brightest on the rump; the wings and tail dusky, edged with yellowish, the former having two whitish bars across the greater and median coverts, and also having the secondaries marked with blackish and whitish. Crown of the head, in the male, with a central bed of flame-color, bordered in front and on the sides with rich yellow, this similarly bordered with black, this again with hoary whitish. Bill black; feet dark. Female and young similar, but lacking the scarlet patch in the yellow. Rather smaller than the Ruby-crown. Length about 4.00; extent, 6.50-7.00; wing, 2.00-2.10; tail, 1.65-1.75; bill, 0.20; tarsus, 0.50.

Like its nearest relative, the Golden-crest is one of the species whose southward range in the breeding season is limited by the Canadian Fauna. It however appears to be of a more hardy nature, enabling it to endure the rigors of a New England winter. Though most abundant and most generally dispersed during the migrations in spring and fall, it may be found at any time from October until the latter part of the following April, when it retires to its breeding grounds, in northern New England and northward. It is therefore a permanent resident of the country, breeding in the Canadian and wintering in the Alleghanian Fauna. Dr. Brewer is certainly mistaken in giving it in his list as only "migratory, in spring and fall," in southern New England. Thus, Mr. Merriam says, for Connecticut: "A winter resident; have seen it at repeated intervals from Oct. 13th till spring (May)." Even in Massachusetts, according to Allen, the bird is "chiefly a winter visitant, occurring in variable abundance in different years, but usually more or less common."

The Golden-crest had long been known as a summer resident in the Canadian Fauna, and had several times been observed under circumstances which left no doubt of its breeding there, before the fact was placed beyond question by the actual discovery of the nest. Such was particularly the case in Maine. Thus Messrs. Maynard and Brewster, writing of obser-

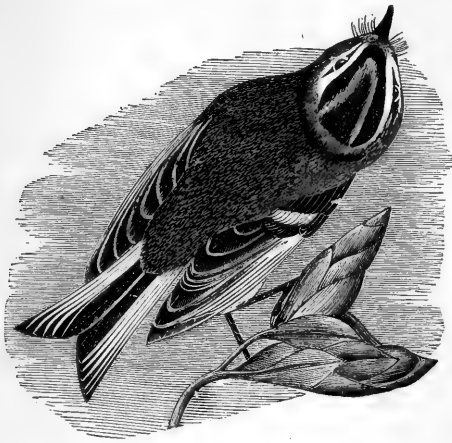


FIG. 15. — GOLDEN-CRESTED KINGLET.

ervations made in 1871, remark as follows: "Quite common at Umbagog in June. It breeds; and judging from the condition of female specimens taken, lays its eggs about June 1st. Although we found several pairs in the thick hemlock woods,

that evidently had nests in the immediate vicinity, yet we were unable to discover them. It probably builds in the long hanging moss which grows so abundant on the trees in these northern forests. Given as perhaps breeding rarely at Norway (S. I. Smith)" (Pr. Bost. Soc., xiv, Oct., 1871, pub. 1872). Mr. Allen's latest list of Massachusetts birds gives the Golden-crest as perhaps breeding in portions of Berkshire County, as it has also been reported by T. M. Trippe (Am. Nat., vi, p. 47) to do in the Catskills (Bull. Essex Inst., x, 1878, p. 611). The credit of actually discovering the

nest in New England belongs to Mr. H. D. Minot, who took one on the 16th of July, 1876, in the White Mountains of New Hampshire, in a forest of evergreens and birches. "Having several times observed the birds there," he writes, "I at last detected them in the act of conveying food to their young, and soon tracked them to their nest. This hung four feet above the ground, from a spreading hemlock-bough, to the twigs of which it was firmly fastened. It was globular, with an entrance at the upper part, and was composed of hanging moss, ornamented with bits of dead leaves, and lined chiefly with feathers. It contained six young birds." (B. N. E., 1877, p. 56.)

[To pursue the interesting subject of the breeding of this bird, all items relating to which are still news to most persons: Mr. Harold Herrick has recently stated, in his list of the birds of Grand Menan, that the species breeds in that locality. Mr. Allen has spoken of finding the young on Mount Monadnock, the third week in August, 1876. Dr. T. M. Brewer has lately published a special paper, entitled, "Nest and Eggs of the Golden-crowned Kinglet (*Regulus satrapa*)," in the Bulletin of the Nuttall Club, iv, No. 2, April, 1879, pp. 96-99. In this article the writer gives the result of his examination of "one of ten eggs from an unknown nest, but which, by the pretty sure rule of exclusion, cannot well belong to any other species." Though the evidence is not conclusive, there is no reasonable doubt that the nest in mention was really that of the Golden-crest. It was found in the neighborhood of Bangor, Maine, where the bird is stated to be a not uncommon summer resident, and was built at an altitude of about six feet from the

ground. The nest "consisted of a large ball of soft moss, the whole forming a mass about $4\frac{1}{2}$ inches in diameter. The opening was at the top, and was about $1\frac{3}{4}$ inches across, and 2 inches deep. The nest was in one of those bunches of thick growth so common on many of our fir-trees, and contained ten eggs, of the following dimensions: $.52 \times .41$; $.50 \times .40$; $.50 \times .41$; $.50 \times .41$; $.47 \times .39$; $.47 \times .39$; $.52 \times .41$; $.51 \times .41$; $.50 \times .41$; $.50 \times .41$. The eggs are of a creamy-white color, and are covered with very obscure spots, so very obscure, in fact, that they merely give a dingy or dirty tint to the egg; and some to whom I have shown them are doubtful if they are spots, but I regard them as extremely obscure and confluent spots, not on, but in, the shell. From the number of the eggs, their extreme smallness, and the situation of the nest, I have been inclined to believe it to be a Kinglet's." This part of Dr. Brewer's article is copied from a letter from Mr. Harry Merrill. The author speaks of the eggs, after examination with a magnifier, as follows: "I find the ground-color to be white with shell-marks of purplish-slate, and a few obscure superficial markings of a deep buff, giving to the ground the effect of cream-color." The resemblance of the egg to that of *R. cristatus* of Europe is stated to be so close that the two are indistinguishable. This is, I think, the second account ever given of the eggs of the Golden-crest, the first having appeared in the Journ. für Ornith. for 1856, p. 23, with a figure (pl. I, No. 8). Mr. Minot's description of the nest was the first to appear. —C.]

BLUE-GRAY GNATCATCHER.

POLIOPTILA CÆRULEA (L.) *Scl.*

Chars. Clear ashy-blue, brightest on crown, hoary on rump; forehead and line over eye black; below, milk-white, slightly shaded on sides; wings blackish, the inner quills edged with hoary; tail black, outer feather mostly or wholly white, next about half white, next tipped with white. Bill and feet black. Female similar, but duller and more grayish-blue, lacking black on head. Length, 4.50-5.00; extent, 6.25-7.00; wing, 2.00-2.25; tail about the same.

A rare visitor to southern New England, in the Carolinian Fauna; of only casual occurrence beyond.



FIG. 16. — BLUE-GRAY GNATCATCHER. (Natural size.)

[I wish to take this species in illustration of some remarks I have to offer concerning the preparation of certain lists of New England birds, — one by myself,

in 1868, and another by the late lamented Dr. T. M. Brewer, in 1875, with its two supplements of 1878 and 1879 respectively. Shortly after my list appeared, Dr. Brewer wrote to me, criticising my performance in general and in particular, both as to my method of compiling a local list, and as to the appearance in the list of various species, to the number of about thirty, which he protested had no proper claim to a place there. I replied, in substance, that I knew what I was about, and that I would suggest to him to make a better list of New England birds, if he thought he could do so. When his list appeared, some years afterward, he expurgated about thirty species, nearly all of them being among those I had included, and nearly all being also species which he was compelled to restore to the list within two years. I submit that the general accuracy and good scientific character of my list have been fully vindicated.

The point at issue appears to be this: Neither author, of course, would include any species, of the occurrence of which in New England he was not fully satisfied. But each had his own way of satisfying himself. If either of us had confined his list to such species as he knew, *of his own personal knowledge*, to occur, neither list would have approached anywhere near completion. I had not myself *seen* in New England one half of the birds in my list; and I doubt that Dr. Brewer's list would have come within a hundred species of completion if he had confined himself to such species as he had actually *seen* in New England. The two lists, therefore, are in every sense *compiled*, each author availing himself of all the information in his possession, whether derived from per-

sonal observation, from the published experiences of others, or elsewhere.

Dr. Brewer's attitude in the case is defined in the following quotation from the preface of his list: "It has been my sole aim to furnish a list that shall be reliable so far as it goes. I may have omitted some that are entitled to a place. Be it so; I had rather omit ten that may be found than retain one that never has been."

My own position, I am glad to say, was different. Like my collaborator in the same field, I aimed to furnish a list that should be reliable; but I also aimed to cover the whole ground, so far as the data at my command enabled me to do so. I therefore *compiled* a list which, my critic is good enough to say, "is remarkable for the laborious research and investigation it displays, and is by far the most complete catalogue we have [1875]." In all doubtful cases I searched the published records with care for evidence; I admitted no species that that testimony did not seem to warrant. As a part of the evidence bearing on such cases, I admitted and made use of our actual knowledge respecting the geographical distribution of species, and the composition of the local Avi-faunæ into which the Eastern Province is divisible — a source of information which my critic ignored entirely, and the significance of which he seems never to have had the wit to grasp. I hold that logical deduction from certain known facts may be a positive and decisive kind of knowledge; and that the mental processes concerned are strictly scientific. However satisfactory to himself Dr. Brewer's modes of thought may have been, my own are worth more to me. I enjoy and make use of other

cognitions than those derived from eyesight or hearsay, and feel little respect for a frame of mind that prefers to take "ten to one" chances of blundering empirically as against logical results of ratiocination.

Polioptila cœrulea inhabits the whole of the Carolinian Fauna in the breeding season, and is apparently restricted to that Fauna in its normal northward extension at that time. The Carolinian Fauna includes a portion of New England.

In 1868 I catalogued the bird as "a rare and perhaps accidental summer visitor" in New England (Proc. Essex Inst., v, p. 268). I quoted the authority of Dr. Brewer, as given by Peabody (p. 297) for its occurrence in Massachusetts, and as far north as Canada, for Dr. Brewer had placed it inferentially in the list of Massachusetts birds in 1836 (Journ. Bost. Soc., i, p. 436). Allen had shortly before accredited it to Connecticut (Pr. Ess. Inst., iv, 1864, p. 83), as Linsley had long previously done (Am. Journ. Sci., xlv, 1843, p. 259). Linsley's record is recognized by Merriam (B. Conn., 1877, p. 144) as probably authentic. In 1875 Brewer expunged the species as being "wholly unknown in any New England State" (Pr. Bost. Soc., xiv, p. 451). In 1878 Mr. H. A. Purdie recorded several instances of the occurrence of the species in Massachusetts and in Rhode Island (Bull. Nuttall Club, ii, Jan., 1877, p. 20). In 1877 Mr. Merriam catalogued the bird as "a rare summer visitant" in Connecticut, with the following remarks: "'Stratford,' Linsley. Two were shot at Wauregan (Windham County), Conn., by Mr. C. M. Carpenter — a male in 1874 and a female in 1876. Three or four were seen by me at Providence, R. I., May 23, 1875" — quoting

Purdie as just cited, but adding that he learned from Mr. Jencks that the Connecticut part of this record was a mistake, all the specimens in mention having been taken in Rhode Island (B. Conn., 1877, pp. 8, 9). In 1878 Mr. R. Deane gave an instance of the capture of a specimen at Chatham, Mass., Nov. 18, 1877 (Bull. Nuttall Club, iii, Jan., 1878, p. 45). This Massachusetts record is quoted by Allen (Bull. Essex Inst., x, 1878, p. 12). In 1878 Dr. Brewer restored the long-waiting bird to the list admitted by him, on the strength of the occurrences reported by Purdie and Deane, as just cited (Pr. Bost. Soc., xix, 1878, p. 301). The same writer was very shortly called upon to again record the bird as one of New England, a specimen having been taken by Mr. F. J. C. Swift in Falmouth, Mass., Dec. 18, 1877 (Bull. Nutt. Club, iii, July, 1878, p. 146, and Pr. Bost. Soc., xx, 1879, p. 264). Just as Dr. Brewer's last-cited paper was going to press, in October, 1879, he was informed of the capture of another specimen by Mr. Arthur P. Chadbourne at Osterville, Cape Cod, Sept. 26, 1879; and this record was indorsed in a foot-note on the same page (p. 264). Finally, another Massachusetts record was made by Mr. R. Deane — that of a young female taken Aug. 27, 1879, at Magnolia (Bull. Nutt. Club, v, Jan., 1880, p. 47): This case warrants the inference that the bird breeds in New England; and I have no doubt that such will prove to be the case. The discovery of the nest is a mere matter of time.

The above includes the entire New England record of the Blue-gray Gnatcatcher, so far as known to me. — C.]

FAMILY PARIDÆ : TITMICE.

TUFTED TITMOUSE.

LOPHOPHANES BICOLOR (*L.*) *Bp.*

Chars. Head crested. Upper parts, including the wings and tail, leaden-gray. Sides of head and entire under parts dull whitish, the sides washed with chestnut; a black frontlet at base of the crest. Bill plumbeous-blackish; feet leaden-blue. The young lack the black frontlet, and may have little of the chestnut wash on the sides. Length, 6.00-6.50; extent, 9.75-10.75; wing, 3.00-3.25; tail about the same; bill, 0.45; tarsus, 0.75.

The case of the Tufted Titmouse in New England is closely coincident with that of the Blue-gray Gnatcatcher. The bird is properly limited in its northward extension by the Carolinian Fauna, and hence occurs only in southern New England, as a rare and perhaps casual summer visitor. It was long ago accredited to New Hampshire by Belknap (*Hist. N. H.*, iii, 1792, p. 173), and Audubon speaks of its occurrence in Nova Scotia (*Orn. Biog.*, v, p. 472). Linsley enumerates it among the birds of Connecticut (*Am. Jour. Sci.*, xlv, 1843, p. 255); on the strength of which, as well as



FIG. 17.—HEAD OF TUFTED TITMOUSE. (Natural size.)

of its known distribution, it occurs in Dr. Coues' List as "rare and perhaps accidental" in New England (Pr. Essex Inst., v, 1868, p. 279). Notwithstanding the evidence, it was expunged by Dr. Brewer, with the remark, "I think this bird has no claim to be included in the Avi-fauna of New England" (Pr. Bost. Soc., xvii, 1875, p. 451). Mr. Merriam's work of 1877 refers to the Linsley and Belknap records, and adds the positive information that a specimen was taken at Lyme, Conn., Feb. 27, 1872, by J. G. Ely; that another was seen by the same in January, 1874; and that a third individual was captured near Hartford, Conn. (Rev. B. Conn., p. 9). Dr. Brewer subsequently restored the species (Pr. Bost. Soc., xix, 1878, p. 302).

There are other instances of the occurrence of the Tufted Titmouse in the Carolinian Fauna close to the New England border; as, near New York (Lawrence, Ann. Lyc. Nat. Hist. N. Y., viii, 1866, p. 283), and at Riverdale, N. Y. (Bicknell, Bull. Nutt. Club, iii, 1878, p. 129).

The breeding of the bird in southern New England is a fact which may be confidently anticipated.

BLACK-CAPPED TITMOUSE; CHICKADEE.

PARUS ATRICAPILLUS L.

Chars. Not crested. Above, ashy-gray; below, whitish; wings and tail like the upper parts, but more or less edged with hoary; crown and throat black; sides of head more purely white than the under parts; bill and feet plumbeous-black. Sexes alike; young little different. Length, 5.00-5.25; extent, 7.75-8.25; wing, 2.40-2.60; tail, 2.35-2.65; bill, 0.30; tarsus, 0.70.

A common resident bird of New England, breeding throughout the country, but in Massachusetts, Connecticut, and Rhode Island less abundant in summer than in winter. It appears to be practically limited in northward extension by the Canadian Fauna, being replaced beyond by the Hudsonian Chickadee. The general traits and habits of these very familiar birds are too well known to require notice here. They breed in



FIG. 18. — BLACK-CAPPED CHICKADEE.

holes in trees, stumps, or posts, often taking possession of a deserted woodpecker's home, or excavating one for themselves with great pains and diligence. The nest is constructed of various soft vegetable and animal substances, as grasses, moss, hair, wool, and feathers. Eggs are laid to the number of 6 or 8, or even 10, usually the middle or latter part of May, and sometimes again the last of June or early in July. These are white, finely speckled, especially about the larger end, with

small pale reddish points and dots; they measure from 0.60 to 0.68 in length by 0.49 to 0.54 in breadth. The usual breeding resorts are thick woods, where the little creatures are to some extent screened from casual observation, though they appear at all times to be very confiding and unsuspecting, heedless of the near approach of man.

One of our best pictures of the life of the Chickadee is given by Mr. H. D. Minot (Birds of New England, 1877, pp. 59-63). Among other agreeable and interesting facts, the writer instances the manner in which the little Titmouse sleeps. One which had taken possession of a Pewee's nest, which was fastened to the corner pillar of a piazza, "having stared at me for a moment, tucked his head under his wing and apparently leaned against the wall. I think that he went to sleep almost immediately, for, on my stepping from the piazza, he started (as if from sleep) and turned to look at me; but he soon composed himself once more to his slumbers." Mr. Minot relates the anecdote to controvert an assertion he had met with, to the effect that it was ridiculous to suppose that wild birds ever put their bills under their wings when sleeping.

HUDSONIAN TITMOUSE.

PARUS HUDSONICUS *Forst.*

Chars. Not crested. Above, pale olive-brown; below, whitish, shading into light chestnut-brown on the sides and behind; crown browner than back; throat blackish-brown; no hoary edgings of wings and tail. Length about 5.00; wing, 2.40; tail, 2.70; bill, 0.30; tarsus, 0.62.

As implied in the name, the Hudsonian Chickadee is a northerly species; it is resident in northern New England, but of rare or casual occurrence south of the Canadian Fauna, which limits its southward extension in the breeding season. In fact, it seems to be nowhere in New England a very abundant bird, its true home being Canada, Labrador, and the Hudson's Bay region

at large; and it has seldom been known to occur at any season south of the Canadian Fauna.

Probably the earliest Massachusetts record is that given by Peabody, who states that it was found near Brookline, by S. E. Green (Rep. Orn. Mass., 1839, p. 402). A late Massachusetts instance has been furnished by Mr. Brewster, who took a specimen at Concord, October 30, 1870 (Am. Nat., vi, 1872, p. 306). Mr. Merriam records the bird as accidental in Connecticut, with the information that Mr. Robert Morris took a specimen near New Haven, November 13, 1875 (Bull. Natt. Club, i, No. 2, July, 1876, p. 52, and B. Conn., 1877, p. 10). In New Hampshire, according to Mr. Maynard (Pr. Bost. Soc., xiv, 1871, pub. 1872, p. 359), it was found to be quite common in the heavily wooded mountain valleys of Errol, where it associated in flocks with the Black-capped Chickadees during the latter part of October. Mr. Maynard also observed it at Albany, Me., Oct. 22, 1869.

In Maine, as doubtless also in northern Vermont and New Hampshire, the Hudsonian Chickadee is resident, and breeds. It is so given by Boardman at Calais (Pr. Bost. Soc., ix, 1862, p. 126); and Dr. Brewer remarks that he found it "abundant" at Mount Desert during July and August (Pr. Bost. Soc., xix, 1878, p. 302). I am under the impression, however, that the nest and eggs have yet to be discovered in New England.

FAMILY SITTIDÆ : NUTHATCHES.

WHITE-BELLIED NUTHATCH.

SITTA CAROLINENSIS *Gm.*

Chars. Upper parts, including central tail-feathers and much edging of the wings, clear ashy-blue; crown and nape glossy black; under parts, including sides of head and neck, white, variegated on the flanks and under tail-coverts with rusty brown. Wings and their coverts blackish, with the pale edgings already mentioned, the concealed bases of the primaries, and a bar on their outer webs near the end, white; inner secondaries variegated with black and bluish. Tail, excepting central feathers, black, each feather marked with white in increasing amount. Female and young similar, but the coloration less pronounced, the black of the head, in particular, being impure, defective, or entirely wanting. Length, 5.50-6.00; extent, 10.50-11.00; wing, 3.50-3.75; tail, 2.00; bill, 0.60; tarsus, 0.60.

The geographical distribution of this species does not appear to have been thoroughly worked out, at least so far as its northern limit of dispersion is concerned. The name does not occur in any of the lists which Allen gives of the birds characterizing the several Faunæ of eastern North America.

In New England the White-bellied Nuthatch is a common species of general distribution, probably residing all the year



FIG. 19. — WHITE-BELLIED NUTHATCH.
(Natural size.)

round, and breeding indifferently in any suitable localities. Numerous local lists which I have examined give the bird as "resident," Dr. Brewer alone remarking, not too intelligibly, that it is in New England a "summer resident, partially resident." It is certainly, however, found in winter, and in some places appears to be more abundant at that season than in summer.

The nidification is essentially similar to that of the Titmice (*Paridæ*), the nest being placed in excavations in trees. The eggs are also similar, being white, more or less thickly and uniformly spotted with reddish-brown, but they are larger than those of the Chickadee, measuring from 0.75 to 0.82 in length, by 0.56 to 0.63 in breadth. They are laid late in May or early in June. The food consists chiefly of various insects and their larvæ, which are procured by means not unlike that employed by Woodpeckers. The note is very peculiar; it may be likened to the quick pronunciation of the syllables *ick, ick, ick*, in a hollow, guttural tone.

RED-BELLIED NUTHATCH.

SITTA CANADENSIS L.

Chars. Above, clear ashy-blue, brighter than in *S. carolinensis*; central tail-feathers the same. Under parts reddish-brown (very variable in purity and intensity). Crown glossy black, separated by a white supraciliary line from a broad bar of black through the eye from the bill to the nape. Tail, excepting the middle feathers, black, the lateral feathers marked with white. Wings dusky, with slight ashy edgings and concealed white bases of the primaries. Female and young with the black on the head defective or wanting. Length, 4.50-4.75; extent, 8.00-8.50; wing, 2.60-2.70; tail, 1.50; bill, 0.50; tarsus, 0.60.

Dr. T. M. Brewer has very erroneously indicated the manner and character of the presence of this bird in New England, in stating that it is migratory in southern, and a summer resident in northern, portions. The bird is a resident throughout the year in the Canadian Fauna, where it breeds; it is a migrant, and also a winter resident, in the Alleghanian and Carolinian. On the whole, it is rather a more northerly species than the White-bellied, the alleged instance of its breeding in Massachusetts having proved to be erroneous (*Am. Nat.*, xi, 1877, p. 565; see xii, 1878, p. 397). From its breeding grounds in Maine, New Hampshire, Vermont, and still farther north, it enters the nether New England States early in October; many pass southward, but numbers remain until the latter part of the following April. It is a rather common, at least not a rare bird, both in its summer and winter resorts; and is still more numerous during the migrations. Such appears to be the usual distribution of the species in New England. I have no doubt, however, that the bird actually breeds at times in Massachusetts. About the middle of August, 1874, I found young birds on Cutty Hunk Island, in Buzzard's Bay, near New Bedford; and Mr. Hitchcock, of Ware, Mass., records it as breeding at that place. A good account of its nidification in Maine has been given by Mr. Hardy (*Bull. Nutt. Club*, iii, 1878, p. 196). The nest, eggs, and breeding habits are very similar to those of the White-bellied Nuthatch.

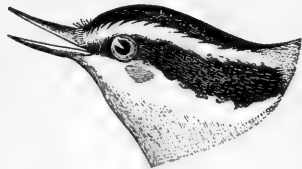


FIG. 20. — HEAD OF RED-BELLIED NUTHATCH. (Nat. size.)

FAMILY CERTHIIDÆ : CREEPERS.

BROWN CREEPER.

CERTHIA FAMILIARIS L.

Chars. Upper parts, including sides of head and neck, dark brown, changing to rich rusty brown on the rump, everywhere streaked with whitish; an obscure supraciliary line of the same. Under parts dull white, sometimes tinged with rusty on the flanks and crissum. Wing-coverts and the larger feathers tipped with white, and the inner secondaries with white shaft-lines, these light markings contrasting with the blackish of the outer webs; wings also crossed with two white or tawny-white bars, the broad anterior one of which occupies both webs of the feathers, the other being restricted to the outer webs near their ends. Tail grayish-brown, more or less variegated with darker. Bill blackish above, mostly flesh-colored below; feet brown. Sexes alike. Length, 5.25-5.75; extent, 7.50-8.00; wing about 2.50; tail very variable, ranging from 2.50 to 2.90, usually about as long as the wing.

The Brown Creeper is resident throughout New

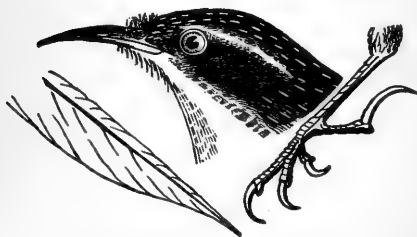


FIG. 21.—HEAD, FOOT, AND TAIL-FEATHER OF BROWN CREEPER. (Natural size.)

England, and a common bird in all suitable localities. Its breeding range has been supposed to be restricted by Massachusetts in its southward extension, but such is not the case.

There is, however, a certain migratory movement, which causes the bird to be more abundant in north-

ern New England in summer, and to breed *chiefly* in the Canadian Fauna, while it is oftenest observed in southern New England in winter, spring, and fall, being especially numerous there during the migrations. Its true home is the woods; but the sly little bird is often observed in our orchards, parks, and even streets, winding its spiral way up the trunks of large shade and fruit trees. Not possessing in its delicate bill an instrument powerful enough to bore wood, it is nevertheless an indefatigable hunter and destroyer of the many minute insects which lurk in the cracks of bark, and is thus of great service to man.

The Creeper was formerly supposed to breed in holes, like the Nuthatch and Chickadee; but recent observations, particularly those of Mr. Wm. Brewster, show that the nest is usually placed in a rift or crevice between the bark of a tree and the main wood. Mr. Minot describes a nest that was built in the cavity of a tree riven by lightning, a few feet from the ground, in the vicinity of Boston; and another, found in an elm in Springfield, about ten feet from the ground, behind a strip of projecting bark — the usual style, as just intimated. A nest noticed by Dr. Brewer, found in Taunton May 27, 1878, was likewise built between the bark and the wood of a large pitch-pine (Bull. Nuttall Club, iv, 1879, p. 87). Mr. Brewster, who closely studied the nidification and other breeding habits of the Creeper in the pine woods of Maine, has given us the best paper by far we possess upon this subject (Bull. Nuttall Club, iv, 1879, pp. 199-209), fully describing the curious position of the nest, and giving other particulars of interest. He found fresh

eggs so late as the 23d of June. The eggs are from 5 to 8 in number, measuring 0.55 to 0.60 in length by 0.45 to 0.50 in breadth; they are dull white, finely dotted with reddish-brown, with or without a few larger and paler spots, especially about the greater end. The difference in the times when fresh eggs have been found leads to the inference that two broods may be reared annually.

As Mr. Brewster says (*l. c.*), "the following concise record of all the nests taken during the season of 1879 will illustrate the somewhat variable times at which the different sets of eggs were deposited: May 31, nest with set of six eggs, incubation about five days: June 5, nest with six eggs, incubation about six days; June 14, nest with five young, which were perhaps a week old; June 19, nest with four fresh eggs, — a complete set, as the bird laid no additional ones, though left unmolested for two days longer. This clutch may possibly have been a second laying by the pair robbed on May 31, as the site was only a few hundred yards distant. June 23, nest with four fresh eggs, locality several miles away from that of any of the preceding."

FAMILY TROGLODYTIDÆ : WRENS.



GREAT CAROLINA WREN.

THRYOTHORUS LUDOVICIANUS (*Lath.*) *Bp.*

Chars. Tail not longer than wings, all its feathers reddish-brown with numerous fine black bars. Above, clear reddish-brown, slightly grayer on head, brightest on rump; below, tawny of varying shade; a long, conspicuous white or tawny supraciliary line; wings edged with the color of the back, and dusky-waved; wing-coverts usually whitish-spotted; under tail-coverts usually blackish-barred; sides of body unmarked. Length 5.50 to nearly 6.00; wing, 2.33; tail rather less.

[An inhabitant of all the Carolinian Fauna, and therefore necessarily a summer visitor in New England, where it occurs but rarely, and only as far north as Massachusetts. In 1868 I spoke of this bird as one which might occur in southern New England, basing this inference upon the known fact of its presence near New York city, as attested by Mr. G. N. Lawrence. Mr. H. D. Minot lately said that two individuals were apparently passing the summer in a small wooded swamp near Boston (Bull. Nutt. Club, i, 1876, p. 76). Dr. Brewer shortly afterward recorded the capture of a specimen by Mr. G. O. Welch at Lynn, Mass., July 6, 1878 (Bull. Nuttall Club, iii, 1878, p. 193; Proc. Bost. Soc., xx, 1880, p. 265); giving us not only the first instance of the actual taking of a New England example, but also a sneer at Mr. Minot and myself. Mr. H. A. Purdie subsequently mentioned the capture of another at Saybrook, Conn., by Mr. J.

H. Clarke, Nov. 15, 1878. There are also several records of the presence of the species close by the New England border: as Mr. Lawrence's, already



FIG. 22.—GREAT CAROLINA WREN. (Nearly natural size.)

alluded to (Am. Lyc. N. Y., viii, 1866, p. 293); Mr. E. P. Bicknell's (at Riverdale, N. Y., Bull. Nuttall Club, iii, 1878, p. 128); and especially Mr. R. Deane's (Bull. Nuttall Club, iv, 1879, p. 184). The latter instance, given on the authority of Mr. Robert Lawrence, attests the breeding of the

bird at Flushing, Long Island, where a female was taken on the 8th of May, 1879, and a male, with a brood of four young ones just able to fly, were observed next day. It would thus appear to be placed beyond reasonable question, that the Great Carolina Wren's breeding range reaches along the Atlantic coast to the full extent of the Carolinian Fauna. I cannot deny that satisfaction comes from thus successively laying the ghosts of the thirty exceptions taken by Dr. Brewer to the manner and character of my list of 1868. — C.]

HOUSE WREN.

TROGLODYTES DOMESTICUS (*Bartr.*) *Coues.*

Chars. Above, brown, darker or grayer on the head, brighter on the rump and upper tail-coverts. Below, dull whitish, clearest on the abdomen, obscurely variegated with irregular dark markings which become bars on the flanks and crissum. Wings, tail, rump, and often the back, closely waved with dusky lines. An obscure whitish supraciliary line and edge of eyelids. Bill blackish above, pale below; feet brownish. Length, 4.75-5.25; extent, 6.75; wing, 2.00-2.10; tail, 1.90; bill, 0.50; tarsus, 0.60.

Note. The Wood Wren (*T. americanus* Aud.) is not specifically distinct from the House Wren.

This sprightly and vivacious tenant of the shrubbery about the homestead, whose richly-trilled song is familiar to every ear, is in New England a summer-resident, arriving from the south about the end of April, and remaining through October. It becomes generally distributed in two or three weeks after its first appearance in the Carolinian Fauna, and begins to withdraw from its more northerly breeding grounds late in September, though its final retreat from our borders is only accomplished in the course of the following month. The House Wren is practically, or chiefly, restricted in its northward dispersion by the Alleghanian Fauna, and is hence rarely if ever found in northern New England. Apart from its general geographical distribution, it affects particular localities, where it may be very abundant, without obvious reason, while it is no less unaccountably rare in other places apparently as eligible; the local distribution is thus fortuitous, and may moreover differ with successive years.

Like others of its family, the House Wren is a hole-breeder; its nidification is very various, dependent upon its *entourage*; but in cultivated and well-populated regions the pert and fearless little creature usually nests near man's dwelling, almost any odd nook about a building seeming to answer its purpose perfectly well. There is no established "order of architecture" in this case, and an enormous quantity of trash is often laboriously lugged into the chosen recess by the indefatigable birds. The eggs, of which there may be more than one set in a season, are from 6 to 9 in number, measuring from 0.58 to 0.64 in length by 0.48 to 0.52 in breadth; they are pinkish-white, very closely dotted all over with reddish brown; the markings, however, varying so much as to give different sets a very different general cast of color. The first set is laid late in May, and another may be produced in five or six weeks; for it does not take long for these smart little birds to demonstrate their ability to start a family and keep it up. The food of the House Wren consists almost entirely of small insects and their larvæ, such as lurk about out-houses and in shrubbery. Aside from its nuptial song, so melodiously and heartily trilled, the bird shares with other Wrens the harsh chattering notes characteristic of this family, and invariably uttered when the cat or any other enemy threatens the peace of the community. So successful is the little creature in defending its home, that puss not seldom saves her credit by giving up her evil designs; when victory, in the shape of a tiny brown bird, perches on the nearest spray, and rings out the result with renewed enthusiasm.

WINTER WREN.

ANORTHURA TROGLODYTES HIEMALIS (*V.*) *Coues.*

Chars. Deep brown, darkest on head, brightest on rump and tail, obscurely waved with dusky, and sometimes with whitish also; tail like rump; wings dusky, edged with color of back, and dark-barred; several of the outer primaries also whitish-barred; a supraciliary line, and obscure streaks on sides of head and neck, whitish. Below, pale brown; belly, flanks, and under tail-coverts, strongly barred with dusky and whitish. Length, 4.00-4.15; extent, 6.00-6.50; wing, 1.65-1.75; tail, 1.25; bill, 0.40-0.50; tarsus, 0.72.

A species characteristic of the Canadian Fauna, which limits its normal southward distribution in the breeding season; it is hence a summer resident in northern New England. Massachusetts is apparently an intermediate tract through which it mi-



FIG. 23. — WINTER WREN. (Nearly natural size.)

grates in spring and fall; and where, so far as I know, it does not summer, and but rarely winters. In Connecticut, however, it is a rather common winter resident. While the general habits of the bird are much like those of the House Wren, the pleasing song it utters during the breeding season is entirely different, and the nidification is not the same. The Winter Wren is a shy and more retiring bird, and compara-

tively few of its nests have come to the notice of naturalists. "Five eggs, not quite fresh, which I took from a nest on the White Mountains on the 23d of July (probably those of a second set), were pure crystal-white, thinly and minutely speckled with bright reddish-brown, and averaging about $.70 \times .55$ of an inch. The nest, thickly lined with feathers of the Ruffed Grouse, was in a low moss-covered stump, about a foot high, in a dark swampy forest, filled with tangled piles of fallen trees and branches. The entrance to the nest, on one side, was very narrow, its diameter being less than an inch, and was covered with an overhanging bit of moss, which the bird was obliged to push up on going in" (*Minot*, B. N. E., 1877, p. 72). A nest described by Dr. Brewer was built in a crevice of an occupied log-hut, among fir-leaves and mosses; it contained six eggs, measuring 0.65 by 0.48, spotted with bright reddish-brown and a few pale purplish markings, on a pure white ground. Mr. Ruthven Deane describes three nests from Houlton, Maine, in one of which there were six young early in June, and in another four eggs on August 8th (*Bull. Nuttall Club*, iv, 1879, p. 37). The last was a beautiful piece of bird-architecture, composed mainly of compact green moss, with which a few hemlock twigs were interwoven, and lined thickly with feathers of the Canada Grouse, Blue Jay, and other birds. All three were found in similar situations, in the *débris* about fallen trees. The Winter Wren appears to be more abundant on its breeding grounds in Maine and New Hampshire than elsewhere in New England at any other season: see, for example, Mr. Maynard's notice in *Pr. Bost. Soc.*, xiv, for October, 1871, p. 360.

LONG-BILLED MARSH WREN.

TELMATODYTES PALUSTRIS (*Bartr.*) *Bd.*

Chars. Above, clear brown, unbarred, the middle of the back blackish, streaked sharply with white; crown of head usually dark, often quite blackish, with a dull whitish supraciliary line. Below, white or whitish, especially on central parts, but shaded with brown on the sides, flanks, and crissum. Tail like the back, evenly barred with dusky; wings dusky, the inner secondaries often barred or scolloped with pale brown. Bill blackish above, pale below; feet brown. Length, about 5.00; extent, 6.50; wing, 1.75-2.00; tail about the same; bill, 0.50, or rather more; tarsus, 0.65-0.75. There is much difference in coloration, independently of age or sex.

Though this Wren is of very general distribution in North America, sometimes proceeding even so far north as Greenland, it appears to be unknown in northern New England, not being given in any of the Maine and New Hampshire lists which I have consulted. In Massachusetts and southward it is a common summer resi-



FIG. 24.—LONG-BILLED MARSH WREN.
(Natural size.)

dent, but in the nature of the case is very locally distributed, being confined to swampy tracts in the interior, and to the brackish or salt marshes along the coast-line. In such places, which alone seem to answer the requirements of its nature, this Wren is found nesting in colonies of greater or less extent, fastening a large globular nest to the swaying reeds. This structure, very conspic-

uous by its bulk and its exposed position, is built of coarse grasses and reed-tops loosely intertwined, sometimes plastered with mud, and securely attached to its upright swaying supports, some of which pass through its substance; is lined with fine soft grasses, and has a hole on one side, sometimes nearer the bottom than the top. The eggs, to the number of 6 to 10, are remarkably dark-colored, being usually so thickly dotted with chocolate-brown as to appear almost uniformly of this color; but there is great variation in this respect; they average about 0.58 by 0.45 of an inch in size. The Marsh Wrens reach New England in May, and leave in September; but their movements are so secret that precise dates of arrival and departure are not easily determined. In fact, the birds are not often noticed excepting when they are colonized for the summer in their favorite marshes, when their curious posturing, brusque deportment, and gay rollicking song, attract the attention of the most casual observer who may chance to penetrate their reedy demesne.

SHORT-BILLED MARSH WREN.

CISTOTHORUS STELLARIS (Licht.) Cab.

Chars. Above, brown, the crown and most of the back blackish, sharply and conspicuously streaked with white throughout. Below, whitish, shaded with clear brown across the breast and along the sides, and especially on the flanks and crissum, which are often also obsoletely barred with dusky. A whitish supraciliary line. Wings and tail as in the last species. Bill blackish above, pale below, extremely small and short, being scarcely half as long as the head. Length, 4.50; extent, 6.00; wing and tail, each, about 1.75; tarsus, 0.70; bill from 0.35 to 0.40.

So far as New England is concerned, the geographical distribution of the Short-billed Marsh Wren is substantially the same as that of the foregoing species, its near relative. It was described as *Troglodytes brevirostris* by Nuttall in 1831, upon specimens taken in Massachusetts, which appears to be its normal northern limit, as it is not recorded in New Hampshire and Maine catalogues. Though less abundant than the Long-billed is in its favorite resorts, it is at the same time rather more evenly distributed; being not strictly confined to reedy spots, it may be seen in low moist meadows; the bird is, nevertheless, one of somewhat irregular local distribution. Its movements



FIG. 25. — SHORT-BILLED MARSH WREN. (Natural size.)

appear to correspond in time closely to those of the Long-billed, and the nidification of the two is essentially similar; but no mud is used in the construction of the nest, and this may be placed low down in a tussock of grass instead of hanging to swaying rushes. The eggs are entirely different, being pure white, unmarked. They number 6 to 8, measuring about 0.54 in length by 0.44 in breadth, and are laid early in June. It is singular that there should be such a difference in the eggs of the two species of Marsh Wrens, the birds themselves being so closely related. The case is one of the few in which oölogical considerations are of consequence in helping to establish generic and even specific characters.

FAMILY ALAUDIDÆ: LARKS.

SHORE LARK; HORNED LARK.

EREMOPHILA ALPESTRIS (*L.*) *Boie.*

Chars. Adult male or female, in breeding dress: Above, brown, tinged with pinkish, this peculiar tint brightest on the nape, lesser wing-coverts, and tail-coverts, the rest of the upper parts more grayish, variegated with dusky centres of the feathers. Below, white, shaded on the sides with the color of the back, and anteriorly more or less tinged with sulphur-yellow. A large black area on the breast. Sides of head and whole throat white or sulphury-yellow, with a crescentic mark of black below each eye, and a black bar across the forehead and thence along the side of the crown, prolonged into a tuft or "horn." Middle tail-feathers like the back; the rest black, the outer web of the outer pair whitish. Bill blackish, livid blue at base below; feet black; iris brown. *In winter*, as commonly observed in the Eastern States, there is less of the pinkish tinge, though the sulphury-yellow may be very conspicuous; the black markings about the head and on the breast are obscure or wanting, the whole coloration being thus much simpler. Length of male, 7.00-7.50; extent, 13.00-14.00; wing, 4.25-4.50; tail, 2.75-3.00; bill, 0.40-0.50; tarsus, 0.75-0.90; female commonly smaller.

Though the Shore Lark has been seen in New England in summer, there is no satisfactory evidence as yet that it breeds within our limits. It occurs irregularly during the migrations and in winter, from October to April, nearly always in flocks of greater or less extent, and is especially numerous coastwise. While with us, it only frequents open waste places, and is therefore restricted in its local distribution. It is a

common bird during the part of the year above mentioned, and sometimes very abundant, but its appearance cannot be relied upon. Occasionally it gathers in flocks of great extent in the fields of winter-rye along the sea-shore, where its wild, wayward flight, and the quick alarum of its shrill voice, bring it prominently to notice.

[The Shore Lark is essentially a terrestrial bird of plain and prairie, seldom alighting anywhere except upon the ground, where

it runs with the greatest ease, and where its nest is placed. In most of the United States, east of the Mississippi, it is only a winter visitant, as in New England. It breeds, however, in the northern tier of States as far east as New York,



FIG. 26. — SHORE LARK. (Natural size.)

and very abundantly in Labrador and Newfoundland; being therefore likely to be taken in the same act along the northern border of Maine. The nest will be found on the ground, in a slight depression, lined with a few grasses; the eggs, four or five in number, measuring about 0.90×0.65 , grayish-white in ground-color, very variously but always thoroughly marked with brownish and purplish spots. The bird is an early breeder, laying the first set of eggs in April, sometimes before the snow is gone, and raising usually more than one brood; for I have found eggs in July, when plenty of young birds had long been on the wing. — C.]

FAMILY MOTACILLIDÆ : WAGTAILS.

AMERICAN PIPIT, OR TITLARK.

ANTHUS LUDOVICIANUS *Licht.*

Chars. Above, olive-brown, most of the feathers with dusky centres. Wings blackish-brown, the quills and coverts edged with pale brown. Tail blackish, the middle feathers like the back, the two or three outer ones largely or partly white. Line over and ring around eye, and whole under parts brownish-white, or buffy-brown, very variable in shade, the breast and sides of the body and the sides of the throat spotted with the color of the back. Bill blackish, pale at base below; feet brown. Length, 6.25-7.00; extent, 10.25-11.00; wing, 3.25-3.50; tail, 2.75-3.00; bill about 0.50; tarsus, 0 90.

The manner of the Titlark's presence in New England is similar to that of the Shore Lark, though these two birds are not very closely related. It has never been known to breed in New England, and has very seldom been seen there in summer. An instance of its occurrence at that season, however, has been given by Dr. Brewer, who states that Mr. W. A. Jeffries found it on the 8th of June on an island off Swampscott, Mass., and also adds that it was suspected to be about to breed there. [*] The species is one whose

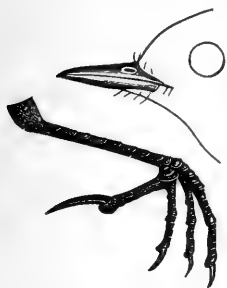


FIG. 27. — HEAD AND FOOT OF PIPIT. (Nat. size.)

[* See Bull. Nutt. Club, iv, 1876, p. 194. — There is no doubt in my own mind that the Titlark, like the *Eremophila*, will yet be ascertained to breed occasionally along the coast of Maine. — C.]

southward range in the breeding season is given by Allen as limited by the Hudsonian Fauna. It is a rather abundant bird in New England during the migrations in spring and fall, especially along the coast, which seems to be its principal course; but it also winters at least as far north as Massachusetts. At that season it is found in loose, straggling flocks, sometimes numbering hundreds of individuals, roaming irregularly over open parts of the country, particularly in maritime localities. Its habits under such circumstances are much like those of the Shore Lark, though its voice, flight, and general appearance are entirely different. It has a weak, piping note, according with the vacillating disposition which its tremulous and devious flight seems to indicate; and has the characteristic habit which has given to the whole family the names "Wag-tail" or "*Motacilla*."

The bird breeds abundantly along the coast of Labrador, and in other parts of the Hudsonian Fauna. The nest and eggs, found in that country by Dr. Coues, are described by him in the following terms: "It was placed on the side of a steep, precipitous chasm in a cavity of the earth of about the size of a child's head, in which a little dry moss had been previously introduced to keep the nest from the damp earth. It was composed entirely of rather coarse dry grasses, very loosely put together, with no lining of any sort. The external diameter was about 6 inches; the internal 3, the depth 2. The eggs were in one instance 5, in another 4; their average length, for they varied somewhat, was 13-16 of an inch by $9\frac{1}{2}$ -16 in greatest diameter; of a dark chocolate color, indistinctly marked with numerous small lines and streaks of black."

FAMILY SYLVICOLIDÆ : AMERICAN
WARBLERS.

BLACK-AND-WHITE CREEPING WARBLER.

MNIOTILTA VARIA (L.) V.

Chars. Entirely black and white ; above black, streaked throughout with white ; below white, the breast and sides streaked with black. Crown and sides of head black, with median and two lateral white stripes. Wings and tail black ; the former with two white cross-bars, and much edging of the feathers, the latter having several outer feathers marked with white. In the female, the black streaks of the under parts are obsolete. Bill mostly black ; feet black. Length, 5.30 ; extent, 8.00 ; wing, 2.80 ; tail, 2.20 ; bill, 0.45 ; tarsus, 0.60.

This interesting bird is a summer visitor to New England, of common occurrence in wooded regions, and especially abundant during the migrations. It is



FIG. 28. — BLACK-AND-WHITE
CREEPING WARBLER. (Natural size.)

rather more numerous in southern than in northern New England, as it stays to breed anywhere in suitable localities on its way north, and only a certain proportion of the total number of individuals reach the extreme limit of the distribution of the species. The bird enters New England late in April ; becomes numerous in May ; breeds, as just intimated, and departs usually by the middle of September, though

it has been found in Connecticut in early October. It is oftenest seen in May and September, when the migration is in full action. The nest is usually placed on the ground, built of leaves, grasses and moss, lined with fine, soft vegetable substances, such as fern-down, and sometimes hair. The eggs are laid the last week in May or early in June, and a second set may be found sometimes in July. They are 4 to 6 in number, measuring 0.65 by 0.54, of a creamy-white ground-color, more or less evenly sprinkled with reddish-brown dots, among which are some larger markings of darker brown color, chiefly about the greater end. Like all the family, this Warbler is insectivorous, subsisting upon a variety of small insects gleaned from the bark and foliage of trees, somewhat in the manner of the Creeper (*Certhia*). The habit of scrambling actively about the trunks and larger branches of forest trees is more conspicuous in this than in other species of *Sylvicolidae*, causing the bird to have been formerly classed as a *Certhia* — an error perpetuated in the vernacular name of Black-and-white "Creeper" long after naturalists had ascertained that the species belonged to the Warbler group. It is a typical representative of the family of American Warblers, or *Sylvicolidae*, upon the consideration of which we have now entered; one comprising a large number of the most elegant and agreeable birds of this country, whose featherings, songs, and manners, almost endlessly varied, render them never-failing objects of interest to every one who, with a heart for "the life of the woods," seeks to interpret the mysterious meaning there is in the lives of these winged messengers.

BLUE YELLOW-BACKED WARBLER.

PARULA AMERICANA (L.) Bp.

Chars. Adult male: Above, ashy-blue, back with a golden-brown patch; throat and breast yellow, with a rich brown or blackish patch; belly, eyelids, two broad bars across the wing, and several spots on the tail, white; lores dusky; bill black above, yellow or flesh-colored below; feet pale brown. The coloration is very variable, according to degree of perfection attained, but the general appearance is so striking that the bird is not likely to be mistaken. The female is similar to the male, but the blue is not so bright, and the peculiar patch on the back and breast is not so well defined. In young birds the blue is glossed all over with greenish, the patches are obscure or entirely wanting, the yellow is paler, and the other markings are not well pronounced. Very small: length, 4.50-4.75; extent, 7.50; wing, 2.30; tail, 1.75; bill, 0.40; tarsus, 0.65. The condition of albinism has been observed in this delicate and daintily-colored bird.

A common summer resident in New England, breeding abundantly, and one of the most numerous of all the Warblers during the migrations, in high, open woods, parks, orchards, and gardens, where it is oftenest seen skipping and fluttering about the blossoms and terminal foliage in search of the minute insects upon which it preys, constantly uttering its faint chirping notes. It arrives from the south early in May, becomes generally distributed during that month, and withdraws during September, though a few individuals may linger a week or two longer in favored localities. It is particularly numerous during the autumnal movement. We have advices of its nesting throughout New England, and it is therefore not strictly limited in its southward distribution in the breeding season by the Alleghanian Fauna, though so catalogued by Mr.

Allen; still, greater numbers breed in northern than in southern New England. Mr. Merriam speaks of a number of beautiful hanging nests found at Portland, Conn., built entirely of *Usnea*. According to Mr. Minot, "the nest is globular, with an entrance on the side, and is composed principally of hanging mosses. It is usually placed in the woods, twenty or more feet from the ground, at the end of a bough of some hard-wood tree or evergreen. It usually contains four or five freshly laid eggs early in June, which average about .62 by .48 of an inch, and are white (or cream-tinted) with spots and confluent blotches of brown and lilac, chiefly about the crown." "Their nests are beautiful objects," the same writer continues, "and very admirable architectural works, which distinguish their builders from all the other members, at least the American members, of their large family, the Warblers; for though nearly all of them build neat and pretty nests, none ever construct nests so striking in appearance as these, which are globular, with an entrance on one side." So it seems that these little exquisites show as good taste in their household arrangements as in their dress.

PROTHONOTARY WARBLER.

PROTONOTARIA CITREA (*Bodd.*) *Bd.*

Chars. Golden-yellow, fading on the belly, shading to yellowish-olive on the back, thence changing to ashy-blue on the rump, wings, and tail; most of the tail-feathers with large white spots; bill black and very large. Length, 5.50; extent, 8.50; wing, 2.75-3.00; tail, 2.25; bill, at least 0.50; tarsus, 0.75.

The Prothonotary Warbler is a rare straggler to New England from the Southern States. One instance of such occurrence is recorded by Prof. Verrill (Pr. Bost. Soc., ix, 1863, p. 234). This stray was found at Calais, Maine, by Mr. George H. Boardman, October 30, 1862, after there had been several snow-falls, and the ground frozen — its happening there under such circumstances being of course entirely accidental.

WORM-EATING WARBLER.

HELMINTHERUS VERMIVORUS (*Gm.*) *Bp.*

Chars. Olivaceous, the head and under parts buffy, paler or whitish on the belly, the head with four sharp black stripes — one on each side of crown, another through each eye; wings and tail like back, without any markings. Bill and feet pale cinnamon. Bill stout, acute, unnotched, unbristled, at least 0.50 long. Length, 5.50; extent, 8.50; wing, 2.75; tail, 2.00; tarsus, 0.70.

A rare summer resident in southernmost New England only, where it has chiefly been observed in Connecticut.

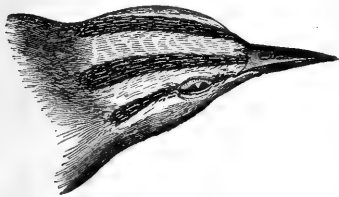


FIG. 29. — WORM-EATING WARBLER.
(Natural size.)

It is normally limited in northward dispersion by the Carolinian Fauna. It was ascribed to Connecticut by Linsley, in 1843, a specimen having been taken at New Haven by Dr. J. D. Whelpley.

Mr. H. A. Purdie records its capture in the nesting season at Saybrook, by Mr. J. N. Clark (Am. Nat., vii, Nov., 1873, p. 692), and the same writer also mentions a male shot by Mr. Shores at Suffield, Aug. 22,

1874 (Bull. Nuttall Club, ii, Jan., 1877, p. 21). In his Review of Connecticut Birds (1877, p. 13), Mr. Merriam observes: "Mr. Clark tells me he has seen as many as five individuals in a single day. Mr. Thomas Osborne, of New Haven, has a mounted specimen in his cabinet, procured May 17, 1875. Two or three other specimens were shot near here in May, 1875, and Mr. George Bird Grinnell tells me that he has known of the capture of several in this vicinity." To these instances of the normal northern limit of the species, and the implied though unverified fact of its breeding in Connecticut, I have to add, that I have seen the bird in Massachusetts, at East Hampton; and that Prof. Verrill has recorded its presence in Maine (Proc. Essex Inst., iii, p. 156).

BLUE-WINGED YELLOW WARBLER.

HELMINTHOPHAGA PINUS (L.) *Bd.*

Chars. Above, yellowish-olive, becoming slaty-blue on the wings and tail, the crown and all the under parts rich yellow; a small black stripe through the eye; wings with two white or yellowish cross-bars; tail with several large white blotches; bill and feet dark. Length, 5.00; extent, 8.00; wing, 2.50; tail, 2.25; bill, 0.45; tarsus, 0.67.

A rare summer visitant in southern New England, where it is known to breed; chiefly limited by the Carolinian Fauna, like the foregoing. The bird has long been attributed, and correctly, to Massachusetts, as by Emmons, Cabot, and others. Dr. Brewer denied or ignored the record for some years, but was finally forced to acknowledge its validity (Pr. Bost. Soc., xx,

1879, p. 265). Mr. E. A. Samuels, whose account had been discredited, states that he found some of the birds at Dedham, Mass., in the middle of May, 1857; and Dr. Brewer, in the last of the Supplements in which he endeavored to retrieve his blunders and catch up with the times, speaks of a specimen in the collection of the Boston Society of Natural History procured at Dedham, and of another shot at West Roxbury by Mr. C. N. Hammond—such record having been made by Mr. Ruthven Deane (Bull. Nutt. Club, iii, 1878, p. 188). The species is not in any Maine or New Hampshire list that I know of. The Connecticut record is extensive and explicit. According to Mr. Merriam, the bird is a summer resident and a breeder in southern Connecticut and in the Connecticut Valley (Rev. B. Conn., 1877, p. 14); Mr. J. N. Clark found it breeding regularly and in considerable numbers at Saybrook (Am. Nat., vii, 1873, p. 692); Mr. L. C. Bragg took it at New Haven, May 12, 1876; Mr. W. R. Nichols, at Branford, May 12, 1877; and Mr. Merriam himself at New Haven, May 24, 1876, and June 23, 1877. The last was an interesting capture, as that of an individual which "unquestionably had a nest in the immediate vicinity." Dr. Brewer records the finding of a nest near New Haven by N. A. Eddy, June 14, 1879. This nest was taken, together with the female parent, on the 20th, by which time it contained 4 eggs. It was found in an old orchard, half a mile from the coast of Long Island Sound; built on the ground, in the grass, at the foot of a small bush, and was loosely constructed of oak-leaves. The eggs were white, with red dots wreathed around the larger end, and also a few spots

scattered over the surface; they measured from 0.60 to 0.67 in length, by 0.47 to 0.50 in breadth.

Nearly the whole New England record of the species is comprised in the foregoing paragraph.

WHITE-THROATED WARBLER.

HELMINTHOPHAGA LEUCOBRONCHIALIS *Brewst.*

Helminthophaga leucobronchialis, BREWSTER, Am. Sportsman, v, Oct., 1874, p. 33. "A New Species of North American Warbler." (Newtonville, Mass., May 18, 1870.)

BREWSTER, Bull. Nuttall Club, i, Apr., 1876, p. 1, pl. 1. "Description of a New Species of Helminthophaga." (Redescribed from the same specimen, and figured.)

TROTTER, Bull. Nuttall Club, ii, July, 1877, p. 79. "Capture of a *second* specimen of *Helminthophaga leucobronchialis*." (Near Clifton, Delaware Co., Pa., May 12, 1877, by C. D. Wood.)

TROTTER, Proc. Phila. Acad., 1877, p. 292. "On *Helminthophaga leucobronchialis* (Brewster)." (Discovery of a *third* specimen, in the Philadelphia Academy's Museum, probably procured by Mr. J. G. Bell of New York, at Rockland, New York, about 1832.)

TROTTER, Bull. Nutt. Club, iii, Jan., 1878, p. 44. "A Third Specimen of *Helminthophaga leucobronchialis*." (The same as the last citation.)

BREWSTER, Bull. Nutt. Club, iii, Apr., 1878, p. 99. "The White-throated Warbler (*Helminthophaga leucobronchialis*) in Connecticut." (Discovery of the *fourth* specimen, Wauregan, Conn., May 25, 1875, C. M. Carpenter.)

BREWSTER, Bull. Nutt. Club, iii, Oct., 1878, p. 199. "Capture of a *Fifth* Specimen of the White-throated Warbler (*Helminthophaga leucobronchialis*)." (At Suffolk, Conn., July 3, 1875, by E. I. Shores.)

TROTTER, Bull. Nutt. Club, iv, Jan., 1879, p. 59. "Some Light on the History of a Rare Bird." (Being the history of the *third* specimen above noted.)

PURDIE, Bull. Nutt. Club, iv, July, 1879, p. 184. "Record of Additional Specimens of the White-throated Warbler (*Helminthophaga leucobronchialis*)." (*Sixth* specimen, Hudson, Mass., May or June, 1858, S. Jillson; *Seventh*, Portland, Conn., May 22, 1875, W. W. Coe; *Eighth*, Saybrook, Conn., May 30, 1879, J. N. Clarke.)

FISHER, Bull. Nutt. Club, iv, Oct., 1879, p. 234. "*Helminthophaga leucobronchialis* in New York." (The *ninth* specimen recognized, from Sing Sing, N. Y., Aug. 24, 1879.)

Helminthophaga gunnii, GIBBS, Daily Morning Democrat (of Grand Rapids, Mich.), xvi, June 1, 1879. "A New Bird." (The *tenth* known specimen, described as a new species.)

RIDGWAY, Bull. Nutt. Club, iv, Oct., 1879, p. 233. "Note on *Helminthophaga gunnii*, Gibbs." (Identified with *H. leucobronchialis*, as was also done by Mr. Purdie, *ibid.*, p. 185.)

Chars. "Adult male: summer plumage. Crown, bright yellow, slightly tinged with olive on the occiput. Greater and middle wing-coverts, yellow, not so bright as the crown. Superciliary line, cheeks, throat, and entire under parts, silky white, with a slight tinge of pale yellow on the breast. Dorsal surface—exclusive of nape which is clear ashy—washed with yellow, as are also the outer margins of the secondaries. A narrow line of clear black passes from the base of the upper mandible through and to a short distance behind the eye, interrupted, however, by the lower eyelid, which is distinctly white. No trace of black on the cheeks or throat, even upon raising the feathers. Bill black. Feet, dark brown. Dimensions—length, 5.19; extent, 7.88; wing, 2.45; tail, 1.86; culmen, 0.53.

"It will be seen from the above description that this bird resembles most closely the Golden-winged Warbler (*Helminthophaga chrysoptera*).

"The entire absence of black or ashy on the cheeks and throat, the peculiar character of the superciliary line, and the white lower eyelid, present however differences not to be reconciled with any known seasonal or accidental variation of that species. The restricted line of black through the eye gives the head a remarkable similarity to that of *Helminthophaga pinus*, but the semblance goes no farther."—(Brewster.)

The above paragraphs present the original describer's account of the bird, together with a condensed statement of its entire history to date, and including the references to the published account of every specimen known thus far. It will be seen that the curious bird was discovered in Massachusetts, and that a majority of the specimens are from New England. Only one, discovered in Michigan, being that named *H. gunnii*, has been taken at any considerable distance from our boundary. The actual range of the species is probably coincident with that of *H. chrysoptera*, its nearest ally. As to New England, we can only say, as yet, that the bird is a spring and fall migrant in Massachusetts and Connecticut, probably breeding there. It will be observed that all the known specimens are males; the female, with the nest and eggs, (if, indeed, there be any such things,) remain to be discovered.

BLUE GOLDEN-WINGED WARBLER.

HELMINTHOPHAGA CHRYSOPTERA (L.) Cab.

Chars. Above, slaty-blue; below, white or whitish, frequently tinged with yellow; crown of head and two bars on wing rich yellow; side of head whitish, with a broad bar of black from bill through eye; a large black throat-patch; white blotches on several tail-feathers; bill black. Female and immature specimens have the back and wings glossed with yellowish-olive, and the peculiar markings of the head and throat obscure. Length, 5.00-5.25; extent, 8.50; wing, 2.50-2.75; tail, 2.25; bill, 0.45; tarsus, 0.60.

The distribution of this pretty bird is substantially the same as that of the Blue-winged Yellow Warbler. The species is a summer resident in southern New

England, being chiefly characteristic of the Carolinian Fauna, though extending commonly into Massachusetts. It is rather more numerous there, and in Connecticut, than the last-named, but is still one of the rarer Warblers. Entering New England in May, it breeds, and retires in September. The nest, like that of other species of the same genus, is placed on the ground, generally in low swampy woodland. Mr. Hiram Cutting informs me that he has found it in Vermont.

The best account of the nidification has been given by Mr. J. Warren (Bull. Nuttall Club, i, Apr., 1876, p. 6). Speaking of its breeding in eastern Massachusetts,

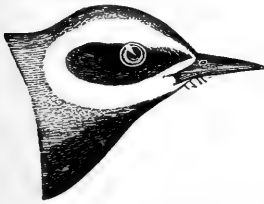


FIG. 30. — BLUE GOLDEN-WINGED WARBLER. (Natural size.)

this writer mentions a nest found in Newton, on a strip of swampy land on the skirts of a small wood, raised about two inches from the wet ground, and concealed by the leaves of a skunk cabbage; it was composed externally of dry oak and maple leaves, mixed with long

strips of grape-vine bark, lined with fine threads of the same substance interwoven with a few bits of grass — on the whole resembling a Maryland Yellowthroat's. Another nest, also found in Newton, was placed in a tussock of grass in an old cart-road; it contained 4 fresh eggs on the 5th of June, and was a little narrower and deeper than the one just described. This was found by Mr. Towne. A third nest, discovered in the same locality by Mr. Eager, was like the others in structure and position, and also contained 4 eggs, June 9, 1875. A nest discovered

by Mr. Maynard in West Newton, Mass., was built on the ground, at the foot of an elm, of oak-leaves and grape-vine bark, lined with fine grasses and a few horse-hairs. Eggs from these New England nests have been described as measuring from 0.68 to 0.72 in length by 0.48 to 0.58 in breadth; in color white, more or less thickly dotted, especially at the larger end, with reddish-brown. Two of the eggs from Mr. Warren's nest are said to have been "pure white."

NASHVILLE WARBLER.

HELMINTHOPHAGA RUFICAPILLA (*Wils.*) *Bd.*

Chars. Above, olive-green, brighter on rump, ashy on head, with a concealed chestnut-brown patch on the crown. Below, bright yellow, paler on belly, olive-shaded on sides; lores and eye-ring pale; no supraciliary stripe; wings and tail without white bars or spots. The characteristic crown-patch may be wanting in female and young specimens, in which, also, the ashy of the head is more or less glossed with olive. Length, 4.50-4.75; wing, 2.30-2.50; tail, 1.75-2.00; bill, 0.40; tarsus, 0.60.

A summer resident throughout New England, breeding in any suitable situations; common, but less so in the summer than during the migrations, when it is quite abundant. It goes very far north in summer, and in New England is chiefly limited southward in the breeding season by the Alleghanian Fauna, though it also nests sparingly in the Carolinian. The nest is placed on the ground; it is composed of leaves, bark, sometimes almost entirely of pine needles, lined with finer material of similar kinds, occasionally with hair. The eggs are usually four in number, laid early in June.

They are white, blushing when fresh, and speckled all over. According to Minot they "vary between the extremes of being finely and thickly marked about the crown with lilac and being thinly and coarsely blotched at the greater end with reddish-brown, these markings being sometimes combined." In size the eggs range from 0.60 to 0.63 in length by 0.48 to 0.52 in breadth. The nest of this bird is one of the many known to be appropriated by the Cowbird at times. The Nashville Warbler reaches New England early in May, and departs by the end of September. It is most numerous during the fall migration, and in many localities shows an evident preference for coniferous forests, though it may be found indifferently in any kind of woodland and shrubbery. It is not a very conspicuous bird, either in dress, voice, or action, and is hence often supposed to be less numerous than it really is, being overlooked amid the throng of Warblers that pass through our woods, except by those observers whose eyes and ears are trained in the exercise of discrimination.

ORANGE-CROWNED WARBLER.

HELMINTHOPHAGA CELATA (*Say*) *Bd.*

Chars. Above, nearly uniform olive-green, rather brightest on rump, but never ashy on head. Below, greenish-yellow, olive-washed on sides; a concealed orange-brown crown-patch (often wanting); a yellowish eye-ring and supraciliary line. "Size of the last, and often difficult to distinguish in immature plumage; but a general oliveness and yellowness compared with the ashy of some parts of *ruficapilla*, and the different color of the crown-patch of the two species, will usually be diagnostic."

The presence of the Orange-crown in New England is not easy to account for, as indeed is also the case respecting its appearance in the eastern United States at large. It appears to be essentially a bird of western North America, occurring rarely and irregularly in the Atlantic States. Previous to 1864 we had a few notices of its appearance in the latter, as those given by Audubon and Nuttall. Mr. Allen was the first to show its presence in New England, at Springfield, Mass., May 15, 1863 (Bull. Essex Inst., iv, 1864, p. 60). There are two other Massachusetts records (Lynn, Jan. 1, 1875, *Brewer*, Pr. Bost. Soc., xvii, Mar., 1875, p. 439; and Concord, Oct. 2, 1876, *Brewster*, Bull. Nuttall Club, i, Nov., 1876, p. 94). Mr. Brewster's specimen was a female, found industriously gleaning insects among some low scattered birches in company with Black-throated Green, Black-poll, and Nashville Warblers. Mr. W. H. Fox found the bird at Hollis, New Hampshire, as stated in *Forest and Stream*, vi, p. 354. A second New Hampshire specimen was taken at the Isles of Shoals, Sept. 9, 1877; this was a female, "in a small flock supposed to be of the same species" (Bull. Nutt. Club, iii, Apr., 1878, p. 96). There is also a reference to a Rhode Island capture at Cranston, Dec. 3, 1874 (*Purdie*, Bull. Nuttall Club, ii, Jan., 1877, p. 21). Though the bird has not yet been reported from Connecticut, it unquestionably occurs in that State, having been noticed by Mr. E. P. Bicknell in New York close by the Connecticut border (see *Merriam*, Rev. B. Conn., 1877, p. 15). Bearing the close resemblance that it does to several other species, it is not unlikely to escape observation unless very carefully sought for.

TENNESSEE WARBLER.

HELMINTHOPHAGA PEREGRINA (*Wils.*) *Cab.*

Chars. Adult male : Above, yellowish-olive, brightest posteriorly, changing anteriorly to pure ash ; no crown-patch ; lores, eye-ring, and frequently a supraciliary stripe, whitish. Under parts dull white, scarcely or not tinged with yellowish. Wings and tail dusky, strongly edged with the color of the back, the outer tail-feathers frequently with obscure whitish spots. Bill and feet dark. Female : The ashy of the head less pure, and the whole under parts more or less tinged with yellowish. Young : Like the adult female, but whole upper parts more decidedly yellowish-olive, and under parts strongly tinged with yellowish. In distinguishing this species, the great length of the pointed wing, in comparison with the short tail, will be diagnostic when the plumage may be much like that of *ruficapilla* or *celata*. Length, 4.50-4.75 ; extent, 8.00 or more ; wing about 2.75, with the first three or four quills of nearly equal lengths ; tail only 2.00, or less.

The Tennessee Warbler would appear to be one of those species whose range in the breeding season helps to draw the New England line between the Alleghanian and Canadian Faunæ ; but it is rather too rare a bird in this part of the world to enable us to settle its geographical status in a perfectly satisfactory manner. In southern New England, according to the consenting testimony of all the local lists, it occurs only during the migrations, and is never common. It reaches Connecticut early in May, passes on during that month, and reappears in September. Mr. Merriam mentions one instance of occurrence near Suffield, Conn., June 8, 1875, "which is so late that one might almost suspect it of breeding within our limits" (Rev. B. Conn., 1877, p. 14). Allen, Brewer, and Minot concur in stating that it is

only a migrant as far north as Massachusetts. Entering Maine, however, the face of the record changes directly. Prof. Verrill reports the bird from the headwaters of the Penobscot in June, where it was doubtless breeding; it was found by Mr. Boardman in the vicinity of Calais, in the breeding season; and Mr. Maynard reports it as very common at Umbagog in the same period of its life, adding the following note: "This beautiful little species breeds at Upton; two or three females were taken about June 8th, which showed every evidence of incubating, yet we were unable to discover the nest, though diligent search was made for it in localities where it must have been built. The nest is probably placed on the ground, after the manner of all the genus. The bird is found in all wooded localities in the region north of the neighboring mountain range, which is without doubt its southern limit during the breeding season." From the Canadian, then, the bird breeds northward through the Hudsonian, Fauna, and even to Arctic America; but I am aware that an authentic nest has been found in New England, and even so far south as Springfield, Mass., where it was secured by Professor Horsford, the parent having been also taken, confirming the identification. It is described by Dr. Brewer as built in a low clump of bushes, just above the ground, and constructed of fine vegetable fibres, grasses, mosses and the like, and lined with hair; it was $2\frac{3}{4}$ inches in diameter, by 2 in depth, with a cavity $2 \times 1\frac{3}{4}$. The eggs, measuring 0.60×0.50 , were pearly white, wreathed about the larger end with brown and purplish markings.

SUMMER WARBLER; SUMMER YELLOW-BIRD;
YELLOW WARBLER.DENDRÆCA ÆSTIVA (*Gm.*) *Bd.*

Chars. Male, adult: Golden-yellow, the back yellowish-olive, frequently with dark streaks, the breast and sides boldly striped with orange-brown; wings and tail dusky, all the feathers edged with yellow; bill dark horn-blue; feet brown. Female and young: Paler yellow, the orange-brown stripes dull, few, or wanting entirely. Length, 4.75-5.00; extent, 7.50-7.75; wing, 2.50; tail, 2.00; bill, 0.37; tarsus, 0.68.

This lovely Warbler, not less famed for its beauty than for its confiding disposition, is one of the most abundant representatives of the genus *Dendræca* in New England in the summer months and during the migrations. It is almost universally distributed throughout North America, and perhaps the only one of the Wood Warblers that breeds with equal readiness in most parts of its remarkably extensive range; being, moreover, one of the very few which build their nests in the orchard, garden, park, or city, on familiar terms with man. It appears, indeed, to be more numerous in cultivated and populous districts than in the trackless woods and swamps of mountainous and northerly sections. Arriving in New England early in May, sometimes the latter part of April, it is soon settled for the summer; lays its eggs late in May or early in June, sometimes a second set in July, and departs early in September, before the first storms of autumn, which its delicate constitution is little able to endure. The nest may be built in a fruit or shade tree at some distance from the ground; oftener, however, in hedge-

rows or other shrubbery in fields and pastures, as barberry and currant-bushes, or in thickets of willows or alders along the banks of streams and in other low moist situations. It is a neat, compact, and durable structure, of soft vegetable and animal substances, closely felted together, but so miscellaneous as to be scarcely described in few words. Soft cottony material, such as plant-down of various kinds, are always conspicuous in these structures, which usually also include wool, hair, silk, and sometimes a few feathers; these felting materials being added to a framework of fine grasses and weed-tops. The eggs are from 3 to 5 in number, commonly 4 or 5, among which may often be found the Cow-bird's egg — the Summer Warbler being one of the birds most persistently victimized by the reprobate tramp of a *Molothrus*, and one which sometimes displays great ingenuity in avoiding the disagreeable task of incubating the alien egg, by adding a second story to its nest, thus leaving the hateful object in the basement below, out of the hatching way forever. The eggs measure from 0.64 to 0.69 in length, by 0.48 to 0.53 in breadth; they are usually dull grayish-white or greenish-white, sometimes more purely white, variously dotted, spotted, and blotched with different shades of reddish-brown and lilac, chiefly about the larger end. The gay color of this Warbler makes a pretty spot as the bird flits through the green foliage of the forest or plays amidst the rose-tinted blossoms of the fruit-orchard; and its sprightly song is one of the most familiar sounds of bird-life during the season when the year renews its youth.

BLACK-THROATED GREEN WARBLER.

DENDRÆCA VIRENS (Gm.) Bd.

Chars. Male, adult: Back and crown clear yellow-olive, in high plumage with dusky markings; forehead and entire sides of head rich yellow, with olive markings through eyes and auriculars; chin, throat, and breast, jet-black, this color prolonged in streaks on the sides of the body; other under parts white, more or less yellow-tinted; wings and tail dusky, the former with two white cross-bars and much white edging, the latter with the three outer feathers nearly all white; bill black, feet dark. Female and young, and male in fall: Not so highly colored, the black restricted, interrupted, veiled with yellow, or wanting entirely, except a few streaks along the sides. Length, 4.75-5.00; extent, 7.25; wing, 2.50; tail, 2.00; bill, 0.35; tarsus, 0.70.

Next after the ubiquitous and almost domestic Summer Warbler, the Black-throated Green is the most abundant and most widely distributed of its kind in New England during the summer months. Its evident preference in the choice of a home is for the pine woods, and wherever there are tracts of coniferous trees, there these Warblers are almost sure to be found the tenants of sighing seclusion, reiterating in no uncertain accents the secrets which the melancholy pines confide to stealthy breezes. In New Hampshire and northward the birds are more numerous than they appear to be in southern New England, where they are seen in greatest numbers during the vernal and autumnal migrations; and they are, moreover, somewhat locally distributed in summer, abounding in some places, at least in comparison with their numbers in others to all appearance equally eligible; still, the general statement that they breed in all the New Eng-

land pineries is accurate. Entering this country late in April, certainly by the opening of the following month, they spread at large, leaving representatives all the way, and some proceed northward beyond our limits. Family cares concluded, the return movement begins early in September, or even during August; some may still be seen in Massachusetts in October, and all do not withdraw from the Connecticut Valley



FIG. 31. — BLACK-THROATED GREEN WARBLER. (Natural size.)

until the latter part of this month. They are very well-known birds, so numerous are they, and so easy to identify by their conspicuous colors, active habits, and energetic notes, repeated almost incessantly during the nuptial period. One can hardly enter a piece of pine-woods during the summer without having his attention soon attracted by their quaint notes, and he will not be long in discovering from what birds the sounds proceed,

the little creatures being soon descried flitting about in the upper foliage of these shady resorts, very industriously foraging for their insect prey.

A nest in the Amherst College cabinet, supposed to have been taken in New Hampshire, is composed outwardly of thin strips of soft inner bark, with a few pine-needles, and some slender pine-twigs; with an inner layer of grasses, and a final lining of horse-hair, some bits of paper and cloth being also used, between the grasses and the pine-needles. This corresponds in the main with the description given by Mr. Minot (B. N. E., 1877, p. 117), who has offered us a fresh and feeling description of a bird which is evidently a great favorite of his. "The nest," he says, "is *usually* placed in a pine, in a horizontal fork near the end of a bough, from twenty to fifty feet above the ground (but sometimes lower). It is finished in June, sometimes in the first week, sometimes not until the last. It is composed outwardly of narrow strips of thin bark, bits of twigs from vines, dried grasses, and such odds and ends as the birds have found convenient to employ; and inwardly of bits of wool, feathers, and plant-down, but it is generally lined with hairs and fine shreds of vegetable substances. It is usually small, neat, and very pretty. The eggs of each set are three or four, and average $.67 \times .54$ of an inch. They are commonly (creamy) white, with reddish or amber-brown and *purplish* markings, grouped principally about the crown. These markings are, for the most part, either clear and delicate or a little coarse and rather obscure; but the eggs are better characterized by their shape, being rather broad in proportion to their length."

BLACK-THROATED BLUE WARBLER.

DENDRÆCA CÆRULESCENS (L.) *Bd.*

Chars. Male, adult: Above, uniform slaty-blue, in high plumage with a few black streaks on the back; below, pure white, the sides of the head to above the eyes, the whole chin, throat, and sides of the body, jet-black; no white wing-bars, but a white spot at base of primaries; wings dusky, edged with the color of the back; tail with large white blotches; bill black; feet dark. Female: Entirely different; dull olive-green, with a slight bluish shade, below pale dull yellowish; but recognizable by the triangular white spot at the base of the primaries, which, though smaller than in the male, may almost always be seen, at least on pushing aside the primary coverts; no other wing-markings. The male in immature plumage has the blue glossed with greenish, and the black interrupted and restricted. Size of the species, that of *D. virens*.

So far as its local distribution in New England is concerned, the Black-throated Blue offers a case closely coincident with that of the species last noticed. To the fact that it is less numerous, observations respecting its movements being thus less complete, are to be attributed in the main those differences between the published records of the two species. Thus Dr. Brewer's list of 1875 incorrectly gives the bird as only a migrant in southern New England, though it has been observed in summer in Massachusetts, and has been known to breed in Connecticut. The majority of individuals, however, pass in spring through the Alleghanian into the Canadian Fauna to breed; and Dr. Coues stated the case correctly in 1868, in saying that it breeds throughout New England, but most numerous in its northern portions. It appears to enter the country a few days later than the Black-

throated Green does, — usually the second week in May, — and is commonly observed in Connecticut or Massachusetts until June, by which time most individuals betake themselves northward. The return movement occupies the month of September and part of October, as in the case of the species last mentioned. There is even an instance of the presence of the bird near Boston in winter; but this is of course wholly exceptional. The chief difference in habits between this species and its nearest relative is, that it does not show the same decided preference for pineries.

The best account we have of the nest and eggs is that lately furnished by the Rev. C. M. Jones, who twice found these birds breeding at Eastford, Conn., and recorded his observations in the Bulletin of the Nuttall Club, i, Apr., 1876, p. 11, as follows: "The nest was located in deep woods, near the base of a hill which sloped down to a swampy run. It was built in a small laurel (*Kalmia latifolia*), a fourth of an inch in diameter at the base. About five inches from the ground the bush separated into three branches, and in this triple fork the nest was situated. It has a firm and compact appearance. It was composed outwardly of what appears to be dry bark of grape-vine, with a few twigs and roots. This is covered in many places with a reddish woolly substance, apparently the outer covering of some species of cocoon. The inside is composed of small black roots and hairs. The nest contained four eggs." This nest was found June 8, 1874. "The second nest I discovered on the 13th of the same month. It was about 80 rods distant from the first, on level ground, and near a piece

of swampy land. The nest was not so near the ground as the first, the top being $11\frac{1}{2}$ inches from it. It was placed in a laurel." Though of the same material, this latter nest was so constructed, that, "placed side by side, the two nests bear very little resemblance." The eggs are 3 to 5, creamy white, tinged when fresh with rose-color, marked with a few scattering spots of brownish, generally at the larger end, but often also over the entire surface; they are from 0.60 to 0.67 long, by 0.47 to 0.51 broad, and are laid the first of June.

CÆRULEAN WARBLER.

DENDRÆCA CÆRULEA (*Wils.*) *Bd.*

Chars. Above, azure-blue, with black streaks; below, pure white, with blue or blue-black streaks on the breast and sides; wings with two white cross-bars; nearly all the tail-feathers with white spots; bill black; feet dark. Female and young with the blue impure, glossed over with greenish, the white similarly soiled with yellowish; a yellowish eye-ring and supraciliary line. A small, very beautiful species, less than 5 inches long.

This very daintily-colored Warbler is a rare summer visitant to southern New England only, being apparently confined to the Carolinian Fauna, where, doubtless, it will be found to breed occasionally.

[The Cœrulean Warbler was attributed to New England by Linsley in 1843, having been observed by that gentleman at Stratford, Conn., in April, 1841. (See *Am. Journ. Sci.*, xliv, No. 2, Apr., 1843, p. 257.) Nothing appears to throw doubt upon this record. In 1868, I included the species among the birds of New England, on the strength of the Connecticut instance,

and of an alleged Massachusetts occurrence given by F. W. Putnam. The latter, it seems, proves to have been erroneous. But in satisfying himself, by a careful inquiry, that Mr. Putnam meant *D. cærulescens*, not *D. cærulea*, Dr. Brewer overlooked or ignored the earlier record, and said he could "find no evidence that this bird has ever crossed our borders" (Pr. Bost. Soc., xvii, 1875, p. 451). Very soon, however, he was obliged to reconsider the matter, new evidence of unquestionable character having been forced upon his attention; for Mr. Purdie meanwhile brought to light the fact that a male had been procured by Mr. E. I. Shores at Suffield, Conn., June 12, 1875 (Bull. Nutt. Club, ii, Jan., 1877, p. 21). Yielding very reluctantly, Dr. Brewer then admitted the species in the following terms, which seem intended to cast suspicion upon Mr. Purdie's veracity: "This western species is said to have been taken at Suffield, Conn. (Nutt. Bull. ii, p. 21; Merriam's Birds of Conn., p. 16). I therefore venture to add this bird to my list, though not without much hesitation" (Pr. Bost. Soc., xix, 1878, p. 303). Such grudging concession betrays ill-humor in the failing attempt to break down the general reliability of my list of 1868, and in the impossibility of holding up the trustworthiness of his catalogue of 1875 — to do which Dr. Brewer seems to have often challenged the statements of other writers beyond any requirement of proper scrutiny. The Cœrulean Warbler has since this *contrectemps* been found in Rhode Island, as recorded by Mr. Ruthven Deane (Bull. Nutt. Club, iv, 1879, p. 185), who says that a specimen was taken near Cumberland Hill, in that State, by Mr. C. M. Carpenter, May 22, 1878. This was a male shot/in

company with a troop of Blue Yellow-backed Warblers. An individual was also taken by Mr. E. A. Mearns, at West Point, N. Y., not far from the New England line, May 17, 1875 (Bull. Nutt. Club, iii, Jan., 1878, p. 40). A very full and interesting account of the nest and eggs, before little known, has lately been published by Mr. J. A. Allen, upon examination of material from East Penfield, N. Y., taken by Mr. P. S. Fuller, June 7, 1878 (Bull. Nutt. Club, iv, Jan., 1879, p. 25). —C.]

YELLOW-RUMPED WARBLER; MYRTLE BIRD.

DENDRÆCA CORONATA (L.) Gray.

Chars. Adult male: Above, slaty-blue, streaked with black; below, white, the breast and sides heavily streaked with black; throat definitely pure white, bounded by the black of the side of the head and of the breast. Eyelids and a supraciliary line white. Rump, middle of crown, and sides of breast bright yellow. Wings with two white cross-bars. Tail with large white blotches. Bill and feet black. Length, 5.50-5.75; extent, 8.50; wing, 3.00; tail, 2.50. The male in winter, the female, and young have the slaty color more or less completely replaced by plain dull brown, and the streaks on the under parts few or obsolete, or not pure black. The changes of plumage are interminable; but the rump is always yellow, and there are more or less evident traces of the yellow on the sides and crown; which marks are therefore diagnostic.

The very well-known Yellow-rump is the only species of its genus regularly found in New England *in winter*; at which season it may be seen as far north as Massachusetts, in company with Chickadees, Nuthatches, Kinglets, and various Sparrows. It is, however, less abundant during the inclement season than whilst the migrations are in progress; at which periods

it is one of the most numerous of the Warblers. It is a rather early spring migrant, appearing in numbers usually about the middle of April, remaining in force until the latter part of May, reappearing late in September, and loitering in undiminished abundance all through October. Then those that are to pass south take their departure, and the remainder settle in winter-quarters. These remarks apply to the Alleghanian and Carolinian Faunæ, in which areas Dr. Brewer has stated the Yellow-rump to be simply "migratory;" but the fact of its wintering regularly in southern New



FIG. 32. — YELLOW-RUMPED WARBLER. (Natural size.)

England is the most notable point respecting its local distribution, attested by many specific records. It has been seen in winter in Swampscott, Mass.; I have found it wintering in Marshfield, Mass.; "a few known to winter on Cape Cod" (*Allen*);

"Mr. Grinnell informs me he has taken it every month during the entire winter" (in Connecticut, *Merriam*); "I have several times, in December and January, found them near Boston" (*Minot*); etc.

Entering the Canadian Fauna, the scene shifts to present the Myrtle Bird as a summer resident of New England, breeding numerous in the coniferous forests of Maine, New Hampshire, and Vermont. For instance, it is common during the breeding season at Upton, Me., where, according to Mr. Maynard, the eggs are laid about the second week in June. "Three nests were found by Mr. H. B. Bailey, on June 7th

and 8th. They were all built in low spruce-trees, about four feet from the ground, and were rather neat structures, being made of hemlock twigs and lined with a few feathers. They each contained four fresh eggs. Several other nests were taken by Mr. Bailey between the 8th and 15th" (Pr. Bost. Soc., xiv, 1872, p. 363). "A nest which I found in northern New Hampshire was somewhat different, but contained three eggs, which were white, marked with purplish and brown, and average $.68 \times .50$ of an inch. Dr. Brewer describes others as measuring about $.75 \times .55$ of an inch, and being white, or often bluish, blotched and spotted with reddish-brown, purple, and darker shades of brown." (*Minot*, B. N. E., 1877, p. 124.)

Such is the usual and normal manner of the Yellow-rump's presence in New England. There is something curiously erratic, however, in its breeding instincts and capacities; for it is known to rear its young, in some instances, in localities far south of New England, even in the West Indies. A notice has lately appeared of its nesting in Maryland (Bull. Nutt. Club, v, July, 1880, p. 182). It is supposed by Mr. Allen, with good reason, to breed occasionally in Berkshire County, Mass.; and no one need be surprised to hear of a nest found in any portion whatever of New England.

AUDUBON'S WARBLER.

DENDRÆCA AUDUBONI (*Towns.*) *Bd.*

Chars. "With a close general resemblance to the last, but throat yellow, not white; eyelids white, but *no* white supraciliary line; cheeks *not* definitely white; wing-bars generally fused into one large white patch, and tail-blotches larger; otherwise like *coronata*, of which it is the western representative."—(*Coues.*)

Accidental in New England, in one known instance. A specimen was taken near Cambridge, Mass., Nov. 15, 1876, by A. M. Frazar. "It was a male, and the yellow of the throat was very plainly marked (Bull. Nutt. Club, ii, Jan., 1877, p. 27). ["The occurrence, if authentic," snarls Dr. Brewer, "must be regarded as exceptional and accidental." This is singular perspicacity — the species being one which belongs on the other side of the continent of North America. — C.]

BLACKBURN'S WARBLER.

DENDRÆCA BLACKBURNÆ (*Gm.*) *Bd.*

Chars. Adult male: Above, including wings and tail, black, the back varied with whitish or dull yellowish streaks, the wings with a large white area on the coverts and much white edging; several lateral tail-feathers mostly white. Crown-spot, eyelids, line over eye, throat, and breast intense orange or flame-color, finely contrasting with black surroundings; sides streaked with black; belly whitish or yellowish. Bill and feet dark. Adult female: Upper parts and sides of the head with the black replaced by brownish-olive, with black streaks; the flame-color replaced by yellow, the white area on the wing-coverts resolved into two bars, and that on the outer tail-feathers less extensive. In the autumn, the coloration of each sex is still further toned down; and young birds are even more obscure in coloring, bearing little resemblance to the adults in spring. Length, 5.25-5.50; extent, 8.50; wing, 2.75; tail, 2.00.

This most richly-tinted of all the Warblers is a summer resident in New England, breeding in any suitable situations, but more sparingly in the Alleghanian and Carolinian than in the Canadian Fauna, which latter is its true summer home. The bird has been supposed by some to be confined to north-

ern New England in the breeding season, but such proves to be not the case. In Massachusetts, according to Mr. Allen, some remain during the summer, from among the large numbers that pass through in migration, and a similar statement is offered by Mr. Minot; while even in Connecticut, says Mr. Merriam, "a few sometimes breed." A nest found by Mr. Minot near Boston was built in a thick hemlock wood, about twenty feet from the ground; it contained three young and one egg, the latter measuring 0.65 by 0.50, and resembling that of the Chestnut-sided Warbler, in being white, with reddish-brown and lilac markings, chiefly about the larger end. The nest has been described by Audubon as composed externally of various substances, internally of silky fibres and fine shreds of bark, lined with a thick bed of feathers and hair. At Upton, Me., where the bird is common in summer, it frequents the higher parts of coniferous trees, where its nest is doubtless placed, but so concealed by the hanging moss as to be hard to find. At all times, the Blackburnian Warbler prefers high open woods, generally disporting and foraging among the upper branches and in the terminal foliage. Though sometimes seen in April, it is usually one of the later spring arrivals, coming about the second week in May. It is extremely abundant some seasons, in certain localities, but rare other years, in places apparently not less inviting. The return movement begins early in September, and is usually accomplished during that month, though a few loiterers may be found in southern districts for some days in October. The nesting appears to be rather late, as young birds are rarely abroad before July.

This species is omitted from Dr. Brewer's list.

BLACK-POLL WARBLER.

DENDRÆCA STRIATA (*Forst.*) *Bd.*

Chars. Male, adult : Above, grayish-olive streaked with black, the crown glossy black ; below, white, with a chain of black streaks from chin to tail ; wings dusky, with much greenish and whitish edging, and two white cross-bars. Tail like the wings, with rather small white spots on two or three outer feathers. Bill blackish above ; lower mandible and feet pale flesh-color or yellowish. Female : Similar, but crown like the back, the under parts tinged with greenish-yellow, the streaks dusky and not so sharp as in the male. Young : " Similar to the adult female, but brighter and more greenish-olive above, the streakings few, and mostly confined to the middle of the back ; below, more or less completely tinged with greenish-yellow, the streaking obsolete, or entirely wanting. Under tail-coverts usually pure white. These autumnal birds bear an extraordinary resemblance to those of *D. castanea* (though the adults are so very different), the upper parts being, in fact, the same in both. But young *castanea* generally show traces of the chestnut, or at least a buffy shade, quite different from the clear greenish-olive of *striata*, this tint being strongest on the flanks and under tail-coverts, just where *striata* is the most purely white. Moreover, *castanea* shows no streaks below, traces at least of which are usually observable in *striata*." (*Coues.*) Length, 5.25-5.50 ; extent, 9.00-9.25 ; wing, 2.75-2.90 ; tail, 2.25.

It is chiefly as a spring and autumn migrant that the Black-poll is known in New England. The bird is one of those which passes very far north to breed, in Labrador and Arctic America, only a few individuals lingering through the summer in northern New England, in the Canadian Fauna alone. It is noted by Prof. Verrill as breeding at Umbagog, and by Mr. Boardman at Calais, Me. Mr. Maynard did not find it breeding at Upton, where it disappeared early in June, on its way north. But young birds

have been seen at North Adams in August, permitting the inference that they were reared in that locality. The Black-poll is one of the latest arrivals in spring, as well as one of the most abundant during the few days occupied *in transitu*. It is scarcely to be seen in Connecticut before the middle of May, and is not commonly observed in Massachusetts until the third or fourth week of that month; disappearing entirely during the opening days of June. Returning early in September, they become very numerous, and remain so until the middle of October, when there is a sensible decrease in



FIG. 33.—BLACK-POLL WARBLER. (Natural size.)

their numbers, though all do not leave the Connecticut valley before November. They are to be found in any high open mixed woods, and also frequent orchards and gardens; but they show, like the Black-throated Greens, a decided preference for evergreen forests. According to Dr. Brewer's observations, made at Eastport, where the birds were found to be very numerous, and the low swampy woods were vocal with their songs, several nests were found in thick spruce-trees, about eight feet from the ground. These were large for the size of the bird, being five inches across and three deep, with thick walls and little cavity. They were strongly and compactly built of the terminal twigs of coniferous trees, woven with *Cladonia* lichens, slender rootlets, and fine sedges, and lined with panicles of grass. The number of eggs in every case was five, measuring 0.72 by 0.50, profusely blotched and dotted all over with reddish-brown, purplish, and lavender.

BAY-BREASTED WARBLER.

DENDRÆCA CASTANEA (*Wils.*) *Bd.*

Chars. Adult male : Back grayish-olive, thickly streaked with black ; forehead and sides of head black, enclosing a large chestnut patch ; a duller shade of chestnut occupies the whole chin and throat, and thence extends, more or less interrupted or diluted, along the sides of the body ; other under parts ochrey or buffy-whitish ; a similar buffy area behind ears ; wings with white cross-bars, and outer tail-feathers with the usual white blotches ; bill and feet blackish. The female in spring is similar, but more plainly olivaceous above and with duller or more restricted chestnut markings. For comparison of the young with *striata*, see that species. Size of *striata*.

The New England record of the Bay-breast coincides closely with that established for the Black-poll ; but the former is not quite so late a migrant in spring or fall, and is more irregular, both in local distribution and in apparent abundance. The two species are alike strictly limited in their southward extension in the breeding season by the Canadian Fauna ; the difference in breeding range being, that the Bay-breasts are limited by the same Fauna in their northward dispersion in summer, while the Black-polls pass on into the Hudsonian. The consequence is, that the Bay-breasts are abundant summer residents in certain portions of northern New England, while the Black-polls are comparatively rare in the same districts at such period. The more southerly summer range of the Bay-breast is also evident by the fact, stated by Minot, that the bird has been seen in Massachusetts in June and July. Entering the Connecticut valley about the second week in May, the species is found in southern

New England throughout the remainder of that month, and sometimes for a few days in June. What is rather singular, and contrary to the rule with Warblers, these birds appear to be more numerous in spring than in fall, in most localities. This is attested by several observers, and if an actual fact, would argue that the return movement is by a different route from that pursued in the spring migration. Mr. Maynard has made out such a case, stating that the birds take an eccentric westerly course in the fall, by which the majority avoid the Eastern and Middle States; the spring movement being along the Atlantic coast and up the Connecticut valley, generally avoiding eastern Massachusetts. Mr. Merriam's observations in Connecticut seem to support this theory. He states that the bird is sometimes quite abundant during the spring migrations, "at other times extremely rare, if occurring at all;" and considers it of sufficient importance to note the few instances of fall occurrences (Rev. B. Conn., 1877, p. 16). Mr. Minot's remarks have the same tendency: he says the birds are as a rule rare in eastern Massachusetts in spring, "and in autumn are never seen" (B. N. E., 1877, p. 109). Mr. Allen, however, with reference to Massachusetts, simply says: "Common spring and autumn migrant, varying greatly in abundance in different years" (Bull. Essex Inst., x, 1878, p. 13).

Mr. C. J. Maynard and Mr. Brewster found this species the "most abundant of the *Sylvicolidæ* at Umbagog," and the former has given a full account of their observations on the nest and eggs (Pr. Bost. Soc., xiv, 1872, p. 364). Two nests were taken June 8th; each was placed on the horizontal branch of a

hemlock, fifteen or twenty feet from the ground; one tree being on the side of a thickly-wooded hill, the other along a cart-path in the woods. The nests were large in comparison with size of the bird, being $5\frac{1}{2}$ to 6 inches across outside, by $2\frac{1}{2}$ to 3 deep; with a cavity $2\frac{1}{2}$ to 3 in diameter, and about $1\frac{1}{2}$ in depth. One of these nests was composed of small larch-twigs mixed with a little tree-moss, very neatly and smoothly lined with black fibrous rootlets, seed-stalks of ground-moss, a little rabbit fur, and a bit of green sphagnous moss. The other was quite similar, but the materials included a few grass-stalks. One of these nests contained three eggs and the other two; in the latter case, dissection of the female showed that two more would have been added. These eggs measured from 0.65 to 0.71 in length, by 0.50 to 0.53 in breadth, averaging near the larger dimensions expressed by these figures. The ground-color was bluish-green, in one case "thickly spotted with brown over the entire surface, with a ring of nearly confluent blotches of brown and lilac at the larger end." The others were similar, but some of them were less profusely spotted, leaving the point immaculate in some cases; and in others there were a few umber spots or brown lines at the larger end. An unidentified nest, obtained by Mr. R. Deane at Umbagog in June, 1870, was found on comparison to be undoubtedly of this species, being constructed in the same manner, though placed rather higher in a hemlock. This contained six eggs, the largest of which measured 0.75 by 0.55. It was a neat, compact structure, of larch-twigs, tree-moss, and spiders' silk, closely interwoven, and lined smoothly with black and brown fibrous roots.

CHESTNUT-SIDED WARBLER.

DENDRÆCA PENNSYLVANICA (L.) *Bd.*

Chars. Male, adult: Back streaked with black and pale yellow (sometimes ashy or whitish); whole crown yellow, bordered with white; then enclosed in black; sides of head and neck and entire under parts pure white, with a large black mark on the former, and a chain of chestnut streaks along the sides of the body. Wing-bars white or yellowish, generally fused in one large patch; tail-feathers blotched with white; bill blackish; feet brown. Adult female: Similar, less highly colored, black on head obscure or wanting, chestnut streaks thinner or fewer. Young: Very different; entire upper parts clear yellowish-green; below, entirely pure white, or with slight traces of the chestnut streaks; no distinct head-markings; wing-bars yellow; bill light below. Length, 5.00-5.25; wing, 2.50; tail, 2.00.

A common summer resident of New England at large, breeding rather more numerously in the Alleghanian than in the Canadian Fauna; in southern New England, nevertheless, more abundant during the migrations than in summer. It arrives the first week in May, and is generally distributed by the middle of that month, in open mixed woods, thickets, orchards, and gardens.

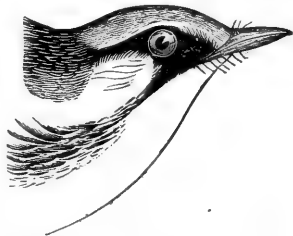


FIG. 34.—CHESTNUT-SIDED WARBLER. (Natural size.)

The return movement occurs in September. Being most active and most widely diffused during migration, and frequenting cultivated grounds more at that season than when retired and settled for the summer, it is more conspicuous a bird in spring and fall than in the breeding months.

"The nest is usually coarser than that of the Yellow Bird (*D. æstiva*), and contains fewer woolly materials. It is often composed outwardly of narrow strips of thin bark or dried grasses, mixed with a few bits of plant-down, and inwardly of very fine straw, which is lined with hairs. Such is the description of two nests before me. The nests are commonly placed from two to eight feet above the ground, in a low bush, shrub, or sapling, and are either built in a fork or otherwise secured (but are never pensile). The situations generally chosen are the 'scrub-lands,' or open woods in low grounds which contain bushes, vines, etc. Near Boston they are usually finished, and contain four or five fresh eggs, about the first of June. The eggs average $.68 \times .50$ of an inch, and are generally white with purplish, or reddish-brown spots and blotches, which are sometimes confluent. These markings are either scattered over the egg, more thickly at the larger end than the other, or are grouped in a ring about the crown." (*Minot, B. N. E., 1877, p. 106.*)

According to Dr. Brewer, the Chestnut-side generally builds in low, swampy places, apart from cultivated grounds. A number of nests were found in barberry bushes about East Lynn, by Mr. G. O. Welch. These varied from 3 to 4 inches in diameter by $2\frac{1}{2}$ to $3\frac{1}{2}$ in depth, and were mostly made of bark-strips, strengthened with grass-stems, lined with cottony substances and hair, and secured to the supporting twigs by silken threads from the cocoons of insects. Nests found in Vermont by Mr. C. S. Paine are described as built in the forks of low bushes, 3 to 5 feet from the ground; all of the many specimens examined being similar in structure and position. (*Hist. N. A. B., i, 1874, p. 247.*)

BLACK-AND-YELLOW WARBLER.

DENDRÆCA MACULOSA (*Gm.*) *Bd.*

Chars. Male, adult: Back black, quite pure or with olivaceous edgings of the feathers; rump bright yellow; crown clear ash, bordered on the sides by white, framed in black, there being a black band across forehead and along sides of head, joining that of back, enclosing the white under eyelid. Entire under parts rich yellow, heavily streaked across breast and along sides of body with black; under tail-coverts white. Wing-bars white, usually fused in one large patch; tail-spots white, of small size and rectangular shape, near the middle of all the feathers except the middle pair. Female: Similar, mixed black and olive-gray above, the head-markings obscure, the pectoral and lateral streaks smaller and fewer. Young: Above, ashy-olive, becoming quite gray on the head; no head-markings, and no streaks below, or but few, and only along the sides; recognized by conspicuously yellow rump and under parts, and small square spots on the middle of the tail-feathers. Length, 4.75-5.00; extent, 7.50; wing, 2.50; tail, 2.00.

This is a dainty little bird, one of the most dressy of a family noted for the richness and elegance of their attire. Through southern New England it passes in spring and fall, to and from its summer home in the Canadian Fauna. A few may linger to breed in the higher parts of Massachusetts, but the species is practically restrained, by the mysterious instinct which comes into play in all such cases, from nesting south of the Fauna just named. Entering Connecticut early in May in large numbers, the 'Magnolias' are commonly observed throughout that month, by the end of which they have passed through the Carolinian and Alleghanian Faunæ; they are scarcely or not to be seen there again until the end of August, and not in any numbers until September, during the whole of

which month they linger before final departure for their southern winter resorts. During the migrations they are generally dispersed in all kinds of woodland.

We have several excellent advices of the nesting of this species in New Hampshire and Maine, from Mr. Deane, Mr. Brewster, Mr. Maynard and others. A particularly good account of the bird's habits is given by Mr. Brewster (Bull. Nutt. Club, ii, 1877, pp. 1-7), who found breeders on Mount Monadnock, N. H., and states that the birds are everywhere common in summer on the White Mountains. The nidification, as witnessed by several observers, seems to be very constant in method. A nest taken by Mr. Brewster, at

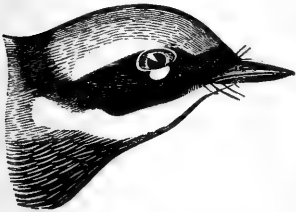


FIG. 35. — BLACK-AND-YELLOW
WARBLER. (Natural size.)

Umbagog, June 8, was built in a low hemlock, about four feet from the ground, — a light, airy structure, resembling that of the Chestnut-sided Warbler, composed of interlaced larch twigs, weed-stalks, and grasses, lined with black horse-hair. It was about 3 inches

across outside, and scarcely 2 in depth, with a cavity 2 inches in diameter and only $1\frac{1}{4}$ deep. This contained four eggs, from 0.62 to 0.65 long by 0.46 to 0.50 broad, dull white, minutely dotted all over with brown, and wreathed about the larger end with brown and clouded lilac spots and blotches. Several other nests, described by Mr. Maynard, contained four eggs apiece, and were all alike placed in small hemlock or spruce trees, a few feet from the ground; their composition was quite similar, but sometimes fine black rootlets replaced the horse-hair lining, or moss and

spiders' silk were added to the materials already mentioned. These eggs were all found the first and second weeks in June, in Maine. We may judge that a second brood is reared, from the circumstance that Mr. N. C. Brown, who found this to be one of the commonest summer sylvicolines about Portland, Me., says that the young make their appearance about August 3d, and soon abound (Bull. Nutt. Club, iv, Apr., 1879, p. 166).

CAPE MAY WARBLER.

DENDRÆCA TIGRINA (*Gm.*) *Bd.*

Chars. Male, adult: Back yellowish-olive, with dark markings; crown blackish; an orange-brown ear-patch; a black loreal line; rump rich yellow; under parts the same, tinged with orange-brown anteriorly, pale on belly and under tail-coverts, streaked with black on the breast and sides; wing-bars fused into one large patch; three pairs of large white tail-blotches; bill and feet black. Female: Somewhat similar, lacking distinctive head-markings, with smaller wing-patch and tail-blotches, paler under parts, and fewer black streaks. Young: "An insignificant-looking bird, resembling an over-grown Ruby-crowned Kinglet, without its crest; obscure greenish-olive above, rump olive-yellow, under parts yellowish-white; breast and sides with the streaks obscure or obsolete; little or no white on wings, which are edged with yellowish; tail-spots very small." (*Coues.*) Length, 5.00-5.20; extent, 7.75; wing, 2.50; tail, 1.75; bill, 0.38; tarsus, 0.62.

This is another exquisite, resembling the Magnolia in its yellow rump and yellow, black-striped under parts, but easily distinguished by the head-markings, especially the orange-brown auriculars; and possessing the additional charm of rarity in most parts of New England. The manner of its presence here is

as nearly as possible the same as that of the Black-and-yellow Warbler, excepting that the latter is common, while the Cape May is rare enough to be justly regarded by the collector as a prize wherever taken, unless it be in the rather restricted areas where numbers pass the summer. I am inclined to doubt that the Cape May has ever been known to breed in Massachusetts, or thence southward in New England; a record to such effect, given by Minot, being perhaps open to the suspicion that a nest and eggs of *D. æstiva* had been unwittingly taken for those of the rarer species. It enters New England with the Magnolias, and its periods of migration are the same; some years, and in some localities, it is more frequently observed than at other times and places. In the spring of 1872 I took a female at Amherst, and saw another. Mr. Sidney Dickinson secured a male and observed another individual the same year. In 1873 I shot a full-plumaged male, and heard of others that were taken — all upon apple-trees in orchards excepting one, which was secured in a small oak grove. These occurrences were between the 10th and 15th of May. Mr. Allen has obtained it at Springfield. According to Mr. Merriam, a few are taken in Connecticut each season, and it was not an uncommon bird about Suffield in 1876. It is said by Mr. Maynard to be common at Umbagog, in thick evergreen woods, where it keeps in the tops of the trees, and doubtless nests high up in the immense spruces and hemlocks of that vicinity; for females taken the second week in June bore marks of incubation. A nest found by Mr. H. B. Bailey on the Richardson Lakes, in northwestern Maine, was however in a low spruce, less than five feet from the

ground; it contained one egg. At Calais, Me., according to the excellent authority of Mr. Boardman, the bird is a common summer resident, and breeds. The eggs have been described as measuring 0.70 by 0.65 of an inch; with a bluish-white ground, with purplish and brownish blotches of several shades, chiefly wreathed about the larger end.

PRAIRIE WARBLER.

DENDRÆCA DISCOLOR (V.) *Bd.*

Chars. Above, yellow-olive, the back with a patch of brick-red spots; forehead, line over eye, two wing-bars, and entire under parts rich yellow; side of head with a V-shaped black mark, connecting with a chain of black streaks along the whole side of the neck and body; very large white tail-blotches occupying most of the inner web of the outer feathers. Sexes almost exactly alike. Young: Similar, the markings of the back and head less decided, or wanting. Small: length, 4.75-5.00; extent, 7.00; wing, 2.25; tail, 2.00.

Differing decidedly from most of the Wood Warblers in distribution, especially in the breeding season, this very neat and diminutive species is limited northward in summer by the Alleghanian Fauna, and is hence seldom if ever found beyond Massachusetts. Mr. Minot has indeed recorded a nest, found in northern New Hampshire, as that of the Prairie Warbler (*Am. Nat.*, ix, 1875, p. 520); but as he makes no allusion to it in his later work, the presumption is that there was some mistake. The bird enters New England early in May, and departs about the middle of September. It frequents low, scrubby woods, old fields and

pastures grown up to shrubbery, or patches of cedar and thickets of young pines. It is one of the most shy and retiring of the Warblers — one which would usually be passed unnoticed, were it not for its habit of incessantly darting into the air to capture passing insects, and for the very quaint and characteristic sounds it utters while snugly concealed in the shrubbery. The note is a monotonous and prolonged reiteration of single notes, rising in the scale from beginning to end, and growing louder and faster as it proceeds. The nest is placed in some bush or sapling growing in such resorts as I have indicated, usually a man's height or less from the ground. Several specimens obtained in Massachusetts are described by Dr. Brewer as being neat, compact, and elaborately woven structures, about $2\frac{1}{2}$ inches across outside, with a cavity of 2 by $1\frac{1}{2}$ inches; composed of soft inner bark, and other woody fibres, small leaves and plant-stems, plant-down, cocoons, and cobwebs, bound with cottony fibres and lined with horse-hairs, very fine plant-stems, and sometimes feathers. The eggs are said to be usually 3 or 4 in number, sometimes as many as 6; measuring about 0.65 by 0.50; they are white, marked with lilac, purplish and different shades of brown spots, mostly wreathing about the larger end. In New England the eggs are usually laid the first week in June, and not improbably a second set may be deposited in July. In the Southern States, where the Prairie Warbler is abundant in some places during the summer, eggs have been found from the first of May until the second week in June. In the southward extent of its breeding range, the species differs from most of its congeners.

YELLOW-THROATED WARBLER.

DENDRÆCA DOMINICA (L.) *Bd.*

Chars. Male, adult: "Upper parts uniform grayish-blue. Chin and throat bright yellow; under parts white. Forehead, and sometimes most of crown, lores, and cheeks, sides of throat, and numerous streaks on the sides of the breast, black. A stripe from the nostrils over and behind the eye, a crescent on the lower eyelid, the sides of the neck behind the black cheek-patch, and two conspicuous bands on the wings, white. Terminal half of the outer two, and terminal third of the third tail-feathers, white. Female almost precisely similar. Length, 5.10; wing, 2.60; tail, 2.30." (*Baird.*)

A very rare and casual visitor to Connecticut and Massachusetts. The earlier records of this species in New England are unsatisfactory, and not to be relied upon. (Cf. *Coues*, Pr. Essex Inst., v, 1868, p. 270; *Birds Northwest*, 1874, p. 66; *Merriam*, Rev. B. Conn., 1877, p. 17.) We have, however, authentic advices of later date. Mr. Merriam says (*l. c.*): "A rare accidental visitor from the South. Dr. Daniel Crary, of Hartford, Conn., writes me, that during fifteen years of bird collecting in that vicinity (in the Connecticut valley), he has secured several specimens of this rare species. Dr. E. L. R. Thompson also assures me that he has seen it about New Haven." Again, Mr. H. A. Purdie mentions a specimen captured by Mr. G. E. Browne, of Dedham, Mass., "on the banks of Charles River in that town nine or ten years ago" (*Bull. Nutt. Club*, iii, 1878, p. 146). The bird really belongs to the South Atlantic States, being rarely seen even in the Middle States, though recorded by Mr. Lawrence in his New York list.

YELLOW RED-POLL WARBLER.

DENDRÆCA PALMARUM (*Gm.*) *Bd.*

Chars. Adult : Above, brownish-olive, rump and upper tail-coverts brighter yellowish-olive, back with slightly dusky streaks ; crown chestnut-red ; line over eye and entire under parts rich yellow, the breast and sides with orange-brown streaks, as in *D. æstiva* ; no white wing-bars ; square white tail-spots at very end of only the two outer pairs of feathers. Young : An obscure dingy-looking bird, quite brownish above, like a young Yellow-rump ; but upper tail-coverts not pure yellow, and under tail-coverts often quite brightly yellow, in contrast with the dingy yellowish or whitish of other under parts ; generally a trace at least of chestnut on the crown ; no white on wings ; tail-spots peculiar, as in the adult. Length, 5.25 ; extent, 8.25 ; wing, 2.50 ; tail, 2.25.

Note. On geographical variation in *Dendræca palmarum*, with description of a new variety, *hypochrysea*, and on the occurrence of the western variety in New England, see *Ridgway*, Bull. Nutt. Club, i. 1876, p. 81 ; *Deane*, *ibid.*, 1879, pp. 60 and 186. According to Mr. Ridgway, his new variety is the ordinary bird of New England, where typical *palmarum* is rare.

The Red-poll differs decidedly from any other Warbler in the manner and character of its presence in New England, and conspicuously in habits. It comes to us the earliest of all excepting the Pine-creeping, and stays later than any other excepting the Yellow-rump, of course, which remains all winter. It nests on the ground, unlike any other *Dendræca* ; is quite terrestrial in habits, like a Titlark, for example, and haunts fields and roadsides, often in company with troops of Sparrows ; the anomalous combination being heightened by certain Flycatcher-like actions, which are highly characteristic of this interesting bird. It reaches New England early in April, or at furthest by

the middle of that month, and passes on with little delay through the Alleghanian Fauna, being scarcely seen in Massachusetts after the first few days in May. Returning in September, it lingers leisurely through that month, all of October, and part of November, before taking its final departure. Like the Pine-creeping and Yellow-rump, it is a Warbler which may be associated with frozen ground and snow-storms, and there is just a suspicion that it may be found, at times, the winter through. Thus Mr. Merriam: "Along with *D. pinus* and *D. coronata* it may be seen, in spring, long before the hosts of other Warblers make their appearance. It is also one of the last to depart in the fall, at which time it is found along fences, and among low bushes, by the roadside, and in open fields. In early spring, before the snow has quite all disappeared, large numbers of them may sometimes be seen, in company with the English Sparrows, running about on the plots of bare ground, and the roots of the elm-trees, on the City Green, in the heart of New Haven. In fact, they seem to pay but little attention to the weather, as may be seen from the circumstance that they were really abundant on the 18th of April, 1875, at a time when the ground was covered with snow nearly a foot deep, with only here and there a bare spot; while none were seen this season (1877) till April 13th, notwithstanding the fact that the ground had been bare since the latter part of March, and the weather unusually mild." (Rev. B. Conn., 1877, p. 18.)

The species breeds for the most part far to the north, and is entirely restricted southward in the nesting season by the Canadian Fauna; being so rare in sum-

mer, even in most parts of northern New England, that we long lacked authentic advice of its breeding in our limits. Mr. Boardman, however, calls it one of the common Warblers at St. Stephen's, N. B., on the border of Maine, where it breeds. A nest and eggs collected by him have been described as follows: "The nest was placed on the ground. It is constructed loosely, first of stalks of weeds and grasses, then are laid pieces of moss, caterpillars' silk, fine grasses, and hairs, and the whole is deeply hollowed, and lined with fine roots and pine leaves. Two eggs in the nest are of a delicate white, with a faint roseate tint; they are marked at the larger end with fine spots and blotches of reddish-brown. They are about the size of the eggs of the Blue Yellow-backed Warbler, being .61 by .50 and .62 by .51 of an inch."

PINE-CREEPING WARBLER.

DENDRÆCA PINUS (*Wils.*) *Bd.*

Chars. Above, uniform yellow-olive; below, yellow, shaded on the sides, paler or white on belly and under tail-coverts; supraciliary line yellow; wing-bars white; tail-blotches large, oblique, confined to two outer pairs of feathers. The female and young are similar, but duller colored; sometimes merely olive-gray above, and dingy white below; and in such state the species is the most sordid-looking of the Warblers, without any special body-markings, but with a light supraciliary line, wing-bars, and the peculiar tail-spots. It is one of the largest species, 5.50 to nearly 6 inches long; extent, 8.50 or more; wing, 3.00-3.25; tail, 2.25; bill, 0.42; tarsus, 0.70.

This is a large, plain bird, for a member of the Warbler family, with little of the delicacy and orna-

ment for which most of its relatives are so justly famed. Like the species last described, it is notable for the promptness with which it leads the van of the Warbler hosts in spring. It sometimes enters New England even in March, and has been seen near Boston on the 1st of April; while it is frequently to be observed early in the latter month, when the ground is always liable to be covered with snow. Not like the Red-polls, however, which seem to be anxious to get a good start on their way far north, the Pine-creepers linger so readily to breed in any part of New England, that we wonder what makes them in such a hurry to get there. There seems to be no reason for their haste, particularly as they are birds which breed all along the Atlantic coast of the United States, at least as far south as the Carolinas. Their character of "early birds" indeed is further attested by the fact that in South Carolina the eggs are laid in March, and young are abroad by the second week in April. The same precipitation marks their autumnal movements; for they nearly all leave New England in September, seldom lingering into October, and never, like the Red-polls and Yellow-rumps, taking their chances of November weather.

These rather curious birds, so marked in their traits of character, are greatly attached to the coniferous trees to which they owe their name, being seldom found in any other than evergreen woods, even when not breeding; and the nest is almost infallibly placed in the pines or cedars. Their summer range in New England is rather characteristic of the Alleghanian than of the Canadian Fauna, and the species is hence more numerously represented in Massachusetts and

southward than in the recesses of northern forests. The nidification of the Pine-creeper is described as essentially like that of the Black-throated Green Warbler, but the nest is built much earlier—some time during May, and the eggs are usually laid before the 1st of June. These are commonly 4 in number, measuring about 0.70 long by 0.52 broad; they are white, pink-tinted, and spotted with different shades of reddish-brown, and with lilaceous shell-markings, tending to aggregate at and near the greater end.

In its habits this bird shows a combination of Warbler, Creeper, and Flycatcher traits, with some others scarcely shown by any *Dendræca* excepting the Red-poll. It is fond of scrambling about the trunks and larger limbs of the pines, like a Nuthatch, at times sallying after flying insects, at others descending to forage upon the ground. Thus Mr. Merriam speaks of its being frequently seen in the City Green in New Haven, hopping over the ground with the Red-polls and English Sparrows, and running up and down the trunks of the elms; and Mr. Minot has observed the same thing. When not breeding it is somewhat gregarious, often collecting in troops, and associating with Red-polls and Yellow-rumps, as well as with various other small birds. The song is simply a succession of trilled notes, all pitched in a single key, and delivered in a listless manner, as if the performer cared little for effect. Nearly all our "Warblers," in fact, are misnamed, if we are to take the term as any indication of proficiency in that kind of vocalization which we commonly call "warbling."

GOLDEN-CROWNED ACCENTOR; OVEN-BIRD.

SIURUS AURICAPILLUS (L.) Sw.

Chars. Above, uniform olive-green, the crown with an orange-brown patch bordered with black stripes; no light supraciliary line; below, pure white, thickly spotted with dusky on the breast and sides; wings and tail like back, unmarked; under wing-coverts tinged with yellow; a white eye-ring; legs flesh-color. Differs little with sex or age. Length, 5.50-6.50; extent, 9.50; wing, 3.00; tail, 2.70; bill, 0.50; tarsus, 0.85.

The pretty and engaging "Oven-bird," so called from the way it has of roofing over its nest, is a common summer resident of New England, perhaps more abundant in southern portions than in the recesses of the northern woods and mountains. It arrives the last of April, and usually reaches Massachusetts the first week in May; all through which month the woods and thickets echo



FIG. 36.—GOLDEN-CROWNED ACCENTOR.
(Natural size.)

to the loud accelerated chant with which the bird proclaims the nuptial season. So incessantly and obtrusively are these monotonous notes given forth, that the luxurious song of the mating pairs long remained unknown to naturalists, and the bird was denied that reputation of eminent musical ability to which it is not less entitled than the Louisiana Water Thrush itself. The shrill *wee-chee wee-chee* may be heard almost any time during the summer while the birds are breeding, but the real song is probably only uttered during the pairing time. The birds linger in their

accustomed haunts all through the summer, passing southward in September and October, by the middle of which month all have left our country — they are rather delicate creatures, which would fare sadly in the severities of a New England November. The nest is placed on the ground, usually in dry, leafy woods, but sometimes in low moist places; but they are not very particular in this respect, and may be seen rambling daintily over the ground, among the fallen leaves, in almost any kind of cover. They walk very prettily, with a certain nonchalance, as if only sauntering for their amusement; now furtively examining the pathway in search of food, now turning a curious but quiet eye upon an intruder; and when alarmed fly directly to some low perch in a tree, where they sit in silent but watchful purpose. The nest is often but not always roofed over, as already said; it is a rather bulky structure of dried leaves and grasses, lined with hairs or fine grass-stems. Though artfully hidden, it is often found to contain the Cow-bird's egg. The eggs are usually four in number, sometimes five, and I have found six in the nest; they are pure white or slightly creamy, more or less thickly and uniformly covered with reddish-brown surface-spots and lilac shell-markings — the whole surface being sometimes dotted, though the spots, particularly the larger ones, tend to aggregate at or about the larger end. The eggs vary in size from 0.80 to 0.90 in length by 0.60 to 0.70 in breadth, and are usually to be found early in June. After a very brief interval the young birds put on a livery so nearly like that of the parents, that it is not always easy to distinguish them.

NEW YORK ACCENTOR; WATER THRUSH.

SIURUS NÆVIUS (*Bodd.*) *Coues.*

Chars. Above, dark olive-brown, quite uniform over all the upper parts, including the crown; supraciliary line and entire under parts whitish, or pale sulphury-yellow, without any buffy tinge, thickly and sharply spotted with the color of the back, except on the lower belly and under tail-coverts; no markings on wings or tail; feet dark. Sexes alike, and young similar. Length, 5.50-6.00; extent, 8.50; wing, 2.75; tail, 2.25; bill scarcely or not 0.50.

Being a species of the widest distribution in North America, the Water Thrush is found in all suitable situations in New England, where it is a summer resident, and more or less abundant according to circumstances in no way connected with geographical or Faunal areas. Unlike the chorister at whose haunts and habits we have just glanced, the Water Thrush claims rightfully such name by its fondness for the liquid element, being most at home in the swamp, the bog, the tangled brake, whose recesses we cannot penetrate without fatiguing exertion. It is probably on account of such partiality that the bird is more abundant in summer in the sphagnous swamps and gloomy woods of northern New England than in other parts of this country. When on its way to and from such resorts, it may be found more at large about the pools in any wet woodland, but it seldom if ever nests except in the situations described. Upon the ground or its equivalent is built a bulky nest of mosses, especially the *Hypnum*, mixed with more or fewer leaves and grasses, and lined with slender rootlets; the different colors of these materials sometimes contrasting finely with each other and with the crys-

tal purity of the eggs. The latter are from four to six in number, brilliantly white, marked with reddish-brown, darker brown, and lilac spots, sometimes profusely and evenly distributed over the whole surface, when they are mostly mere dots, sometimes larger spots being confluent wreathed at or about the greater end of the egg. Specimens measure from 0.75 to 0.83 in length by 0.58 to 0.60 in breadth. They are laid early in June. The different nature of its haunts aside, the Water Thrush has much in common with the Oven-bird in its habits and traits; its song is loud, clear and melodious, and nothing like the peculiar chant of the Oven-bird is heard from this shy recluse of the swamp. It walks very prettily over the ground with mincing steps, frequently arrested to indulge its characteristic habit of see-sawing the tail like a Titlark or Spotted Sandpiper; and is ready at a moment's alarm to disappear on rapid wing in the fastness of the swamp. Though it comes to us in the spring at about the same time that the Golden-crown arrives, it lingers later in the fall, not taking final departure until the latter part of October.

LARGE-BILLED ACCENTOR; LOUISIANA WATER THRUSH.

SIURUS MOTACILLA (V.) Coues.

Chars. Like the last species; larger, averaging about 6.00 in length, the wing 3.00, the bill especially larger — over 0.50 in length; tarsus nearly 1.00. Under parts white, more or less tinged with buff, especially posteriorly, but never sulphury-yellow; the streaks sparse, pale, and not very sharp, leaving throat, belly, and crissum unmarked; feet pale.

Dr. Coues formerly spoke of this species as one which "doubtless occurs in summer, although it has never, I believe, been actually detected in New England" (Pr. Essex Inst., v, 1868, p. 271); citing in support of his views the occurrence of the bird near New York as recorded by Mr. Lawrence (Ann. Lyc. N. Y., viii, 1866, p. 284). The pertinence of this inference has since become evident. The bird is properly one of the Carolinian Fauna, reaching its normal northern limit in the lower Connecticut valley, where it breeds in some numbers; but it has also been known to occur considerably further north. In his "Notes on the Rarer Birds of Massachusetts" (Am. Nat., iii, 1870, p. 577), Mr. Allen records the capture of a specimen on Mount Tom, April 28, 1869. The bird has also been taken in Maine; at Norway, in May, 1865, by Mr. Irving Frost, and at Waterville, the same year, by Prof. Hamlin. In Connecticut it is a regular summer visitant, breeding in considerable numbers in that State. Mr. Ernest Ingersoll found the first nest to be recorded for New England, at Norwich, Conn., in June, 1873. It was sunk in the ground at the foot of a large tree, concealed by the roots, and contained four fresh eggs. These measured 0.75 to 0.80 in length by 0.60 to 0.62 in breadth, and were white with a rosy tint, dotted and with a few zigzag markings of two shades of reddish-brown, umber, and lilac. These eggs were more nearly spherical than those of the Oven-bird, with a more polished crystalline surface, and more distinct markings. Mr. Jencks has found the bird in several instances in Rhode Island, as recorded by Mr. Deane (Bull. Nutt. Club, v, 1880, p. 116). For southern Connecticut, as Mr. Merriam

says, the facts have become so well established that it would be superfluous to cite all the recorded instances of its capture. I may, however, refer to Mr. Purdie's observations (Bull. Nutt. Club, i, 1876, p. 73, and ii, 1877, p. 16), as well as to Mr. Merriam's own (Rev. B. Conn., 1877, p. 20). The last-named writer speaks of the earliness of the bird both in arriving and in nesting; having observed it on the 27th of April, and been informed that an individual shot May 17th was about to deposit an egg. Mr. J. N. Clark, of Saybrook, informs me that he has taken two nests, one with five and the other with six eggs, besides finding some containing young, which latter are usually hatched before May 25th. The favorite nesting-site, according to this gentleman, is among the upturned roots of a fallen tree.

CONNECTICUT WARBLER.

OPORORNIS AGILIS (*Wils.*) *Bd.*

Chars. "Olive-green, becoming ashy on the head; below, from the breast, yellow, olive-shaded on the sides; chin, throat, and breast brownish-ash; a whitish ring round eye; wings and tail unmarked, glossed with olive; under mandible and feet pale; no decided markings anywhere; 5.50; wing, 2.75; tail, 2.00. In spring birds the ash of the head, throat, and breast is quite pure, and then the resemblance to *Geothlypis philadelphia* is close; but in the latter the wings are little if any longer than the tail. In the fall the upper parts from bill to tail are nearly uniform olive." (*Coues.*) The full-plumaged male in spring is said to closely resemble *Geothlypis philadelphia*, "both in the deep ash of the throat and breast (which is almost black where it joins the yellow below), and in the shade and limited extent of the yellow of the belly. The ring round the eye, however, is well marked, and pure white." (*Merriam.*)

Notwithstanding the abundance of this bird at times in the fall, in southern New England, it is usually a rare migrant, especially in spring, and its breeding resorts, as well as the nest and eggs, are unknown. There is something to be discovered, respecting its migrations, which makes it so excessively rare in spring, compared with its numbers in autumn; also respecting its breeding range, the bird being a well-known migrant through Connecticut and Massachusetts, yet without New England record beyond these States. The facts, when known, will doubtless be mutually explanatory. It seems probable that this, like some other species, takes different routes in going to and from its breeding-grounds. While it is unsafe to theorize in such cases, we may conjecture that the distribution and migrations agree to some extent with those of the Mourning Warbler, *Geothlypis philadelphia*, which is a rare bird in most localities in the Atlantic States, but very abundant in Minnesota and along the eastern border of Dakota, in the breeding season. The Connecticut Warbler is chiefly seen with us in September and early in October, during which periods great numbers have been taken in Massachusetts some years. It is a quiet bird, of retiring disposition, liable to pass unnoticed unless specially sought for — the more so, because it frequents preferably low, swampy places, and keeps near the ground. Few persons have ever heard the song of this retiring and fugitive bird. It is described as pleasant, though a little harsh, and somewhat resembling that of the Maryland Yellow-throat; being forcibly delivered in a clear ringing tone.

KENTUCKY WARBLER.

OPORORNIS FORMOSA (*Wils.*) *Bd.*

Chars. "Clear olive-green; entire under parts bright yellow, olive-shaded along sides; crown black, separated by a rich yellow superciliary line (which curls around the eye behind) from a broad black bar running from bill below eye and thence down the side of the neck; wings and tail unmarked, glossed with olive; feet flesh-color; $5\frac{3}{4}$; wing, $2\frac{3}{4}$ -3; tail, $1-2\frac{1}{4}$. Young birds have the black obscure if not wanting; in the fall, the black feathers of the crown of the adult are skirted with ash."

A valuable contribution to the biography of this bird will be found in the record of its breeding at Sing

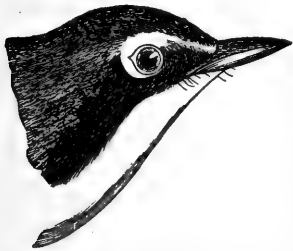


FIG. 37.—KENTUCKY WARBLER.
(Natural size.)

Sing, N. Y., June 19, 1875, where a specimen was shot, a female seen, and a nest and three eggs were taken by Dr. A. K. Fisher (*Am. Nat.*, ix, Oct., 1875, p. 573). It was also found by Mr. J. Wallace, as recorded by Mr. E. P. Bicknell, during the breeding season, at Fort Lee, N. J., and

some years since a nest and five eggs, with the female, was taken there (*Bull. Nutt. Club*, iii, July, 1878, p. 130).

In those portions of the United States where the Kentucky Warbler is numerous, it will be found to haunt shrubbery, or the dense undergrowth of luxuriant woods, often among piles of fallen logs or other *débris*, and to keep near the ground, where, like a *Siurus*, and unlike most Warblers, it walks very

prettily. Its loud clear song is said to resemble that of the Mourning Warbler with the first two syllables omitted. Mr. Brewster calls it altogether one of the best Sylvicoline performances he has heard.

[The first and so far the only New England record is that given by Mr. Merriam (Rev. B. Conn., 1877, p. 22), who says that a male was procured by Mr. E. I. Shores, at Suffield, Conn., August 16th, 1876. Mr. Merriam adds: "I am aware that Dr. Coues, in his 'Birds of the Northwest' (p. 73), states that the species occurs 'north to the Connecticut Valley,' but on what authority I am unable to surmise. Perhaps the learned Doctor's knowledge of the distribution of birds, and of that something in their hearts which oftentimes causes those inexplicable peregrinations, together with his marvelous power of intuition, told him that it did occur in the Connecticut Valley, and had long been waiting to be discovered by Mr. Shores. Indeed, nearly ten years ago, Dr. Coues prophesied that 'the occurrence of this species as a rare or casual summer visitor in southern New England is confidently to be anticipated,' and it is an old saying, that probabilities become facts if only given time enough." I am much obliged to my respected young friend for this neat compliment, and quite agree with him, as far as modesty allows me to do so. "My prophetic soul" being at ease now, in this and many like cases, I can confidently commend to him the study of Faunal areas, as tending to "marvelous" sharpening of "intuitions," and insuring peace of ornithological mind.—C.]

MARYLAND YELLOW-THROAT.

GEOTHYLPIS TRICHAS (L.) Cab.

Chars. Male, adult: Above, olive-green, rather grayer anteriorly and brighter on rump; forehead and broad band on side of head pure black, bordered above by hoary-ash; under parts, including under wing-coverts and edge of wing, rich yellow, fading to whitish on the belly; wings and tail dusky, unmarked, glossed with olive-green; bill black; feet flesh-color. Female: Without the black and ash on the head, the crown quite brownish, an obscure supraciliary line, and the yellow of the under parts pale and restricted; smaller than the male. Young: Resembling the female in lacking distinctive head-markings, and often quite buffy or tawny instead of clear yellowish. In any plumage, the bird may be known by the shortness of the wings, these being usually less in length than the tail, at most equal to it, and by lack of any clear ash on the throat. In the fall and winter the adults resemble each other, and both show much of the buff tinge which the young exhibit. Length, 4.75-5.00; extent, 6.50-6.75; wing and tail, each, 1.90-2.10.

Any shrubbery in New England may be tenanted all summer long by this pretty and sprightly little creature — perhaps the most abundant of all the Warblers of our country, not even excepting the Yellow-bird, and one which has the most complete distribution throughout the three Faunæ represented within our limits. Being one of the "Ground Warblers," and hence differing notably in its haunts and habits from any of the beautiful *Dendroica* genus, it resembles a Wren in its fondness for bush and brier, the covert brook, the undergrowth of woodland, and the tangle that shadows the swamp. Like many other birds of the bush, whose hidden haunts inspire a feeling of safe seclusion, but do not afford a very good view of what is going on, the Yellow-throat shows in its actions/to-

ward man that very engaging combination of shyness, assurance, and curiosity which are betrayed by a timid child in meeting the advances of a stranger. On approaching the cover, one is sure to be saluted with the sprightly *whit'-ti-ti, whit'-ti-ti* of the vivacious bird, and will probably see the performer, absorbed in his ditty, upon the outer wall of his leafy retreat; curiosity or preoccupation may detain the singer for a few moments, but he is likely to duck out of sight and reappear at some safer distance, or send his greeting with a mocking accent from some hidden recess of the shrubbery. The female keeps more closely in seclusion, threading her furtive way close to the ground, and is much more rarely observed than her sprightly mate. The bird announces its arrival with characteristic notes about the beginning of May, but is silent in the fall, when it lingers late amid the rustling of dry and brittle underwood, and the rasping of withered reeds; it is generally November before the final departure for the South, though few remain after September, except in favored southern localities. The nest is not easy to find, notwithstanding the abundance of the birds, and the fact that they rear two broods, being built on the ground, snugly tucked under the foot of a bush or tussock of rank grass, and sometimes partly roofed over, like the Oven-bird's. It is not remarkable for elegance or even neatness, — ground-nests seldom if ever are, — being simply constructed of dry leaves, grasses, and miscellaneous vegetable



FIG. 38. — MARYLAND YELLOW-THROAT. (Natural size.)

substances, lined with fine fibres and sometimes hair. The eggs are laid late in May or early in June, and again in July. They differ from the usual run of Warbler eggs in being much more sparingly spotted — having sometimes scarcely any markings, but usually being very thinly dotted, and mostly on the larger part, with several shades of brown. The markings are very irregular, in size, number, and tint; among the little points a few blotches of larger size are commonly found. The ground is usually clear white, sometimes faintly creamy. Such is the character of a dozen specimens before me as I write. The size of the egg is not less variable than the markings, averaging about 0.70 by 0.55.

MOURNING WARBLER.

GEOTHELYPIS PHILADELPHIA (*Wils.*) *Bd.*

Chars. Above, clear yellowish-olive, shading to ashy on the head; under parts bright yellow, the throat and breast more or less perfectly black, according to perfection of coloring; usually black, veiled with gray or ashy fringing of the individual feathers, producing an appearance of the bird's wearing crape, whence the name "Mourning Warbler"; wings dusky, glossed with the color of the back, not marked with white; no white on eyelids; under mandible and feet flesh-color. Young birds have little or no black, and no ashy, on the head; they thus closely resemble *Oporornis agilis*, from which the generic characters of comparative length of wings and tail serve to distinguish them. Length, 5.25-5.50; wing and tail, each, about 2.25.

The "Mourning" Warbler — gay and agreeable as a widow who finds the "peace that passeth all understanding" in the consciousness that her weeds are becoming — is sufficiently rare in southern New Eng-

land for every collector there to be glad to make its personal acquaintance. It is only known to occur there as a migrant in spring and fall, chiefly May and September; and it is rather a late arrival, in the rear of most of the Warblers. The case is different in the Canadian Fauna, where the bird breeds, and quite plentifully in some localities in Vermont, New Hampshire, and Maine. Mr. Maynard, for instance, found it common at Umbagog in June. Still it is locally distributed even in its native Fauna; Mr. N. C. Browne mentions the taking of specimens at Portland as an event of unusual occurrence. I should not be surprised to hear of its occasional nesting in Massachusetts. The general habits of the bird are those of the Maryland Yellow-throat; but it does not hug the shrubbery so closely, at least in the mating season, when the male may be observed in the tops of the trees in mixed woodland, where the undergrowth is convenient for hiding, singing a bright hearty song. At such times the female is very secretive, being seldom observed. The nest and eggs, of which little is yet known, are said to resemble closely those of the Maryland Yellow-throat. The Mourning Warbler, like a few other species not less characteristic of the Eastern Province of North America, is nevertheless not so common a bird in any of the Atlantic States as in the interior of the country. It is one of the most abundant Warblers in summer in Minnesota and Dakota, along the Red River of the North, where the great woods are vocal with its refrain in June. This consists of five or six notes, simply warbled, with a rising inflection of the voice on the first three, and then a cadence.

YELLOW-BREASTED CHAT.

ICTERIA VIRENS (*L.*) *Bd.*

Chars. Above, rich olive-green ; below, brilliant yellow, the belly and vent abruptly white ; lores black, separating white supra-ciliary and maxillary lines ; under eyelid white ; wings and tail unmarked, glossed with the color of the back ; bill blue-black, part of under mandible sometimes pale ; feet livid bluish. Female and young quite similar, not so brightly colored. Largest of the family : length, 7.00 to 7.50 ; extent, 9.00 or more ; wing and tail, each, 3.00-3.25 ; bill, 0.52 ; tarsus, 1.12.

This eccentric and assertive character is not displayed to full advantage in New England, where the remarkable bird is neither abundant enough to be very



FIG. 39. — YELLOW-BREASTED CHAT.
(Natural size.)

well known, nor of any wide distribution. It is characteristic of the Carolinian Fauna, and hence chiefly confined to portions of Connecticut ; it also occurs, however, in Massachusetts, and an instance of its presence in

New Hampshire has been noted. A nest with four eggs was secured at North Conway in that State, in 1877, as recorded by Dr. Brewer (*Pr. Bost. Soc.*, xix, 1879, p. 303). Mr. Allen reports the bird as a rare summer resident in Massachusetts, and there are several records of its breeding in the eastern part of that State. In 1833, indeed, Prof. Emmons attributed it to Massachusetts, as an "occasional visitant ;" and up to 1873, at least four nests had been found in

the vicinity of Lynn. In Connecticut, as would be expected, the Chat is a regular summer visitor, and Mr. J. N. Clark has found it nesting constantly at Saybrook. It arrives early in May, and departs in September. It inhabits shrubbery, and in fact any kind of undergrowth; the nest being built in a thick bush, generally but two or three feet from the ground, of withered leaves, dried grasses, strips of bark and the like, lined with fine fibres. The eggs, to the number usually of three or four, have a brilliant white ground and polished surface; but the markings, as shown by a series of over twenty before me, are too variable to be readily described. As a rule, the eggs are thickly and pretty evenly spotted and blotched with several shades of reddish-brown, with the usual lilac under-markings, the tendency being, however, to aggregation toward the larger end; some specimens are only minutely dotted, and with paler purplish-brown spots. The variation in size and shape is equally great, the average being perhaps 1.00×0.80 . The bird is extremely vivacious when pairing, and noted for the brilliant song it executes at such times, with many aerial evolutions and other extravagant actions. It is an expert ventriloquist, and very cunning in misleading one as to its whereabouts when hiding in the bushes. Notwithstanding its large size and bright color, the Chat would oftenest pass unnoticed, so sedulous is it of concealment, were it not betrayed by the rich, voluble song, and the frequent display it makes on wing. Among its many eccentricities, it has a fondness for keeping late hours, and on moonlit nights its riotous serenades often startle more orderly birds from their slumbers.

HOODED WARBLER.

WILSONIA MITRATA (*Gm.*) *Bp.*

Chars. Above, clear yellow-olive ; below, rich yellow shaded on sides ; whole head and neck jet black, enclosing a golden-yellow mask across forehead and along sides of head ; wings plain, glossed with the color of the back ; tail with large white blotches on two or three outer pair of feathers ; bill black, with well-developed rictal bristles ; feet flesh-color. Female in full plumage similar, but the black hood restricted or imperfect. Immature specimens want the black entirely, the parts concerned being colored to correspond with upper and under parts ; or have it in various stages of incompleteness. The general coloration, with the strong bristles of the gape, and Flycatcher-like bill, should however prevent misunderstanding. Length, about 5.25 ; extent, 8.50 ; wing, 2.75 ; tail, 2.25.

Being characteristic of the Carolinian Fauna, the elegant Hooded Warbler is chiefly confined to Connecticut, so far as New England is concerned. Since Dr.



FIG. 40. — HOODED WARBLER.
(Natural size.)

Coues, writing in 1868, said, from the data then at his disposal, that it was a "very rare, and perhaps accidental, visitor to more southerly portions," it has been found in considerable numbers in Connecticut, in some parts of

which it breeds abundantly. The species appears to have been first attributed to that State by Linsley, in 1843, having been found there in June by Dr. Whelpley. There have been occasional references of the bird to Massachusetts, perhaps not well at-

tested, but an unquestionable instance of such occurrence has lately been given by Mr. Deane (Bull. Nutt. Club, v, 1880, p. 117). Mr. Merriam has supplied our most extended and valuable notes on the subject, derived from observations made in Connecticut. As noted by Mr. H. A. Purdie (Am. Nat., vii, 1873, p. 692), the Hooded Warbler was found by Mr. J. N. Clark to be abundant at Saybrook, "in dense woods, breeding everywhere in suitable places, always in a low laurel (*Kalmia*) bush." (See, also, Mr. Purdie's remarks in Bull. Nutt. Club, i, 1876, p. 73, and ii, 1877, p. 21.) The bird probably comes to New England in May, and takes its departure in September.

GREEN BLACK-CAPPED WARBLER.

WILSONIA PUSILLA (*Wils.*) *Bp.*

Chars. Above, clear yellow-olive, the crown glossy black, the forehead, sides of head, and all under parts bright yellow; wings and tail unmarked, glossed with the color of the back; under mandible pale. In female and young birds the black cap is obscure or wanting. Very small: length, 4.75-5.00; extent, 7.00; wing, 2.25; tail about 2.00. Bill Flycatcher-like, with strong bristles, as in other species of the genus.

Too little is known as yet of the breeding resorts and habits of this dainty bird to enable me to speak with assurance of the species as a summer resident in New England. It occurs, however, in that character in Maine, and doubtless also in New Hampshire and Vermont, being apparently limited in its southward range in the breeding season by the Canadian Fauna. It goes north to the Arctic regions, having been found nesting in Alaska, for instance. Eggs from the Yukon

River, to the number of four to a set, are white, finely dotted with reddish-brown, chiefly at the greater end. The nest is said to be built in bushes, near the ground. Wilson's Black-cap is a migrant in southern



FIG. 41.—GREEN BLACK-CAPPED WARBLER. (Nat. size.)

New England, where it arrives early in May, and departs probably in September; it is found in mixed woods and shrubbery, quite numerous in some localities, more rarely in others. It is one of the few birds commonly observed in New England respecting whose nesting we have still much to learn. [*]

[* Just in the nick of time, as this page is going into the metal, I receive the greatly desired information respecting the nest and eggs of Wilson's Black-cap, from Mr. H. D. Minot, who writes me respecting the breeding of the species in Colorado. His interesting and timely observations were made at Seven Lakes, on Pike's Peak, a dozen miles from Manitou, about 11,000 feet in altitude, and near timber-line.

" . . . I devoted the morning of June 22d to finding the nest and eggs of Wilson's Black-cap, which I confidently expected would be in a bush. Being attracted by the songs of the birds to a bushy swamp, where they were numerous, I ransacked it thoroughly, and finally started a female from a bush. I dropped upon my knees without much faith, — not to pray, but to watch, — and was soon rewarded for my humility. The nest was found at the edge of the swamp, on the ground, under a low, spreading branch of dwarf willow, and beneath an almost natural archway of dry grasses, opening toward the south. It was composed outwardly of shreds loosely set in a hollow, and inwardly of fine grass-stalks, with a few hairs. It measured $2\frac{1}{2}$ inches across inside, by half as much in depth. The eggs were five in number, about 0.60×0.50 in size, and dull whitish in color, thickly freckled with dark rusty brown and some slight lilac markings, and with some blotches at the larger end, — in three cases on the crown, and in two about it. The swamp was too extensive to beat over thoroughly, and I did not succeed in finding another nest, nor in putting up another female. The males which

[*Wilsonia minuta*. "Small-headed Flycatcher." An unknown species, conjectured to belong to this genus, and repeatedly attributed to New England. — Berkshire County, Mass., *Peabody*, Rep. Birds Mass., 1839, p. 297; *Putnam*, Pr. Essex Inst., i, 1856, p. 226. — Salem, Mass., *Nuttall*, Man. Orn., i, 1832, p. 297. — Ipswich, Mass., *Brewer*. — Mass., "doubtful," *Allen*, Pr. Essex Inst., iv, 1864, p. 83. — New England, "rather an apocryphal species," *Coues*, Pr. Essex Inst., v, 1868, p. 275. — Wenham, Mass., without comment, *Brewer*, Pr. Bost. Soc., xvii, 1875, p. 440! The name has dropped out of most of the recent lists, and should not be restored without good authority. — C.]

CANADIAN FLYCATCHING WARBLER.

WILSONIA CANADENSIS (L.) *Coues*.

Chars. Above, ashy-blue; crown with many black arrow-heads, crowded anteriorly; a slight line on forehead, short supraciliary line, edges of eyelids, and whole under parts, excepting the white under tail-coverts, yellow; lore black, continuous with a black stripe along side of head, connecting with a chain of black marks down side of neck and then prettily encircling the throat like a necklace; wings and tail unmarked; feet flesh-color; bill blackish. Female and young similar, the black markings obscure or restricted, the upper parts more or less glossed with olive. Bill and strong rictal bristles as in other species of the genus. Length about 5.35; extent, 7.75; wing, 2.50; tail, 2.25.

I saw, perhaps a dozen in all, kept much together, as if they were a colonial troop, fluttering through the shrubbery, fly-catching very little, touching the ground occasionally, and often having their playful quarrels. Their faces and cheeks were of the richest golden yellow, much of the bill being of the same color; and their song was different from that of the Eastern bird, as I recall it. They were, I take it, of the Western variety (*pileolata*). — C.]

A common summer resident of New England, arriving early in May, and leaving in September. It breeds more numerous in the Canadian Fauna than elsewhere, and this appears to be the limit of its northward dispersion. It has been supposed to be confined to this Fauna in the breeding season, but such proves not to be the case, various nests having been found in Massachusetts, and the birds themselves all through the summer in Connecticut. A nest taken with eggs in Lynn, Mass., was placed on the ground at the foot of a grass-clump, in a low swampy piece of ground,



FIG. 42. — CANADIAN FLYCATCHING WARBLER. (Nat. size.)

and was built almost entirely of the needles of the white pine, so loosely disposed that it was found necessary to sew them together in order to preserve the structure. The eggs were five in number, white, irregularly marked with dots and small blotches of reddish-brown, after the usual fashion of Warbler eggs, measuring 0.75 by 0.56 of an inch. Another ground-nest, at first supposed to belong to the Red-bellied Nuthatch, but afterward identified as probably built by the present bird, has been described by Mr. F. H. Nutter (*Am. Nat.*, xi, 1877, p. 565; xii, 1878, p. 397); this was from West Roxbury, Mass. Such method of nesting seems to be common to all our members of the genus *Wilsonia*, or *Myiodiactes*, as of the genus *Helminthophaga*; being very different from the case of *Setophaga*.

REDSTART.

SETOPHAGA RUTICILLA (*L.*) *Sw.*

Chars. Male, in full plumage : Glossy blue-black ; belly and breast white ; sides of breast, lining of wings, bases of nearly all the wing-quills and tail-feathers, flame-color ; this rich orange making a conspicuous spot on the wings, and forming a transverse outline with the black on the tail ; bill and feet black. Female : Olive-gray or brownish where the male is black, and clear yellow where the male is orange. Young males at first resemble the female, and later, in the progress to mature coloration, show every gradation in color between the two sexes, being often irregularly patched with black feathers. (For details of changes of plumage, see *Coues*, B. Col. Vall., p. 339.) Length, 5.00-5.50 ; extent, 7.50-8.00 ; wing and tail, 2.25-2.50 ; bill, 0.35 ; tarsus, 0.65.

The lovely Redstart, not less famous for its richness of dress than the Blackburnian Warbler, and a bird further conspicuous by its incessant activity and great vivacity of manner, is a common summer resident throughout New England. It reaches this country about the first of May, soon becomes generally dispersed, and breeds in all suitable situations, retiring late in September. It is one of the most active and adroit of flycatchers, continually sallying forth in the air to capture small winged insects with a sharp click of the bill, or chasing them hotly along the limbs of trees, when its gleaming colors are fully displayed, and flash in contrast with the green foliage. The song is hearty, though quaint and not very musical, and the bird seems very fond of exercising its vocal powers. There is dash and spirit in everything it does ; and what with singing, courting, quarrelling, and foraging for food, the nervous Redstart seems never at

rest. Early in June the nest may be sought, in mixed woody groves, in the fork of a shrub or sapling, from five to twenty feet from the ground. It is a neat, compact structure, composed of bark-strips, grasses, and miscellaneous material, lined with fine grass-stems, thistle, fern, or other plant-down, sometimes with horse-hair, caterpillars' silk, or spiders'-web. The whole fabric may be stuccoed as well as lined with such soft substances. The eggs are four or five in number, and measure from 0.58 to 0.68 in length by 0.48 to 0.52 in breadth. They are white, usually heavily spotted, especially on the larger part, with dull or pale brownish surface-markings of several shades, together with the usual shell-spots of purplish or lavender — the latter being simply brown spots in, not on the shell, as in other cases of the kind. The Redstart, as may be supposed, is entirely insectivorous. Though so expert a fly-catcher, of striking address on the wing, it is said by several writers to frequently glean insects on the ground.

FAMILY TANAGRIDÆ : TANAGERS.

SCARLET TANAGER.

PYRANGA RUBRA (L.) V.

Chars. Male, adult: Scarlet, with black wings and tail. Female: Above, clear olive-green; below, clear greenish-yellow; wings and tail dusky, edged with the color of the back. Young males are at first like the female; during the change, interminably variegated with colors of both sexes. There is much difference in the shade of red of the male. There are sometimes red feathers among the black wing-coverts. Length, 7.00-7.50; extent, 11.00-12.00; wing, 4.00; tail, 3.00; bill, 0.56; tarsus, 0.70.

The gleaming Tanager, one of the most brilliant of all our birds, is a common summer resident of New England — though somewhat locally distributed, and rare or wanting in northernmost portions of the country. It belongs properly to the Alleghanian Fauna, and is not found in any numbers beyond such limits. The gaudy and richly-contrasted colors of the male are first seen in spring, at the height of the migration of the Warblers and other small insectivorous birds, about the second week in May; and the birds are most numerous during the remainder of that month. With the beginning of June they are settled in their summer homes, and nesting is already in progress. Belonging to an essentially tropical family, of which they are among the few outliers of temperate regions, Tanagers are delicate birds, as would naturally be supposed,

and leave New England early in the fall; commonly during the first or second week in September. While with us they frequent orchards, gardens and parks, as well as mixed woods, rather preferring such as have abundant undergrowth of saplings, shrubs, and climbers. The female is a quiet, unobtrusive bird, whose colors assimilate with those of the foliage; being hence much less exposed to observation than her gay mate, who, with all his thoughtfulness for the safety of his family, can scarcely "hide his light" at the critical periods of incubation and breeding. The nest will oftenest be found in such low thick woods as we commonly style "groves," or in the skirting of still more tangled thickets, not seldom also in an orchard, on the horizontal limb of some low tree or sapling. It is a loosely fashioned structure, shallow for its width, though often of irregular shape, built of bark-strips, rootlets, twigs, and leaves, more neatly and compactly lined with finer materials of similar kinds. The eggs are three to five in number, and may usually be recognized at a glance, if the style of nest and its location be also taken into consideration. They are pale dull greenish-blue, more or less profusely and heavily spotted with reddish-brown and lilac. These markings may be dull in some cases, but the general impression given is that of a fully spotted egg. The variation in size and shape is great, specimens ranging from 0.90 to over 1.00 in length, by about 0.65 in breadth. Like many other gaily-dressed things, the Tanager's personal appearance is more attractive than what he has to say; his song being to no remarkable effect, and his ordinary call-notes decidedly unmelodious. The birds feed considerably upon berries and

other small soft fruits, as well as upon beetles and large winged insects and their larvæ. The dress of the male is not perfected until after the first year.

SUMMER TANAGER.

PYRANGA ÆSTIVA (L.) V.

Chars. Male, adult: Rich rosy or vermilion red (not scarlet), including the wings and tail; the unexposed portions of the feathers of these members dusky. Female: Dull brownish-olive; below, dull buffy-yellow. Young like the female; when changing, showing confused characters of both sexes, red and greenish being mixed in irregular patches. The female resembles that sex of *P. rubra*, but may be distinguished by the dull brownish or buffy tinge, the greenish and yellowish of *rubra* being much clearer; the bill and feet, also, are pale, not dark. The size is rather greater.

So rare a bird is this in New England, that it can hardly be accounted more than a straggler. It has not been observed beyond Massachusetts. It was reported from Connecticut by Linsley in 1843 (*Am. Jour. Sci.*, xliv, p. 261). Two were captured in Lynn, Mass., by Mr. S. Jillson, after a storm in April, 1852, as recorded by Putnam (*Pr. Essex Inst.*, i, 1856, p. 224). One was seen at Sherborne, Mass., by Mr. A. L. Babcock; and another at Amherst, Mass., in August, 1867. (See the Massachusetts instances given by Allen, *Am. Nat.*, iii, 1869, p. 578, and iv, 1870, p. 56.) In June, 1866, a specimen was taken at Swampscott, by Mr. N. Vickary, as first recorded by Allen (*Bull. Essex Inst.*, x, 1878, p. 15). Among other late notices are those of Purdie (*Bull. Nutt. Club*, ii, 1877, p. 27), who speaks of a male taken

a few years before near Providence, R. I., by Mr. J. W. P. Jencks, and of Merriam (Rev. B. Conn., 1877, p. 27), who mentions several Connecticut instances, and pertinently suggests that the bird may yet be found to breed in that State. The general haunts and habits of the bird, as well as its nest and eggs, resemble those of its near relative, the Scarlet Tanager.

LOUISIANA TANAGER.

PYRANGA LUDOVICIANA (*Wils.*) *Rich.*

Chars. Male, adult: Bright yellow, with crimson head; the middle of the back, the tail, and the wings, black; the latter with two yellow bars. Female: Resembling that of *P. rubra*, but distinguished by the wing-bars and other characters. Size about that of *P. rubra*.

A Rocky Mountain and Pacific species, whose occurrence in New England is purely accidental, like that of *Turdus nævius* or *Dendroæca auduboni*. It has been found but once, at Lynn, Mass., Jan. 20, 1878, when a living and undoubtedly wild bird was caught in a cage, after a severe storm. The following records all refer to this single case: *Brewer*, Forest and Stream, March 14, 1878, p. 95; *Allen*, Bull. Essex Inst., x, Apr., 1878, p. 37; *Brewer*, Pr. Bost. Soc., xix, May, 1878, p. 304; *Brewer*, *ibid.*, Apr., 1878, p. 204.

FAMILY HIRUNDINIDÆ: SWALLOWS.

AMERICAN BARN SWALLOW.

HIRUNDO ERYTHROGAстра HORREORUM (*Bart.*)
Coues.

Chars. Above, glossy steel-blue; forehead and under parts chestnut of variable shade, generally deepest on the throat; an incomplete steel-blue necklace. Tail, when fully developed, deeply forficcate, with linear lateral feathers, like the back in color, with several white spots. Bill and feet black. Sexes similar. Young less lustrous, with pale or even whitish under parts, and the tail simply forked. At a very early stage the young are quite lustreless brown above, with rusty edgings of some of the feathers. Length very variable, according to the development of the tail, usually 6 or 7 inches; extent, 12.50-13.50; wing, 4.50-5.00; tail, 3.00-5.00, the depth of fork 2.00-3.00. Like most birds, the Swallow is subject to albinism, and it is so abundant a bird that this aberration in color has often been observed.

A very common summer resident, especially in populated places. The regular return of the Swallows occurs in April, and usually during the latter part of that month; but the time is very variable, depending much upon the weather, and individuals may sometimes be observed in March, or even in February. Such instances, however, no more represent the normal migration, than "make a summer." The return movement is in September, and rather early than late in that month, but largely determined by the weather, as in spring. The Swallows are very assiduous in their household affairs, nesting for the first time usu-

ally by the middle of May, rearing another family late in June, and sometimes managing to dispose of a third before the end of summer — using, if



FIG. 43.—DETAILS OF STRUCTURE OF BARN SWALLOW. (Natural size.)

not making, much hay "while the sun shines." The well-known nest, of pellets of mud lined with hay and often also with feathers, is placed upon the rafters or under the eaves of a barn or other building, which serves these accommodating birds in good stead of the holes in trees they used to occupy before the country was settled. The eggs are three to five or six in number,

rather narrow for their length, like the trim bodies of the parent, from 0.68 to 0.78 long by 0.50 to 0.56 broad; they are fully speckled with reddish and purplish markings.

Queer little eggs, scarcely or not half the natural size, are often dropped by birds toward the end of their recurrent periods of ovulation; and such are generally infertile. Swallows' nests are so accessible, and so often looked into by the children, that many such "runt" eggs have come under our observation.

WHITE-BELLIED SWALLOW.

IRIDOPROCNE BICOLOR (V.) Coues.

Chars. Lustrous steel-green above, pure white below ; bill and feet black ; tail simply forked. White ones have been seen. Length, about 6.00 ; extent, 13.00 ; wing, 4.50-5.00 ; tail, 2.50.

A common summer resident, and more equably distributed over New England than the Barn Swallow, as it is less dependent upon man for breeding places, and less gregarious during the nesting season. Though the White-bellies often accept the boxes set up for their accommodation, it is not always easy to induce them to occupy such artificial retreats, and in some places they still refuse to modify their primitive habits of breeding in natural excavations of trees and stumps.

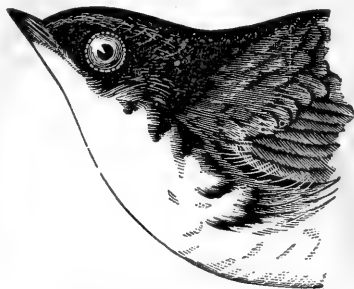


FIG. 44.—WHITE-BELLIED SWALLOW.
(Natural size.)

Sometimes they compromise on a hole in a post or fence. They are consequently found in remote and secluded woods and swamps, as well as about the habitations of man ; and display a certain taste for aquatics in frequently choosing "stubs" standing in the water for nesting-places, in their immense autumnal gatherings in the salt marshes of the coasts, and in being very numerous about ponds and other fresh water away from houses. They reach New England somewhat in advance of the Barn Swallows, coming in full force early in April ; and in the fall they linger

through the greater part of September ; but the weather has much to do with their movements. The nest is built of hay, without mud, and lined with feathers ; the eggs are pure white, without markings, and from 0.70 to 0.78 long by 0.50 to 0.55 broad.

CLIFF OR EAVE SWALLOW.

PTEROHELIDON LUNIFRONS (*Say*) *Cab.*

Chars. Above, glossy steel-blue ; a blue-black spot on the throat ; rump rufous ; a white or brownish-white crescent on forehead ; throat and sides of head deep chestnut, the rest of the under parts dull rusty-gray, or grayish-brown, becoming paler on the belly ; much of the under parts with dusky sharp lines on the individual feathers. Wings and tail blackish, with little gloss, and unmarked. Bill black ; feet dark. Sexes alike. Young : Above, dark lustreless brown, with whitish skirting of the feathers ; the throat-spot wanting, the frontlet a mere trace or wanting, the chestnut parts quite pale. Length, 5.00-5.50 ; extent, 12.00-12.50 ; wing, 4.25-4.50 ; tail, 2.25, nearly square.

The "Republicans" enter and leave New England about the same time that the Barn Swallows do, and are among our common summer birds. They are more numerous and more equably dispersed in settled districts than formerly ; but I think that a good deal that has been written of their supposed irruption from the West is to be taken with salt. Some records have been laboriously collected to show the dates of appearance of these birds in particular localities ; such writing has its own interest as a matter of fact, but not as sustaining the "eastward-ho !" theory. The "Cliff" Swallows, as their name implies, and as every one knows, naturally fix their queer bottle-nosed nests to the per-

pendicular faces of rocks and hard embankments; and have latterly acquired the name of "Eave" Swallows, from the circumstance that they have readily availed themselves of the eligible nesting sites afforded by the walls of houses under shelter of the eaves. Therefore, the settlement of the country affords unlimited breeding resources where formerly there were none; and these Swallows have consequently become common in New England. They were actually known in this part of the country before their discovery by Say in the West; but natural breeding-places, such as these birds require, are not to be found everywhere in the Eastern States. The remarkable nests which the industrious birds construct with such ingenuity and labor may now be seen sticking in rows under the eaves of buildings anywhere;



mud-retorts, with the hole in the neck, furnished inside with hay and feathers. The degree of perfection to which the flask-shape is carried depends much upon circumstances, some nests having no neck. The eggs closely resemble those of the Barn Swallow, being similarly marked; they are a trifle larger on an average, but no one could distinguish them with certainty. Two broods are usually reared each season. The birds are among the most sociable and amiable of the Swallows, fifty or a hundred of their nests being often massed together on a cliff, or strung along the rafters, without the slightest difference of opinion on the part of the owners.

FIG. 45.—CLIFF OR EAVE SWALLOW. (Natural size.)

BANK SWALLOW.

COTILE RIPARIA (*L.*) *Boie.*

Chars. Lustreless mouse-brown above, white below, with a brown necklace; wings and tail dusky, unmarked. A small tuft of feathers at the *lower* end of the tarsus. Sexes alike. Young: Similar, but usually with whitish or rufous edgings of the feathers of the upper parts. Small: length scarcely 5.00; extent, 10.50; wing, 4.00; tail, 2.00.

These very plainly-colored Swallows, the least in size of all our species, are abundant summer residents, wherever the requirements of their breeding instinct are fulfilled. Unlike all the rest, the Bank Swallows have never yielded to modernizing influences, and still persist in excavating holes for themselves in the ground, as they have always done. Their nesting habits are very interesting. Given an embankment of earth soft enough to be worked — a natural exposure in the bend of a stream, a site left in running a railroad, a gravel-pit — straight the busy birds come flocking to colonize. Soon the face of the escarpment will be seen studded with little round holes, before which the light wings dash in airy circles. The places are not unlike those the Kingfisher selects, and the larger entrance of the sturdy rattler's hole may sometimes be seen in the midst of the lesser openings. It is astonishing how far the weak birds, with their slight bills and claws, will manage to penetrate the ground; sometimes to the extent of two feet, though the burrows are not ordinarily so extensive as this. They also display much tact in selecting the most suitable soil to work in, neither too hard to be penetrated with ease,

nor so soft as to cave in or be unsafe from the falling of loosened pebbles. Any one may be satisfied of this by examining a bank where different strata are exposed, and noting how the Swallows confine themselves to such belts of soil as suit them best. At the farther end of the passage-way the nest is placed — a slight affair of dried grasses lined with feathers. The eggs are from three to six in number. I have repeatedly found the latter number. There seems to be some irregularity in the time they are laid. I have found perfectly fresh eggs in the same nest with others containing well-formed embryos, and a friend informs me that he has seen in one nest fresh eggs and newly-hatched young. Is it possible, in such cases, that more than one pair have made use of the same nest? The eggs are pure white, without markings, and measure 0.68 to 0.73 by about 0.50. They are first laid the latter part of May, with a second set later in the summer.

ROUGH-WINGED SWALLOW.

STELGIDOPTERYX SERRIPENNIS (*Aud.*) *Bd.*

Chars. Resembling the Bank Swallow in general aspect; no tuft of feathers on tarsus; outer web of first primary rough and serrated, the vane being converted into a series of stiff recurved hooks. Above, brownish-gray; below, paler, whitening on the belly. A little larger than the Bank Swallow.

The Rough-wing is probably rare in New England, and has only lately become known to occur there at all. But it is so similar to the Bank Swallow in general appearance, that it might long escape notice, were

not special attention paid to the distinctions between the two. Writing in 1868, Dr. Coues remarks: "It is very singular that there should be no instances on record of the occurrence in New England of the Rough-winged Swallow, *Stelgidopteryx serripennis*, as the species certainly *ought* to be found there;" and down to 1875 the evidence had not been forthcoming, the name not occurring in Dr. Brewer's list of that date. The first New England record was made by Mr. H. A. Purdie, who speaks of a female taken at Suffield, Conn., by Mr. E. I. Shores, June 6, 1875 (Bull. Nutt. Club, iii, 1877, p. 21). This occurrence was recognized, of course, in Mr. Merriam's Review (p. 31), and with the additional information that Mr. E. P. Bicknell had found the bird breeding in numbers at Riverdale, N. Y., within a few miles of the Connecticut line. It remained for Mr. J. A. Stannis (Bull. Nutt. Club, iv, 1879, p. 119) to attest the constant and regular nesting of the Rough-wing in Connecticut, near New Haven. He found it breeding at Green's Farms, in stone abutments along the N. Y. & N. E. R. R., seemingly in no wise disturbed by the thirty trains that passed daily within a few feet of their nests. "Half a dozen pairs nested there last season, and perhaps more; but, judging from the number seen, I should say there were fewer than during the season of 1877." His observations extend over three summers, showing the occurrence to be not fortuitous. There is as yet, I believe, no Massachusetts record; but as the question, in the case of a bird of such powers of wing as a Swallow, is scarcely one of Faunal areas, the Rough-wing is liable to be heard from in any portion of New England. Instances of further occurrence

are awaited with interest, and will, it is hoped, be promptly reported by those who may have it in their power to extend the known range of the species.

The nests, like those of the Bank Swallow, are built of hay and feathers, but are very differently placed, the Rough-wing nesting in artificial retreats — as a chink in the boarding of a building, a crevice in a stone wall, the abutment or span of a bridge, and the like; preferably near water. The eggs are pure white, unmarked, to the number of four to six; they closely resemble Bank Swallows', but are a little larger, averaging perhaps 0.75×0.55 .

PURPLE MARTIN.

PROGNE SUBIS (L., 1758) *Bd.*

Chars. Male, adult: Lustrous blue-black. Female and young: Duller steel-blue; below, more or less extensively white with dark gray streaks. Bill and feet black, the former very stout and much curved for a bird of this family; nostrils circular and prominent. Length, 7.00 or more; extent, 16.00; wing, nearly 6.00; tail, 3.50, simply forked.

A common summer resident, almost universally nesting nowadays in the boxes provided for its accommodation, or equivalent retreats about buildings. The distribution of the species, though in no wise dependent upon Faunal considerations, is influenced by other conditions which cause the bird to be irregularly dispersed in New England, and rare or even wanting in many localities where one would expect to find it. I am inclined to think that here and elsewhere in the United States the Martin is not on the

whole so very numerous as we suppose. Wherever it occurs, the size of the bird, its striking color, the noise it makes, and its activity and domesticity, conspire to render it an object so conspicuous that we unconsciously acquire an exaggerated idea of its general abundance. It moreover appears to be somewhat on the decrease in New England, from some cause not well understood. Its loquacity is an annoyance to many persons, and hospitality is frequently denied; though the bird is certainly a serviceable one in the work of holding insects in check—vastly more so than its inveterate enemy, the European Sparrow. The Martin originally built in hollows of trees, as the White-bellied Swallow still does, but is now seldom if ever known to nest except in artificial receptacles. It reaches us late in April or early in May, and leaves early in September. Two broods are commonly reared, the first set of eggs being laid in May, the other in July. The nest is built of hay, sometimes with twigs intermixed, and is lined with feathers. Like those of the Bank and White-bellied Swallows, the eggs are pure white and unmarked; but they are of course much larger—0.95 to 1.00 long, by about 0.68 in the lesser diameter.

FAMILY AMPELIDÆ : WAXWINGS.



BOHEMIAN WAXWING.

AMPELIS GARRULUS L.

Chars. Under tail-coverts chestnut ; front and sides of the head tinged with a richer, more orange-brown shade ; primary wing-coverts tipped with white ; each quill with a sharp white (or yellowish) stripe at the end of the outer web ; chin velvety black in a large, well-defined area ; narrow line across forehead, along sides of head, through eyes, meeting its fellow on the occiput behind the crest, also velvety black ; no white on under eyelid nor across forehead ; no yellowish on belly ; bill and feet black. Length, 7.75 ; extent, 14.75 ; wing, 4.50 ; tail, 2.50.

This eccentric bird has only been observed in New England as an erratic visitor from the north, in winter ; and even then its visits are irregular and very infrequent. We have records of captures or occurrences at various localities throughout New England ; but it is unnecessary to enumerate them, as they prove no rule. The Bohemian is well known to roam at large over Europe and America in flocks sometimes of enormous extent, keeping mostly in high latitudes, but occasionally whirling southward. Its breeding resorts were long a mystery. In America, it is only known to nest on the Yukon. In New England it generally appears as a straggler, seldom farther south than Massachusetts ; but flocks of some size have occasionally been observed. Geographical distribution and the vagabond nature of the bird aside, the

traits and habits of the Bohemian are quite the same as those of the familiar Cedar Bird; the nidification is substantially identical, and the eggs are only to be distinguished by their superior size.

CAROLINA WAXWING; CEDAR-BIRD;
CHERRY-BIRD.

AMPELIS CEDRORUM (*V.*) *Gray.*

Chars. Plumage peculiarly soft and smooth; head conspicuously crested. Body-color shading insensibly from clear ash on the rump and upper tail-coverts through olivaceous-cinnamon to rich purplish-cinnamon on the fore-parts and head, and through yellowish on the belly to white on the under tail-coverts. Fore-head, lore, chin, and eye-stripe, velvety-black; a sharp mandibular line, one also bordering the black lore, with the under eyelid, white. Wing-quills slate-gray, dusky at the ends and pale on the inner webs, without white or yellow markings, but the inner ones with hard horny appendages, like red sealing-wax. Tail tipped with yellow, occasionally also having the waxy appendages. Bill plumbeous black, sometimes pale at base below; feet blackish. Length, 6.00-7.00; extent, 11.50-12.00; wing, 3.50-3.75; tail, 2.25; bill, 0.36; tarsus, 0.70. Specimens apparently adult may lack the horny appendages, and these are usually wanting in the young. The latter are streaked with dingy whitish, but are sufficiently like the adults to be unmistakable.

This Waxwing is something of a tramp, like its elder brother, the Bohemian, and not much to be depended upon for regular periodicity of movement, in pointing the moral of Faunal areas. It is an abundant New England bird, breeding anywhere in this country, and to some uncertain extent a spring and autumn migrant; for numbers enter the country in the former and depart in the latter season. Other num-

bers, however, endure the rigor of winter without inconvenience, at least as far north as Massachusetts, collecting in flocks in groves and thickets, where they feed upon various berries and other persistent small-fruits, especially those of the cedar. At more favorable periods of the year they find abundant food in cherries and other garden fruits, their devotion to which makes the horticulturist treat them with suspicion, if not with outright hostility; but they nevertheless are much more beneficial than injurious to his property, destroying, as they do, great numbers of hurtful bugs and caterpillars — particularly the noxious canker-worms, which the English sparrows scarcely touch. Not seldom, also, they get the better of the easy indolence which forms so marked a



FIG. 46. — CEDAR BIRD. (Natural size.)

trait of theirs, and make vigorous sallies after flying insects, which they take on the wing with no little address. The Waxwings are very sociable, amiable, and even affectionate in disposition; they go in flocks nearly all the year, and seem so well satisfied with each other and with the easy life they lead as to be in no hurry to enter upon household duties. It is usually late in June, or even July, before the dilatory birds pair off and make a nest. For this purpose they resort to a cedar bush, or orchard tree, and build a rather bulky structure of the most miscellaneous

vegetable matters — bark, leaves, roots, twigs, weeds, grasses, sometimes even paper, rags, and twine ; lining the composite fabric with finer grass stems, hair, or wool. The eggs, which run from 3 to 6 in a set, are very characteristic, having a livid bluish or pale bluish ground, more or less thickly and nearly always sharply dotted, spotted, or blotched with blackish spots, and others of the same dark tint, but appearing paler because under instead of on the surface, being therefore overlaid with the ground-color of the shell. Whitish eggs with faint obsolete markings are sometimes seen, but the usual style is well-pronounced, as just described. In shape the eggs are rather elongate and narrow, though there is much variation in this respect. Fair samples measure about 0.82×0.60 . The Waxwing is such a lazy breeder, that probably the latest broods, sometimes seen even in August, are not a second lot for the season. It is a remarkably silent bird, without anything to be called a song ; the ordinary note is soft, low, and lispng — Minot calls it a "dreary whisper," and Coues describes the effort as "a weak and wheezy whistle."

FAMILY VIREONIDÆ : GREENLETS.

RED-EYED GREENLET.

VIREO OLIVACEUS (L.) V.

Chars. Above, yellowish-olive, extending on sides of head and neck, but not on the crown ; below, pure white, a little shaded along the sides with greenish-yellow. Wings and tail dark, the feathers edged with the color of the back ; no wing-bars. Crown ash, contrasting with the color of the back, bounded with a blackish stripe on each side, below which is a long whitish supraciliary line ; beneath this the lore dusky. Bill dark plumbeous above, pale horn-color below ; feet bluish-plumbeous ; eye red. Primaries apparently only 9, the first being rudimentary, though always discernible, and occasionally quite evident. Large for a *Vireo*, rather trimly built, with slender hooked bill, and usually found in good fair feathering at all seasons. Length about 6.00, though ranging 5.75-6.50 ; extent, 9.75-10.75 ; wing, 3.00-3.40 ; tail, 2.25-2.50 ; bill over 0.50 ; tarsus, 0.75.

The Greenlets or Vireos form one of the several leading families of New England birds in numbers of species, others being those of the Thrushes, Warblers, Swallows, and Finches. They are nearly all numerous in individuals, and play no small part in the life of the woods. The White-eye haunts shrubbery, but the rest are sylvan birds of the high forest, the park and orchard. All are summer residents in New England ; all are migratory, insectivorous, and tuneful ; all weave neat cup-like pensile nests, and lay white, finely speckled eggs ; and all share many admirable and agreeable traits of character.

The commonest, best known, and most generally distributed New England species of Vireo is the Red-eye, whose voluble notes are heard all summer long in the parks and streets of the cities as well as in the most remote forests. It is a most persistent and tireless songster, whose earnest melody enlivens the sultry noon, and the drowsy, listless after-hours of midsummer days, which prove too much for the spirit of unwilling school-boys, but seem to have no depressing effect upon this indefatigable musician. The restless bird comes to us early in May, and remains through

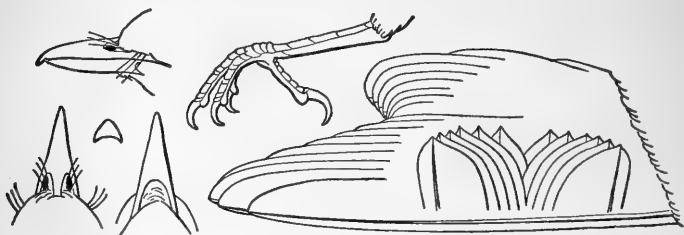


FIG. 47.—DETAILS OF STRUCTURE OF RED-EYED GREENLET. (Natural size.)

most of September; in southerly places quite until October. The nest is made about the first of June, and the eggs are laid as soon as it is completed. There is sometimes a second set, in July. The well-woven cup is suspended from a forked twig; it is felted of the most miscellaneous materials, among which bark-strips, pine-needles, bits of paper, and wasp-nest are usually seen. Though the walls are thin, the structure is compact, and so durable that it may last more than one season; it seems as if the materials were matted or even pasted together. It is placed in a sapling or other undergrowth of the forest, or in the orchard, or along the roadside, and becomes very noticeable after

the leaves have fallen. The eggs are three to five in number, pure white, with a rosy blush, sprinkled with a few dark spots at and about the larger end, most of the surface being immaculate; they measure 0.80 to 0.85 in length by about 0.60 in breadth. The parents are very spirited in the defence of their home, and very tender in the care of their young, to whom they bring a bountiful supply of soft insect food. Like other Vireos, this Greenlet is an indefatigable bug-hunter, incessantly peering about for the insects that infest the foliage, singing as he goes his diligent, useful way, now dropping a note to seize his prey, then resuming his strain with the same preoccupied air.

BROTHERLY-LOVE GREENLET.

VIREO PHILADELPHICUS *Cass.*

Chars. Above, dull olive-green, brightening on the rump, fading insensibly into ashy on the crown, which is not bordered with blackish; a dull white supraciliary line; below, palest possible yellowish, whitening on throat and belly, slightly olive-shaded on sides; sometimes a slight creamy or buff shade throughout the under parts; no obvious wing-bars; no evident spurious first primary. The latter character distinguishes the species from *V. gilvus*, which it most resembles in color. About 5.00 long; wing, 2.70; tail, 2.25; bill hardly or about 0.50; tarsus, 0.66.

This is the rarest of the New England Greenlets, but its very close resemblance to the Warbling Vireo doubtless causes it to be considered less common than it really is. The best account of the species as a bird of New England is that given by Mr. Deane (*Bull. Nutt. Club*, i, 1876, p. 74). "The above-named spe-

cies was first given as a New England bird by Prof. Chas. E. Hamlin, based upon a specimen which he captured at Waterville, Me., May 21st, 1863. For the next nine years it escaped the notice of our collectors, when, during a collecting trip at the Umbagog Lakes, Maine, I procured a specimen on June 3, 1872, and on the following day, in company with Mr. Brewster, obtained two more. In a communication from Geo. A. Boardman, Esq., he states that on June 2d, 1872, he obtained a female at Calais, Me., the only one, however, which he has met with. We did not

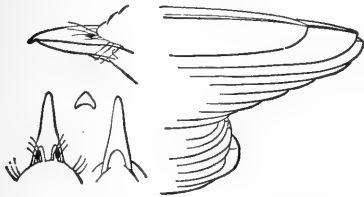


FIG. 48. — DETAILS OF STRUCTURE OF BROTHERLY-LOVE GREENLET. (Natural size.)

hear of the Vireo again until Sept., 1874, when Mr. Brewster took six specimens at Lake Umbagog. On Sept. 11th, 1875, I procured a female at the foot of Ripogenus Lake, a beautiful sheet of water situated about

one hundred and fifty miles northeast from Umbagog Lake, and observed two others. There was an immense migration of Warblers, Sparrows, and other species on that morning, and the specimen taken was in company with the Red-eyed and Yellow-throated Vireo. All these individuals were undoubtedly on or near their breeding grounds, and although but few pass through the coast States, yet it is strange that the species should have escaped the notice of so many watchful collectors of the present day, until Mr. Brewster procured a specimen in Cambridge, Mass., Sept. 7th, 1875. Three specimens were taken during the first week of June, 1876, at Lake Umbagog, in which

locality it is now considered as a summer resident." Mr. W. H. Fox, Concord, Mass., records a specimen taken in Hollis, N. H., May 26th, 1876, by Mr. A. F. Eaton (Bull. Nutt. Club, ii, 1877, p. 78); "it was feeding in company with two other birds of the same kind, in some low oak bushes." Mr. Wm. Brewster contributes an excellent article (Bull. Nutt. Club, v, 1880, p. 1), in which he tells us that the species has at last been found "to be not very uncommon in suitable localities" throughout the region surrounding Umbagog Lakes. "I traced them as far southward as Newry, only five miles north of Bethel, and westward to Dixville Notch, in New Hampshire. At the latter point they were noted in greater numbers than elsewhere, and on June 10 several pairs were found in the open birch groves about the 'Dix House,' just beyond the Notch." Mr. Brewster adds that this Greenlet comes with the last flight of Warblers, and is most likely to be found singly at this season. After the breeding season has fairly begun he is quite as indefatigable a singer as his Red-eyed cousin, and there is much resemblance between the notes of the two species. He sings throughout the day in all weathers; his notes are generally pitched a little higher in the scale, while many of the utterances are feebler, and the whole strain is a trifle more disconnected. Mr. C. W. Townsend records the second Massachusetts specimen from Magnolia, September 18, 1879 (Bull. Nutt. Club, v, 1880, p. 53). The nest and eggs are unknown to me, but it may be presumed, to judge from the analogy of this genus, that they are not distinguishable from those of several other species.

WARBLING GREENLET.

VIREO GILVUS (*V.*) *Bp.*

Chars. Differing from both the foregoing species of *Vireo*, and agreeing with each of the two last ones in possessing ten developed primaries, the first one of which, though short and "spurious," is one-third as long as the second. Scarcely distinguishable from *V. philadelphicus* in color and size. A very plainly-colored bird, without wing-bars, or blackish stripe along side of crown, or decided contrast between color of back and of crown. Above, ashy-greenish, brightest on rump, shading insensibly into ashy on the crown, which is bordered by a whitish supraciliary line; region immediately before and behind eye dusky. Under parts dull white, with a faint yellowish, sometimes a creamy or buffy tinge, shaded along sides with a delicate wash of the color of the back. Bill dark horn-color above, pale below; feet plumbeous. Length, 5.00 or a little more; extent about 8.50; wing, 2.80; tail, 2.25; bill, 0.40; tarsus, 0.65.

This common summer resident of New England is even more noted than the Red-eye for the persistency with which it haunts the elms and other shade-trees of our streets and parks, where it glides unseen among the foliage, and constantly salutes us with its dreamy delicious warbling. The notes are much softer, smoother, and more artistically modulated than those of the Red-eye, having an easy rippling movement, quite unlike the jerky style in which the other Greenlet delivers his querulous message. It comes from the South early in May, and retires about the middle of September. Though generally distributed, it is perhaps more numerous in southern New England, and in populous localities, than in the recesses of Maine woods; and is probably nowhere so abundant as the Red-eye. It usually keeps well up in the foliage of the larger trees, and will scarcely be found in under-

growth of any kind; though it enters orchards and gardens, particularly when the fruit-trees are in blossom. The nest, as would be expected, is built at a considerable height from the ground. It is pensile, of course, and peculiar in no respect in comparison with that of other Vireos; nor are the eggs distinguishable with certainty from the Red-eye's, though averaging smaller.

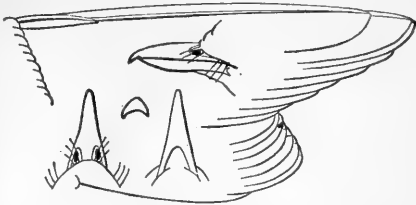


FIG. 49.—DETAILS OF STRUCTURE OF WARBLING GREENLET. (Natural size.)

They are usually laid early in June. Dr. Brewer has recently recorded no fewer than four nests and sets of eggs from East Bethel, Vt., in the very heart of the Green Mountains, and seems disposed to consider the bird as not less abundant there than in Massachusetts and Connecticut.

YELLOW-THROATED GREENLET.

VIREO FLAVIFRONS V.

Chars. A large, stout, highly-colored species, with thicker bill than any of the foregoing. No evident spurious first quill; primaries apparently only 9, as in *olivaceus* and *philadelphicus*. Above, rich yellow-olive shading to bluish-ash on the rump; below, bright yellow, the belly and vent abruptly white, the sides shaded anteriorly with olive, posteriorly with plumbeous. Extreme forehead, supraciliary line, and eye-ring, yellow like the throat. Lore dusky; wings dusky, with much white edging and two broad white cross-bars; tail like wings, the feathers broadly edged with white. Bill and feet dark plumbeous. Length, 5.75-6.00; extent, 8.50; wing about 3.00; tail only 2.25; bill, 0.45; tarsus, 0.75.

This is decidedly the handsomest of the Greenlets, the rich yellow of the throat and breast being as conspicuous as it is in the case of the Chat—these two birds, in fact, resembling each other quite closely. It is not nearly so common in New England as either the Red-eye or the Warbling Vireo, and in fact is rare, or only locally distributed in any numbers beyond Massachusetts, being decidedly characteristic of the Alleghanian Fauna. It is, however, found in the Canadian also. Mr. Ruthven Deane found it in September at Ripogenus Lake, about one hundred and fifty miles

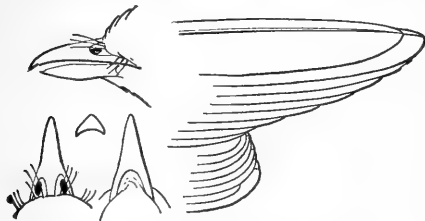


FIG. 50.—DETAILS OF STRUCTURE OF YELLOW-THROATED GREENLET. (Natural size.)

northeast of Umbagog (Bull. Nutt. Club, i, 1876, p. 74). This occurrence may be exceptional. The Yellow-throat arrives in New England with other

Vireos very early in May, is distributed in a week or two, and remains through the greater part of September. The eggs are not distinguishable with certainty from those of the Red-eye and Warbling Greenlet, though perhaps, on an average, more heavily spotted; they are laid at the same time. The nest, on the contrary, is a much more highly finished structure, of greater capacity, and elegantly adorned with a stucco-work of lichens, like a Humming-bird's. Mr. Minot compliments the birds on their architectural taste and skill, and describes the result as "altogether one of the prettiest nests to be found." "The nest of this species," he says, "is pensile, but rather larger and deeper than

those of the other Vireos, being between 3 and 3½ inches wide, and nearly as deep. It is placed in the fork of a horizontal branch, from three to fifteen feet above the ground, as often in the orchard as in the wood, though I have found it in pines. It is composed of narrow strips of thin bark, such as that of the cedar or large vines, is lined with pine-needles or grasses, and is usually ornamented on the outside with caterpillars' silk and large pieces of lichens." (B. N. E., 1877, p. 154.) The Yellow-throat has an agreeable song, unmistakably a Vireo's, yet readily distinguished from the several different melodies of the other species; together with the harsh scolding outcry commonly uttered by the members of this family when their homes are invaded. It is not less beneficial than the rest are to the agriculturist, as it destroys its full share of objectionable insects.

BLUE-HEADED GREENLET.

VIREO SOLITARIUS (*Wils.*) *V.*

Chars. A large stout species, with a thick bill; size and proportions nearly those of *V. flavifrons*; but there is a well-developed spurious quill, 0.50–0.65 long, a fourth as long as the next primary. Upper parts olive-green, of the same shade as in *V. olivaceus*, the crown and sides of the head bluish-ash in marked contrast, with a white line to and around but not behind the eye, and dusky lore. Below, pure white, the sides olive-shaded, the under wing and tail-coverts quite yellowish. Wings and tail dusky, most of the feathers edged with white, or with the color of the back, or both, and the wings with two white or yellowish cross-bars. Bill and feet dark plumbeous. Fall specimens are commonly yellower than in spring. Length about 5.50; extent, 8.50; wing, 2.75; tail, 2.25; bill, 0.40; tarsus, 0.70.

Massachusetts has been thought to form the extreme southern limit of the Blue-headed Greenlet in the breeding season, but this view does not prove to hold good, as the bird breeds in Connecticut, and even in the Middle States. In southern New England, however, this Vireo is chiefly a migrant in spring and fall, passing on into the Canadian Fauna to breed in greater abundance there than in the Alleghanian. It is one of the three commoner Vireos of northern New England in summer, the Yellow-throated and the White-eyed being more restricted in their re-

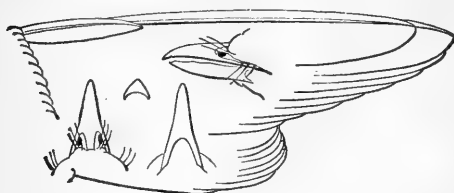


FIG. 51. — DETAILS OF STRUCTURE OF BLUE-HEADED GREENLET. (Natural size.)

spective ranges, and the Philadelphian for the most part passing unnoticed. It arrives in New England earlier than the other

Vireos, being sometimes seen in Massachusetts in the last week of April, and likewise lingers later in the fall — all through September, and occasionally until the middle of October. Nests have been found in Connecticut and Massachusetts as well as farther north, but the bird seems to be nowhere very prominent in the composition of the Avifauna. It is scarcely an inhabitant of the streets and parks like the Red-eyed or Warbling Greenlet, preferring the solitude of the woods; and hence less frequently comes under observation. The nest is described as resembling that of the Yellow-throated Greenlet, being composed chiefly of bark-strips, fine grasses, and rootlets, ornamented with mosses and lichens. The eggs are undistinguish-

able from those of some other larger Vireos, most closely resembling those of the Yellow-throated in size and markings. They are usually laid the first week in June. The song of the bird is an agreeable one, and pitched in a higher key than that of our other species.

WHITE-EYED GREENLET.

VIREO NOVEBORACENSIS (*Gm.*) *Bp.*

Chars. Above, bright olive-green, including crown; a slight ashy gloss on the cervix, and the rump showing yellowish when the feathers are disturbed; below white, the sides of breast and belly, the axillars and crissum, bright yellow; a bright yellow line from nostril to and around eye; lores dusky; two broad yellowish wing-bars; inner secondaries widely edged with the same; bill and feet blackish-plumbeous; eyes white. Length about 5.50; wing, 2.33-2.50; tail, 2.25; spurious quill, 0.75, half as long as the 2d, which about equals the 8th; tarsus about 0.75; middle toe and claw, 0.50; bill nearly 0.50.

Among the six New England Vireos the White-eye is conspicuous by its absence in the greater part of the country, and further distinguished by some peculiar habits. For aught we know to the contrary, this species is strictly limited northward by the Alleghanian Fauna, and is more abundant in the Carolinian than elsewhere. Though it cannot be said to be rare in any one of the three nether States, it is nevertheless very unevenly distributed—numerous in particular localities, scarcely or not to be found in others equally eligible to all appearance. Nor is it a bird either of the town or woodland; its home is in the shrubbery, with Wrens and Maryland Yellow-throats, and the

nest is hung on a bush or vine, a few feet only from the ground—always in thick undergrowth, and frequently in the midst of a swamp. The structure is not notably different from that of the Red-eyed or Warbling Vireos; and the eggs are only to be distinguished by their decidedly inferior size. Several specimens before me, however, are even more sparsely sprinkled with dark dots, and one is immaculate. They are laid early in June, about a month after the arrival of

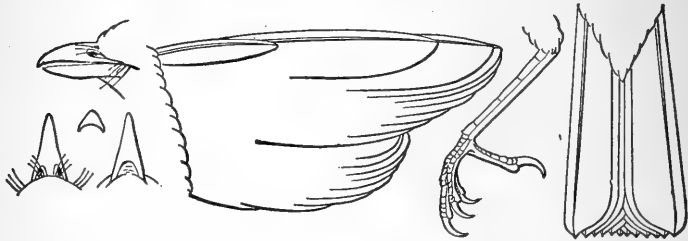


FIG. 52. — DETAILS OF STRUCTURE OF WHITE-EYED GREENLET. (Natural size.)

the bird. These Greenlets have considerable force of character, as one will learn on attempting to molest them when nesting; they are nervous, impulsive little creatures, of highly irritable temperament. If let alone, they contain themselves very well, but they are as cross-grained as Wrens when disturbed, and express their displeasure with most vehement scolding. The nuptial song is a peculiar one, delivered with strong expression, and very variable in intonation. The birds retire early in the autumn, when the falling leaves no longer afford them the seclusion they covet.

FAMILY LANIIDÆ : SHRIKES.



GREAT NORTHERN SHRIKE, OR BUTCHER-BIRD.

LANIUS BOREALIS V.

Chars. Adults : Clear bluish-ash, bleaching on the scapulars and upper tail-coverts, the under parts pure white, always more or less vermiculated with fine wavy cross-lines of dusky. A black bar along side of head, not meeting its fellow across forehead, enclosing the white under eyelid, and bordered above by hoary white, which reaches across the forehead. Wings black, many or most of the quills tipped with white, and a large white spot at base of primaries. Tail black, the outer feather mostly white, the next three or four tipped with white in decreasing extent. Bill and feet plumbeous-black. Young : More sordid in coloration, the ashy parts of the adult quite brownish, the under parts brownish-white, with heavier wavy dark marks ; less white on wings and tail than in the adults ; bill pale at base below. Length about 10.00 ; extent, 14.50 ; wing, 5.50 ; tail rather more ; bill, 0.75 ; tarsus, 1.00 or less ; middle toe and claw, 0.75.

The "bold brigand" is resident in the Canadian Fauna ; a migrant and winter visitant in other parts of New England, where it occurs not rarely, but irregularly, being common at some seasons and much less so at other times. Its movements appear to be regulated more by the varying state of the food-supply than by times of year. It is known to breed in Maine, but even in that State is more numerous in winter and during the migrations than in summer. Like the common Snow-bird, so characteristic of the Canadian Fauna in the breeding season, it indicates the exten-

sion of this Fauna along the higher points of the Alleghany Mountains, through the Middle and some of the Southern States. Its nesting in the mountains of Pennsylvania is sufficiently attested, and it will doubtless be found to breed in the highest parts of Massachusetts as well as in Maine. In 1875, Dr. Brewer catalogued it as "resident" in northern New England. Dr. Coues having subsequently confirmed the accuracy of the record, Dr. Brewer was led, with singular



FIG. 53. — GREAT NORTHERN SHRIKE. (Natural size.)

perversity, to challenge his own statement in the following terms: "It is perhaps too soon to decide in regard to the presence or absence of *borealis* in the breeding season within the United States, but the more the subject is examined, the more conclusive appears to be the evidence that there are no data in support of certain opinions so positively pronounced on the affirmative side" (Pr. Bost. Soc., xx, 1879, p. 267). This is remarkable language from one who had himself furnished an instance of the fact here denied, showing that the controversial had gotten the better of the scientific spirit. (See Coues, B. Col. Vall., 1878, p. 561; Brewer, Bull. Nutt. Club, iv, 1879, p. 120.)

This matter aside, the Shrike is chiefly known in New England as a migrant and winter resident, from October until April. They may be seen in any kind of locality, singly, on the lookout for the small birds and quadrupeds which form their prey after the supply of grasshoppers and other insects ceases. Bold and even rash in their actions, they sometimes leave the woods and fields to enter cities, apparently attracted by the abundance of European Sparrows. They have frequently been seen in Boston and elsewhere, too often meeting the fate which ignorance and folly have in store for feathered friends, being shot without mercy. One winter, says Merriam, it was no uncommon thing to see a Shrike flying across the street in New Haven with a Sparrow in its talons. "The 'poor Sparrows,' unused to danger of any sort, were utterly helpless, and at one time it seemed as if we were actually going to be rid of the little pests." According to Dr. Coues, "Boston could hardly do a wiser thing, as far as the Sparrow plague is concerned, than support a colony of Shrikes."

LOGGERHEAD SHRIKE.

LANIUS LUDOVICIANUS L.

Chars. Slate-colored, slightly whitish on the rump and scapulars, below white, with a few obscure wavy black lines or none; black bar on side of head, meeting its fellow across the forehead, not interrupted by white on under eyelid, and scarcely or not bordered above by hoary white; otherwise like *borealis* in color, but smaller. Length usually under 9.00, sometimes only 8.00; extent, 12.00-13.00; wing and tail, each, about 4.00; bill, 0.66; tarsus, 1.00 or more. The young differ from the adults much as those of *L. borealis* do.

Though the Loggerhead has been rated as a New England bird at intervals for nearly forty years, the earlier records are without exception so dubious that Dr. Coues was obliged to omit the species from his list of 1868, as having no proven right to a place there. It now appears, however, that the various intimations we have long had of the presence of a Shrike, not *L. borealis*, in New England, were founded in fact, though none of the early indications were explicit enough to be reliable. The occurrence of the true Loggerhead, and also of the variety *excubitorides*, has lately been established. The following is the authentic New England record of *ludovicianus*: — *Purdie*, Am. Nat., vii, 1873, p. 115; Massachusetts; first authentic record for that State. — *Maynard*, Am. Sportsman, v, 1875, p. 313; Newtonville, Mass., 1874. — *Merriam*, Rev. B. Conn., 1877, p. 33; Portland, Connecticut, Nov., 1876. — *Allen*, Bull. Essex Inst., x, 1878, p. 15; Lynn, Mass., Nov., 1877. — *Purdie*, Forest and Stream, xii, 1879, pp. 166, 265; Maine, breeding! — *Brewer*, Bull. Nutt. Club, iv, 1879, p. 119; Maine and Vermont, breeding! — *Brewer*, Pr. Bost. Soc., xx, 1879, p. 226; the same, very full account. — *Purdie*, Bull. Nutt. Club, iv, 1879, p. 186; Maine, breeding! — *Deane*, Bull. Nutt. Club, iv, 1879, p. 119; New Hampshire. — *Purdie*, Bull. Nutt. Club, iv, 1879, p. 186; Connecticut. — *Deane*, Bull. Nutt. Club, v, 1880, p. 50; Maine, breeding!

It is singular how rapidly the notices accumulated, when once beginning, after so long a period of silence or doubt on the subject. The best article is that furnished by Dr. Brewer, who goes very fully into the matter, giving the interesting details of the Logger-

head's breeding in Maine and Vermont. The first authentic notice of its occurrence in New England was furnished by Mr. Purdie, on the strength of Mr. S. J. May's shooting the bird at West Newton, Mass., Oct. 21, 1872. The specimen recorded by Mr. Allen was taken by Mr. N. Vickary; Mr. Merriam's was secured by W. W. Coe. Mr. Deane's New Hampshire bird was taken near Concord, Jan. 20, 1879. According to his Maine record of 1880, a Loggerhead was taken with a nest and four eggs, at Abbott, Me., May 25, 1878, by Mr. H. R. True. Mr. Purdie has been specially active in bringing the history of the bird forward. His notices of 1879 refer to Maine and Connecticut cases. In the former State, Mr. S. E. Bowles discovered three nests near Bangor; in the latter, Mr. J. N. Clark, of Saybrook, secured two specimens there, in November, 1878, and January, 1879. Dr. Brewer's valuable account should be consulted for the particulars of nesting in Vermont and Maine.

It is proper to add, that some of these Loggerheads are explicitly stated to resemble *excubitorides* closely; and in fact it is only by the predominance of slight characteristics one way or the other that any of the smaller Shrikes found in New England can be referred to either variety.

[Since the above account was penned, Mr. Brewster has recorded in Bull. Nutt. Club, vi, 1881, p. 55, another Massachusetts specimen — a young male — shot in Brookline in February, 1879, by Mr. Arthur Smith.]

WHITE-RUMPED LOGGERHEAD SHRIKE.

LANIUS LUDOVICIANUS EXCUBITORIDES (*Sw.*) *Coues.*

Chars. With the size, and essential characters of the head-stripe, of *ludovicianus*, and the under parts, as in that species, not, or not obviously, waved; but with the clear light ash upper parts, and hoary whitish supraciliary line, scapulars, and rump, of *borealis*. "Extreme examples of *ludovicianus* and *excubitorides* look very different, but they are observed to melt into each other when many specimens are compared, so that no specific character can be assigned." Some of the New England specimens are of this mixed character, rendering it doubtful which variety such Loggerheads may most properly be considered to represent.

The assignation of this variety to New England probably arose from a remark made many years ago by Nuttall (*Man. Orn.*, ii, 1834, p. 564). Emmons and Peabody appear to have gone upon this alone; and when Coues retained the bird in his list of 1868, he was obliged to say: "of very doubtful occurrence" (*Pr. Ess. Inst.*, v, 1868, p. 277). In 1875, Dr. Brewer very properly declined to recognize it, with the remark that it "should be excluded until its claim is established by positive proof." Such evidence has lately been furnished by Mr. Purdie (*Bull. Nutt. Club*, ii, 1877, p. 21), who states that Mr. Jencks shot a typical specimen in Cranston, R. I., Sept. 2, 1873. This is the first and so far the only authentic record of actual capture within our limits. But the bird is well known to occur in New York and Canada, in both of which regions it breeds, and instances of its presence in New England will doubtless accumulate, as those relating to the true Loggerhead have already done. As many such specimens will partake in varying degree of the

characters of each variety, the ingenuity of writers will be displayed in worrying over the attempt to distinguish on paper birds which nature has thus far been unsuccessful in separating from each other ; and much confusion is likely to be the result of their efforts.

FAMILY FRINGILLIDÆ : FINCHES.

PINE GROSBEAK.

PINICOLA ENUCLEATOR (*L.*) *Cab.*

Chars. Adult male : Carmine-red, paler or whitish on the belly, streaked with blackish on the back ; wings and tail dusky, with whitish edging, the former also with two white cross-bars. Bill and feet blackish. Female : Ashy-gray, paler below, marked with brownish-yellow on the head and rump. There is great difference in the shade of red of the male, and in the saffron markings of the female. It is one of the largest of our *Fringillidæ*, with a remarkably short, stout bill, convex in all its outlines, and overhanging tip of upper mandible — almost parrot-like. Length, 8.00–9.00 ; extent, about 14.00 ; wing, 4.50 ; tail, 4.00 ; bill, 0.50 ; tarsus, 0.90.

Resident in northern New England, elsewhere a migrant and a winter visitant. There is no question that this large and handsome Grosbeak breeds in some parts of Maine, New Hampshire, and Vermont, though the fact remains to be established by actual discovery of a properly identified nest. A nest with two eggs, found by Mr. Boardman at Calais, was supposed with reason to belong to this bird. Mr. Purdie informs me that he saw birds feeding their young in New Hampshire, the last of July ; and Mr. Brewster has described the earliest plumage of the male from a specimen shot at Upton, Me., August 27th, 1874. Like species of *Loxia*, *Ægiothus*, and *Plectrophanes*, the boreal bird

is irregular in its appearance in different seasons, being sometimes abundant in southern parts, at others quite rare. It is generally observed from November until April. Probably no one supposes that numbers of the birds do not spread at large in southern New England; but their movements are erratic, being doubtless largely dependent upon the weather and the state of the food-supply. According to Dr. Brewer, they are sometimes extremely abundant about Boston, from December until March, feeding chiefly upon the berries of the red cedar, and being so little used to danger that they could be knocked down with poles, or caught alive in butterfly nets. Numbers were destroyed for the market, and others were caged alive. Severe "north-easters" drive many of the Grosbeaks from their usual winter resorts, sometimes sending them in flocks with the Red-polls and Long-spurs into the Middle and even the Southern States. When wandering about in such fashion, the Grosbeaks are not entirely confined to coniferous tracts, as implied in the name, and few of the carmined males are seen in comparison with the numbers of the gray young and females which are usually observed. The loud, rich song is rarely heard except in the summer haunts of the bird.*

* In this connection it may be observed, that the Evening Grosbeak, *Hesperiphona vespertina*, will doubtless be added hereafter to the list, this species having been observed so near the New England line as to render its occurrence within our limits extremely probable. (See *Coues*, Pr. Essex Inst., v, 1868, p. 312; Bull. Nutt. Club, iv, 1879, p. 74.)

PURPLE GROSBEAK.

CARPODACUS PURPUREUS (*Gm.*) *Gray.*

Chars. Male, adult: Red, most intense on the head, mixed with dusky streaks on the back, fading to white on the belly and vent. Wings and tail dusky, with reddish edgings of the feathers. Ruff of hoary whitish feathers at base of bill; bill and feet horn-colored. The shade of red is very variable, from rosy or even bronzy to intense crimson, particularly on the head; there is little if any "purple" tinge, the name "Purple" Finch, and the use of this word in old descriptions, having been due to the very faulty coloring of Catesby's plate. The bird is not crested, but has a habit of erecting the feathers of the head. Bill very stout and turgid. Female, and young male: No red; general color olive-brown, everywhere streaked with whitish, the feathers having dark centres and pale edges; belly and vent white; obscure whitish maxillary and supraciliary lines. Males changing show every gradation between the colors of the opposite sexes; they frequently have saffron or bronzy tints. The female resembles in color some of the streaked sparrows, but will be recognized by the short stout bill, small feet, long pointed wings and short emarginate tail. Length, 5.75-6.25; wing, 3.00-3.25; tail, 2.25-2.50; tarsus, 0.60; middle toe and claw, 0.85; bill, scarcely 0.50.

Though given by Dr. Brewer only as a "summer resident," and doubtless more abundant at that season than during the opposite period of the year, this charming bird is nevertheless found in New England at all times. The "Purple Finch," or "Linnet," as it is commonly called, breeds abundantly in the Canadian and Alleghanian Faunæ—the latter being in fact its centre of abundance in the breeding season; at which time the bird is probably nowhere more numerous than in Massachusetts. It mostly or entirely withdraws from the northerly portions of its summer home, and great numbers spread in winter over the Middle and Southern

States; but many others regularly pass that season in southern New England. Their ranks recruited by the new arrivals in early April, the Linnets soon become very noticeable birds, and they continue in undiminished numbers until October. They also appear to be on the increase in some parts of New England, where progressive horticulture invites their presence, for they are very fond of feeding on the blossoms of fruit-trees, and have earned the reputation, not wholly undeserved, of doing much damage in this way. Like the "House Finch" (*Carpodacus frontalis*) of the southwest, this species shows special aptitude for the society of man, and nests by preference in the most thickly settled and well cultivated localities; where its sweet song and gay colors would make it a great favorite, were it not for the way it

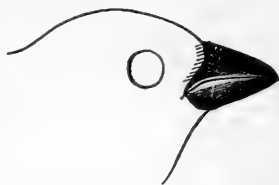


FIG. 54. — BILL OF PURPLE GROSBEEK. (Natural size.)

has of operating in fruit-blossoms. Among its own kind, it shows the same familiar and sociable traits that it is inclined to display toward man, and is almost always found in flocks, except when paired for the season. Its manners are habitually gentle and agreeable, notwithstanding the differences of opinion that not seldom occasion those exhibitions of temper which the spirited bird is likely to give when irritated. The nest will be found situated on the horizontal branch of a tree, or in a fork, at any moderate distance from the ground, preference being shown for evergreens and orchard-trees. The materials employed are most miscellaneous — weed-stalks, bark-strips, rootlets, grasses — almost any vegetable fibre being avail-

able; the rather flat and shallow structure being usually lined with hairs. The eggs, to the number of four or five, are pale dull greenish or almost whitish in ground-color, sparsely sprinkled and scratched, chiefly at the larger end, with rather small blackish surface-markings and lilac shell-spots; they measure about 0.85 by 0.65. Both nest and eggs may remind one of the Chipping Sparrow's on a large scale. Two sets are commonly laid, at least in southern New England; the first about the end of May, the next in July. The male does not gain his full dress the first year, and more gray than red birds are always to be seen.

WHITE-WINGED CROSSBILL.

LOXIA LEUCOPTERA Gm.

Chars. Male, adult: Rosy-red; feathers of the back dark-centred; wings and tail blackish, the former with two conspicuous white cross-bars. Bill horn-color; both mandibles falcate, with crossed points. The shade of red varies greatly, but is never bricky or cinnabar, as in the other species of *Loxia*. Female and young: Olive-brown, the feathers dark-centred; rump saffron or gamboge yellow; wing-bars present. Length, 5.75-6.00; wing, 3.40; tail, 2.25, forked; bill, 0.65; tarsus, 0.65.

In the Canadian Fauna resident; elsewhere in New England an irregular winter visitor, of greater or less rarity. The bird has however been seen in Massachusetts in summer, Mr. Maynard having taken a specimen at Newtonville in June. The Crossbills of both species are birds of the most strongly-marked originality of character, and it is never safe to predict what they may or may not be found about. Their most re-

markable habit is that of breeding in *winter*, or very early in the spring, when one would think it impossible that the callow young could endure the rigors of the season. They are most devoted parents, seeming entirely insensible of danger in the defence of their homes; and at all times, indeed, betray a confidence in man that is too often misplaced, and that seems the height of folly to one who knows as much of human



FIG. 55. — WHITE WINGED CROSSBILL. (Reduced.)

nature as most people find out, sooner or later, to their cost. The birds are much attached to pine woods, the seeds of the conifers furnishing them abundant food, of a kind that their curiously shaped bills enable them to secure with great ease and address. From their summer resorts in the depth of evergreen woods the Crossbills come flocking in the fall to all other parts of New England and beyond, generally associated with the other species, or with Pine Grosbeaks and Redpolls, always gentle, unsuspecting, and apparently quite at their ease. They are not so common, how-

ever, as the Red Crossbills are, and both species take such freaks in deciding their course of action that their appearance can never be relied upon. It need surprise no one to come upon a pair of Crossbills breeding anywhere in New England, though the general tenor of the Crossbills' way is as above intimated; for they seem to be quite independent of weather and season. Their diet is not so exclusive as many suppose; the birds may sometimes be seen helping themselves to decayed garden fruits. Mr. Maynard has observed them feeding on the seeds of beach-grass, and has also found the stomach filled with canker-worms. The eggs are still considered a great prize, few having come to the knowledge of naturalists. They are described as pale blue, with the larger end rather thickly spattered with fine dots of black and ashy-lilac; the size being 0.80×0.56 . They thus resemble those of the Purple Finch, and are probably indistinguishable from those of the Red Crossbill. Both species of Crossbills have a chattering or rattling note, usually uttered as they fly; but the true song is seldom heard south of their nesting grounds.

Dr. Brewer gives an interesting account of a pair of these birds which he kept for some time in a cage. They grew very tame, and made interesting pets. Their movements were parrot-like, though more rapid and easy, as they clung to the upper and side wires of the cage with their feet, and seemed to enjoy the practice of thus walking hanging head downward. They were both good singers, uttering irregular and varied but musical notes, and fed readily upon almost any kind of food, though seeming to be specially fond of slices of apple.

AMERICAN RED CROSSBILL.

LOXIA CURVIROSTRA AMERICANA (*Wils.*) *Coues.*

Chars. Male, adult: Brick-red, not rosy, the feathers of the back with dusky centres; wings and tail dusky, without white bars. The shade of red varies interminably, but is probably never of the rosy hue characteristic of *L. leucoptera*. Young birds and females resemble each other and the corresponding conditions of *leucoptera*, but have no white on the wings. Bronzy-red and even yellow males are sometimes seen. Young males changing show confused characters of the two sexes; besides the yellow regularly present in the female and young, there is often a good deal of saffron or gamboge coloring of immature males. Size of the last species.

The remarks made respecting the White-winged Crossbill are equally applicable to the present species, with the single exception that the Red Crossbill is much more numerous than its relative. It is therefore, but only for this reason, more to be depended upon as a regular migrant and winter visitant in southern New England; for its disposition is not less freaky, nor are its movements less erratic, than in the case of the White-winged. Both species in fact are often seen together, in relative numbers corresponding to the greater general abundance of the Red Crossbill. Probably for the same reason more has been learned of the nidification of the latter. We have the excellent authority of Mr. Boardman for its nesting in Maine during the month of February. A Vermont instance first published by Dr. Brewer is also in full circulation now, and we faithfully repeat that Mr. Charles S. Paine found a nest on an upper branch of a leafless elm in East Randolph, early in March, when the ground was

covered with snow, and the weather was severe. The parents were so devoted to their charge that they were removed from the nest by hand. The eggs were four in number, measuring 0.85×0.53 , of a greenish-white ground-color, beautifully blotched, marbled, and dotted with various shades of lilac and purplish-brown. According to Mr. Allen some specimens procured by Mr. Horace Mann, at Weston, Mass., in May, 1862, were so immature that it seemed hardly possible to suppose they were not bred in the immediate vicinity. Mr. E. P. Bicknell has lately given some interesting particulars of a nest found in New York, near the Connecticut line, April 22, 1879 (Bull. Nutt. Club, v, 1880, p. 7). Such facts as these corroborate and establish what has been said respecting the preceding species — that a pair of Crossbills may be found nesting anywhere in New England.

RED-POLL LINNET.

ÆGIOTHUS LINARIA (L.) Cab.

Chars. A small species, with extremely acute bill, conspicuously ruffed at base of upper mandible, long pointed wings and rather short forked tail, nearly all the plumage streaked with light and dark colors; crown with a crimson patch; chin dusky. Male, adult: Upper parts streaked with flaxen and dusky in about equal amounts; rump rosy-white, always streaked with dusky; below, white, heavily streaked except on the belly, the breast tinged with rosy; bill mostly yellow, but black in summer; feet blackish. Female and young: Similar, and showing the crimson crown-patch, but lacking the rosy on the rump and breast. Length, 5.00–5.50; extent, 8.50; wing, 2.75; tail, 2.25; middle toe and claw as long as the tarsus.

This interesting bird only occurs in New England as a migrant and winter visitant from the North, being limited in southward extension in the breeding season by the Hudsonian Fauna. Like other boreal *Fringilidæ* which come south in the fall from their breeding grounds in high latitudes, the Red-poll occurs in flocks of greater or less extent, often in company with Pine Grosbeaks and Crossbills; but is so irregular in its movements that its appearance cannot be relied upon, and that the times of its entering and leaving our country cannot be given with precision. It is commonly seen from November to March, both inclusive, in roving flocks, which roam about woods, groves, and weedy fields, wandering incessantly in search of the seeds which at this season constitute their sole fare. Though not a wary or suspicious bird, it is timid and easily startled from its feeding grounds, when the alarmed flock hurries to the top of some leafless tree, until sufficiently reassured to descend again to the weeds and scatter in search of food. Some seasons the Red-polls are among the most abundant winter birds of southern New England; at others none may appear in the same localities where they were before so numerous. They have an agreeable call-note, frequently uttered when the flock is dispersed to glean for food, or when roving in a compact body from place to place. It resembles that of the Goldfinch and Pine Siskin, having much of the same lisping sibilant quality; and indeed the general habits of the Red-polls in winter remind one of those of the familiar Thistle-bird at the same season. The eggs, four or five in number, are very pale bluish, finely speckled all over with reddish-brown, and measure about 0.65 by 0.52.

AMERICAN MEALY RED-POLL.

ÆGIOTHUS EXILIPES Coues.

Chars. Similar to the common Red-poll. Colors paler, white replacing the flaxen of *linaria*, and often predominating over the dark streaking; rump white or rosy-white, entirely unmarked; breast pale rosy; streaks on the sides slight and sparse; bill very small, heavily ruffed at base of upper mandible; feet remarkably small, the middle toe and claw together hardly as long as the tarsus. General dimensions those of *linaria*.

The true "Mealy Red-poll," *Ægiothus canescens*, is given by Dr. Brewer in his List of 1875 as a bird of New England; but it has never been known to occur there, nor indeed anywhere in North America, the present species being doubtless the bird he had in view. The American Mealy Red-poll, which represents in continental America the bird of Greenland, is even a more boreal species than *Æ. linaria*, apparently of rare and exceptional occurrence in New England. It has however been occasionally seen there in winter, as reported by various writers since the days of Audubon. Whatever be its true *status*, as compared with other hyperborean races of Red-polls, it is easily distinguished from *linaria* by the pure rosy-white, unstreaked rump, and other characteristics given in the above description. It is perhaps less rare and exceptional in New England than appears to be the case — not one Red-poll in a thousand of those visiting us in winter is shot and examined, and the general similarity of the two kinds render the rarer one very liable to be overlooked. It was only allowed by Dr. Brewer to be found in eastern Maine (Pr. Bost. Soc., xvii,

1875, p. 441); but Mr. W. A. Jeffries took the liberty of shooting a Mealy Red-poll in Swampscott, Mass., Nov. 16, 1878 (Bull. Nutt. Club, iv, Apr., 1879, p. 121), and Dr. Brewer, in alluding to this circumstance, speaks of another Massachusetts specimen which he found in the collection of F. P. Atkinson (Pr. Bost. Soc., xx, 1879, p. 270). Mr. J. A. Allen had previously attributed the bird to Massachusetts (Am. Nat., iii, 1870, p. 583), although he was at that time averse to consider it as a good species, he having recognized among a number of Red-polls shot in that State four of the supposed species given in Dr. Coues's "Monograph."

BREWSTER'S LINNET.

LINOTA FLAVIROSTRIS BREWSTERI (*Rdgw.*) *Coues.*

Chars. With the general appearance of an immature *Ægiothus*, this bird will be recognized by absence of any crimson on the crown and of black on the chin, a peculiar yellowish shade on the lower back, and somewhat different proportions.

The type and only known specimen of this alleged species was shot out of a flock of Red-polls at Waltham, Mass., Nov. 1, 1870, by Mr. William Brewster, and described as new by Mr. Ridgway in the American Naturalist, vi, July, 1872, p. 433. Nothing further being known of the bird, we are much in the dark respecting its real character, and the circumstances of its presence in New England. It is apparently not a Red-poll (*Ægiothus*), and is certainly different from any recognized North American bird; but its relationship to some European species is still in question.

AMERICAN GOLDFINCH; THISTLE-BIRD;
YELLOW-BIRD.ASTRAGALINUS TRISTIS (*Linn.*) *Cab.*

Chars. Male in summer: Clear bright yellow, whitening on the tail-coverts; the head with a black cap; the wings and tail black, the former edged and crossed, the latter spotted, with white; lesser wing-coverts yellow; bill and feet flesh-colored. Male, from September to the following April: The yellow replaced by flaxen-brown, paler or whitish below, the black cap wanting. Female: Like the winter male, but more of an olivaceous shade above, and soiled yellowish below; no black cap; wings and tail merely dusky instead of black, with whitish markings. Length nearly or about 4.75; extent, 8.00; wing, 2.75; tail, 2.00, forked.

This is one of our common and familiar birds, of gay colors, sweet song, agreeable presence, and innocent, engaging habits — altogether quite worthy of the favor with which it is regarded by all. Though giving the impression of a delicate bird, like other brightly plumaged species which bring, as it were, suspicion of tropical luxury to our stricter climate, the Thistle-bird is really quite a hardy little creature, capable of taking a New England winter as it comes, anywhere in the Alleghanian Fauna. Those which are reared north of this retire in the fall, but from Massachusetts southward the flaxen-haired troops of these child-like Finches remain all the year round, describing in the storm the same smooth wavy line of flight that marks their rising to the summer breeze, lispng meanwhile their gentle thoughts no less contentedly than when they take the gold and jet from the lavish hand of spring. When pairing time comes, the Yellow-birds dissociate; leaving the patches of thistle and waste

weed, whose enduring seeds had served them well in periods of scarcity, they enter cultivated ground, and generally choose to nest in a shade or fruit tree, near the house — at farthest by the roadside, or in the adjoining neglected field. A neat, compact, and substantial fabric, of the most miscellaneous material, so it be soft, warm, and susceptible of felting, is placed in the crotch formed by several upright twigs, or in the fork of a branchlet, anywhere from a man's height to twenty or thirty feet from the ground. The nest is deeply cupped, with a well-turned brim, and smoothly lined with plant-down, or sometimes hairs; the whole structure resembling that of the Summer Warbler, or one of the smaller Flycatchers. The eggs, from four to six in number, resemble the paler sorts of Blue-bird eggs which we often see, being faintly bluish-white, and normally without any markings; but they are of course much smaller, measuring only about 0.65×0.50 . The Finches occupy themselves very assiduously and persistently in their household affairs, which, beginning early in June, are not entirely concluded until some time in August; during which period more than one brood is commonly the happy result of their industrious mutual devotion. In August, when sturdy Compositæ assert the full power of that invincible order of plants, overrunning the garden, field and wayside, blowing their thousand-seed everywhere, the Goldfinches doff satin for linen, and grow quite comfortably commonplace, as befits their homely attire. The flocks, so long separated and engrossed in individual cares, make up again, with all the rising generation as new-comers, to loiter about the kitchen-gardens, the patches of truculent thistles that obstruct the

way, and all the nameless nooks where seeding weeds abound. The song of summer passes with the brilliant plumage it inspires; but the birds seem never to tire of the twittering gossip they give each other in token of the harmony that prevails among these companionable creatures. Some, less satisfied or less confident, make off in October to more congenial winter homes; but many remain on hand to greet with hospitable words the roving bands of Red-polls which come from the north in the depth of winter.

PINE LINNET; AMERICAN SISKIN.

CHRYSOMITRIS PINUS (Wils.) Bp.

Chars. Above, continuously streaked with dusky and olive-brown or flaxen; below, similarly streaked with dusky and whitish; the whole plumage more or less suffused with yellowish, especially on the rump; bases and edges of the wing- and tail-feathers more or less extensively yellow; no red anywhere; no definite black on the head. Bill and feet dark. Plumage very variable in extent and purity of the sulphury-yellow. Young birds more or less suffused with buff or flaxen. The yellow of the wings and tail is peculiar to this species. The sexes are alike. Length, 4.75; extent, 8.75; wing, 2.75, pointed; tail, 1.75, forked.

This Siskin is not distantly related to the Red-poll and Crossbill, like which species it is a bird of irregular movements; the manner of its presence in New England being therefore so uncertain as to require qualified expression. Properly speaking, it belongs to the Canadian Fauna, and such area limits its southward dispersion in the breeding season; the bird being hence resident in northern New England, a migrant or winter visitant in other parts of this country.

In Maine and northerly or alpine Vermont and New Hampshire, where the pine tracts invite a summer home, it sometimes stays all the year round, and is to be found in winter with Red-polls and Crossbills; but a migration of most individuals commonly occurs, spreading the birds through parts of New England where they are unknown to breed, and thence onward along the Atlantic States even to Florida. Again, Siskins have been found nesting in the Alleghanian Fauna, as for example at Cambridge, Mass. In the last-named State however, as well as in Connecticut and Rhode Island, they are chiefly seen from October to May, in flocks, associated with Goldfinches. Their strong instinct of sociability is seldom entirely overcome, even in the pairing season; for they often or usually breed in communities, large numbers occupying for that purpose the same tract of evergreen wood or swamp, sometimes shared by equal numbers of Crossbills. An interesting account of such a nesting-place in New York State has been given by Mr. Merriam (*Forest and Stream*, x, 1878, p. 463). The flocks which "make up" in the fall sometimes number hundreds of individuals, and scour the country in the most erratic manner, like Red-polls; but smaller troops are oftener observed to roam about in quest of food, conducting themselves much like Goldfinches under the same circumstances. The lisping, querulous call-notes, the smoothly undulating mode of flight, and the general appearance of Goldfinches and Siskins, as well as their food and manner of procuring it, are much the same. They are seed-eaters in the strictest sense, but fond of varying their fare to the utmost; now rising in numbers to husk the fruit of the largest

conifers, now falling with equal avidity upon waste weedy tracts, to glean the seeds of coarse plants near the ground. The gullet is very capacious, almost like the crop of a fowl or pigeon, and the greedy birds sometimes stuff themselves full to the throat — putting more grist in the hopper than the gizzard can grind at once. They are not less irregular in their times of nesting than in their other habits; but they breed early as a rule. The Cambridge nest above mentioned had its full complement of four eggs on the 9th of May; and Mr. Merriam's New York observations upon the nests were made in April. Common and well-known as the birds themselves are, the nest and eggs have seldom come to the notice of naturalists; for the structure is usually placed high up in evergreen trees, artfully concealed in the thick tufts of foliage. The eggs are more like Red-polls' than Goldfinches', being of a decided though pale greenish ground-color, and quite spotted with brownish, chiefly on the larger end; they measure about 0.70×0.50 .

SNOW BUNTING; SNOW-FLAKE.

PLECTROPHANES NIVALIS (L.) Mey.

Chars. In summer: Pure white, the middle of the back, the wings, and the tail, mostly black; bill and feet black. Seldom if ever seen in this perfect dress in the United States. As found with us, the white is variously clouded with rich warm brown, which colors most of the upper parts, washes along the sides of the body, forms a collar on the breast and a patch on the ears, and deepens to blackish on the crown; the black dorsal area is mixed with brown and white; the feet are black as in summer, but the bill is mostly or entirely yellowish. Length, about 7.00; extent, 13.00; wing, 4.50; tail, 2.75.

The "Snow-flake" is well named; it comes and goes with these beautiful crystallizations as if itself one of them, and comes at times only less thickly. Thousands whirl into New England late in the fall, on wings as wayward as those of the storm that urges them on; but, though thus irregular in their appearance, according to stress of weather, no winter passes without its Buntings, and it is not until April that the last of the birds is seen. Under such circumstances the whole of New England is visited, one season or another; but the presence of flocks of Snow-birds in any given locality is fortuitous, and the more so, of course, the farther south be the spot. During excursions protracted so far from their summer haunts, and under conditions which leave to the birds little scope for individual preferences, the Buntings are not less gregarious than Red-polls; being usually found in large assemblies, or not at all. They are terrestrial in habits—quite as much so as Shore-larks or Pipits; they run nimbly over the ground, where their food is gleaned, and appear to have some difficulty in perching; hence, they are usually seen in the most open places, and not in the thickets to which some of the other boreal Finches resort during their visits. The desolation of places exposed in all their nakedness to the fury of mid-winter blasts is relieved by the presence of the hardy creatures; these "most picturesque of our winter-birds," as Minot says, which "often enliven an otherwise dreary scene, especially when flying; for they then seem almost like an animated storm."

Snow Buntings are so common in winter, that it need surprise no one to learn that now and then a flock, belated in its spring migration, lingers through the

summer. It was long since noted by Audubon, that a Snow-bird's nest was found in the White Mountains in July, 1831. Another case, equally rare and even more exceptional, considering the locality, is recorded by Allen — that of a pair which bred in Springfield, Mass., in the summer of 1862 (Pr. Essex Inst., iv, 1864, p. 70). According to Mr. Maynard, there is an authentic instance of the presence of a flock on Mt. Katahdin, in Maine, early in August, 1869. The following description of the nest and eggs is given by Coues (Birds Northwest, 1874, p. 119): "The few nests of the Snow-flake I have seen were built with a great quantity of a kind of short curly grass which grows in the Arctic regions, mixed with moss, the whole forming a very substantial structure, with walls an inch or more thick, and a small, deep cavity. This is warmly lined with a quantity of large feathers, from some water-fowl. They are built on the ground, often covered and hidden by tussocks of grass or even slabs of rock. The eggs are exceedingly variable in coloration as well as size. Thus, one measures 0.95 by 0.70, and another 0.97 by 0.62; an average is about 0.90 by 0.65. The ground is white or whitish, in some instances flecked all over with neutral tint shell-markings, overlaid by deep brown spots and scratches, especially at the butt. In other cases the former are wanting and we have a heavy wreath of confluent blotches of dull brown around the larger end; and again the whole surface may be obscurely mottled with pale chocolate." Those who have seen the Snow-flake at home in summer speak highly of its vocal ability, and have also a good word for the fidelity of the bright bird to its mate and its young.

LAPLAND LONGSPUR.

CENTROPHANES LAPPONICUS (L.) *Kaup.*

Chars. "Adult ♂: Whole head and throat jet black bordered with buffy or whitish, which forms a postocular line separating the black of the crown from that of the sides of the head; a broad chestnut cervical collar; upper parts in general blackish, streaked with buffy or whitish that edges all the feathers; below, whitish, the breast and sides black-streaked; wings dusky, the greater coverts and inner secondaries edged with dull bay; tail dusky, with oblique white areas on the outer feathers; bill yellowish, tipped with black; legs and feet black. Length, 6.00-6.50; wing, 3.25-3.50; tail, 2.50-2.75. Winter males show less black on the head, and the cervical chestnut is duller; the ♀ and young have no continuous black on the head, and the crown is streaked like the back; but there are traces of the cervical collar, whilst the generic characters will prevent confusion with any of the ordinary streaked Sparrows."—(*Coues.*)

This is a circumpolar species, like the Snow-flake, occurring in New England under precisely the same conditions that determine the presence of the latter. The two species have similar habits, and are usually found together; but in most places the Lapland Longspur is so much rarer than the Snow Bunting as to be considered quite a prize by the fortunate collector to secure it. It is, however, common enough on the Massachusetts coast in winter, especially among the Ipswich sand-hills.

In its Arctic summer home, the Longspur builds under a tussock of grass a thick nest of mosses and fine grasses, warmly lined with feathers, in which four to six eggs are deposited. These measure about 0.80×0.62 in size, and are quite dark-colored, like a Titlark's.

CHESTNUT-COLLARED LONGSPUR.

CENTROPHANES ORNATUS (*Towns.*) *Cab.*

Chars. "Adult ♂: A chestnut cervical collar, as in *lapponicus*, and upper parts streaked much as in that species, but grayer; nearly all the under parts continuously black, the throat yellowish; lower belly and crissum only whitish; in high plumage the black of the under parts is more or less mixed with intense ferrugineous, and sometimes this rich sienna color becomes continuous; crown and sides of head black, interrupted with white auricular and postocular stripes, and in high plumage with a white occipital spot; lesser wing-coverts black, or brownish-black; outer tail-feathers mostly or entirely white, and all the rest largely white from the base—a character that distinguishes the species in any plumage from the preceding; legs not black. ♀: With or without traces of the cervical collar; crown exactly like the back; generally no black on head or under parts; below, whitish, with slight dusky maxillary and pectoral streaks, and sometimes the whole breast black, edged with grayish. Immature males have the lesser wing-coverts like the back; but they show the black of the breast, veiled with gray tips of the feathers, long before any black appears on the head. Length, 5.50–6.00; wing, 3.00–3.30; tail, 2.00–2.30." — (*Coues.*)

A western species, whose occurrence in New England is purely accidental. Only one such instance is known, that of a specimen shot in Magnolia, near Gloucester, Mass., July 28, 1876, by Mr. C. W. Townsend. (See *Brewer*, Bull. Nutt. Club, ii, 1877, p. 78; Pr. Bost. Soc., xix, 1878, p. 239; *Allen*, Bull. Essex Inst., x, 1878, p. 16.) There is consequently no occasion to enter upon the history of this stranger, so unexpectedly and unaccountably borne to us from the boundless prairies of the Missouri or of the Saskatchewan.

IPSWICH SPARROW.

PASSERCULUS PRINCEPS *Mayn.*

Chars. "Back greyish; the middle of the feathers having a black centre edged with rufous. Top of head streaked with dusky and pale rufous, divided by a broad stripe of pale yellowish white. There is also a whitish superciliary stripe extending from the base of the bill to the back of the head. Ear-coverts greyish, with a rufous tinge. Quills brownish, edged with white on the outer web; scapularies, secondaries, and wing-coverts brownish-black, edged broadly with rufous, brightest on the secondaries; scapularies also edged narrowly with white; the ends of both rows of wing-coverts narrowly tipped with white, forming two rather indistinct bars across the wings. Tail brownish, with the tips of the feathers and terminal half of outer web of the outer tail-feathers pale yellowish white; the rest of the tail-feathers narrowly edged with the same. Under parts, including the under tail-coverts, pure white. Feathers of the sides of the throat, with a broad band across the breast and sides, streaked with rufous, with dusky centres. The throat is indistinctly spotted with dusky. A triangular spot on the sides of the neck, below the ear-coverts, pale buff; ears dusky. Bill dark brown, with the base of the under mandible paler. Eyes and feet brown. Differs from *Poæcetes gramineus*, which in general form it resembles, in having a central stripe on the head, and a general rufous appearance, also in having longer tarsi, toes, and claws. With *Passerculus savanna* it cannot justly be compared; it is much larger, and has a shorter or more obtuse bill. Ipswich, Mass., December 4, 1868. Length, 6.30; extent, 11.00; wing, 3.25; tail, 2.60; bill, about 0.45; tarsus, 0.95; middle toe, 0.80; hind claw, 0.40." — (*Maynard.*)

This Sparrow, at first supposed to be *Centronyx bairdi*, was discovered by Mr. Maynard on the sand-hills of Ipswich, Mass., which in places are covered with coarse grass, and include depressions which, except in summer, contain water and fresh grass; in one

of these places the first specimen was shot and another seen. Mr. Maynard has since obtained several more. Two other specimens measure: wing, 2.90; tail, 2.40; culmen, 0.50; tarsus, 0.85; middle toe, 0.65; hind claw, 0.30; and wing, 3.00; tail, 2.30; culmen, 0.50; tarsus, 0.85; middle toe, 0.60; claw, 0.30. Many additional specimens have since come to light, mostly in New England, where the species appears to be a regular migrant and winter visitant, especially along the coast, and by no means so rare a bird as it was at first supposed to be.

Of the bird in New York, Mr. H. A. Bailey* writes, 'that Mr. Frank E. Johnson, of Gravesend, Long Island, while collecting, December 20th, 1876, on Coney Island, shot three specimens of a Sparrow new to him, which were shown to Mr. George N. Lawrence and pronounced to be *P. princeps*.' They were shot on the salt meadows of the island, in company with *P. savanna* and *Melospiza palustris*. Mr. N. T. Lawrence † writes 'that he took a fine specimen at Rockaway, L. I., January 1st, 1878; it was in company with *P. savanna* and *Spizella monticola*. It was found among a low range of sand hills, and was very wild.' In the extreme north, Mr. William Brewster ‡ tells us that 'while collecting at Point Despreaux, New Brunswick, a female was secured;' he mentions a specimen taken by Mr. Willey, of Portland, at Cape Elizabeth, Me., March 15, 1875. Mr. N. C. Brown § is confident that he found this species, Octo-

* Bull. Nuttall Club, vol. ii, July, 1877, p. 78.

† Bull. Nuttall Club, vol. iii, April, 1878, p. 102.

‡ Bull. Nuttall Club, vol. i, July, 1876, p. 52.

§ Bull. Nuttall Club, vol. ii, January, 1877, p. 27.

ber 9, 1876, on the northwest shore of Lake Umbagog. Mr. C. H. Merriam* secured a fine specimen, on November 4, 1875, while collecting along the beach a few miles below New Haven, Ct.; another was seen but not captured. Mr. W. A. Jeffries,† recording from Massachusetts, says: 'On January 23, 1875, while collecting in Swampscott, Mass., I shot a female, in company with a few Snow Buntings. I did not again meet with it till October 26, 1878, when, by chance, it was noticed in the same locality in good numbers. My brother and myself shot eleven before December 1st, and one again on January 25, 1879. During November we searched for them carefully several times, and, with one exception, always shot one or more specimens. Probably as many rose out of range. From what I have seen or heard of this bird in this part of Massachusetts, I should give it as a late fall migrant, a few spending the winter here.' Through him we learn that it 'was generally very tame; hard to flush, running along the ground and crouching till within a few feet of the person pursuing. The later comers very shy, rising wildly. When discovered they gave no note or chirp of alarm.' He also says that 'the thinly scattered beach grass at the edge of some freshwater pond seemed to be their favorite feeding ground.' After carefully comparing the species with *P. savana* Mr. Jeffries concludes: 'Finally, I believe that *princeps* ought not to be retained as a specific name, as it does not cover greater variations than may be easily accounted for by well-known laws of climatic variation.' It will be safe, however, to recognize the

* Bull. Nuttall Club, vol. i, July, 1876, p. 52.

† Bull. Nuttall Club, vol. iv, April, 1879, p. 103.

specific validity of *princeps*, until specimens occur which cannot be distinguished from *savana*,[*] for thus far no such doubtful examples have been forthcoming.

SAVANNA SPARROW.

PASSERCULUS SAVANA (*Wils.*) *Bp.*

Chars. Thickly streaked everywhere above, on sides below, and across breast; line over eye, and the edge of the wing, yellowish; no chestnut on bend of wing; bill rather slight and acute; tail nearly even, without white lateral feathers; inner secondaries long and flowing, the longest of them nearly reaching to the end of the wing when closed. The upper parts are brownish-gray, variegated with blackish, grayish-white, and pale bay, the streaks largest on the interscapulars, smallest on the hind-neck. An obscure median pale line divides the crown, and there is often much yellowish suffusion about the head, besides the line over the eye. Under parts white, either pure or, in autumnal and juvenile specimens, tinged with buffy, the breast and sides thickly streaked with dusky — these markings being brown, dark-centred, mostly arrow-headed, linked in chains along the sides, sometimes aggregated in an obscure blotch on the breast. Wings plain dusky, the coverts and inner secondaries edged with black and tipped with bright bay; tail-feathers rather narrow and pointed, not conspicuously colored in any way. Bill dark above, pale below; feet delicate flesh-color. Length, 5.25–5.75; extent, about 8.50; wing, 2.50–2.75; tail, 2.00–2.25; tarsus, middle toe, and claw, together, 1.50; bill, under 0.50.

The Savanna is one of the most numerous of the New England Sparrows; it is found nearly all the year, being only absent during the three winter months, and perhaps in March. It abounds along the coast,

* [In some respects this bird is related to *P. rostratus* of the Pacific coast, and seems to take in New England much the same part that the latter does in California. — C.]

its favorite haunts being the salt marshes bordering the sea-shore, but may be found in large numbers in any open ground throughout the interior. I should not be surprised to learn that it occasionally winters in sheltered places in the Connecticut valley; but am not aware that such is actually the case. The bird usually makes its appearance early in April, and soon becomes generally distributed. Many pass on to more northerly breeding grounds, but many nestle with us; during the fall migrations in October, individuals are again to be seen in profusion, and the loiterers are not all gone till late in November. It is a thoroughly terrestrial bird, being one of those that best deserves the name of "Ground Sparrow," so indiscriminately applied to several distinct species in the vernacular of rural Yankees. It seldom alights, even for a moment, anywhere excepting upon the ground, where it runs swiftly with pretty steps, threading its way like a mouse through the grass. Always solicitous of concealment, it takes but short wayward flights when forced to rise on wing, soon dropping again into the favoring shelter of the herbage. A rather weak and drawling song is heard during the mating season; but this is not at all a vocal bird, and has at most times only a slight chirping note. The nest, as might be supposed, is placed on the ground — rather, *in* the ground, as it is sunken till the brim comes flush with the surface; it is a slight affair, of a few grass-stems, just to keep the eggs from the earth, and distinguishable in no way from those of several other ground-nesters. When caught in the act of incubation, the parent often flutters and tumbles along in the endeavor to attract attention to herself, and thus decoy the intruder away from

her treasures. The eggs are difficult to describe, being so motley in coloration, and so variable also in the extent and intensity of the markings. The ground-color, when not entirely obscured by confluent markings, is seen to be pale dull greenish, or some indefinable whitey-brown color. Some specimens are very heavily and uniformly overlaid with chocolate-brown blotches, mostly large and confluent; others are less closely clouded, having the blotches chiefly at the great end, and only dots elsewhere. The eggs most nearly resemble those of the Grass Finch, but are somewhat smaller, and usually darker — in fact, the Savanna's eggs are about the most heavily-colored of any Sparrow's, sometimes almost like a Titlark's in intensity and uniformity of the chocolate shade. They are four or five in number, about 0.70×0.50 in size; they are laid late in May, and again in July.

BAY-WINGED BUNTING; GRASS FINCH.

POECETES GRAMINEUS (*Gm.*) *Bd.*

Chars. Above, thickly streaked everywhere; the same on the sides below and across the breast. No yellow anywhere; lesser wing-coverts chestnut; two or three outer tail-feathers partly or wholly white. Above, gray, the feathers dusky-centred and pale-edged; below, white, usually with a buffy tinge, very thickly streaked with dusky brown across the breast and along the sides. Crown like the back, without evident median light stripe, but a whitish supraciliary line and eye-ring. More or less bright bay on the wings. Bill dark above, pale below; feet pale. A large, stout, full-chested Sparrow, easily recognized by the chestnut on the bend of the wing, and the white feathers that show when the tail is flirited in flight. Length, 5.75-6.25; extent, 10.50; wing, 2.90-3.25; tail, 2.25-2.75.

This is another of the abundant New England Sparrows which, from the circumstance of its nesting on the ground, is called "Ground Sparrow," and confused with several related species. But it is one of the most strongly-marked of all the plain-colored streaked Sparrows, and cannot be mistaken by any one possessing the slightest faculty of discrimination. It is not nearly so terrestrial a bird as the Savanna Sparrow, often flying among the bushes, and even mounting sizeable trees by the wayside, along the hedges, and in fields, sometimes in companies of a dozen or more individuals. It is one of the finest songsters among the Sparrows, having a sweet and sympathetic voice, which it delights to exercise, particularly in the evening — a habit so confirmed as to have gained for the Finch the pretty name of "Vesper-bird," bestowed by one of its most appreciative friends.

The birds come in troops to New England early in April, about the time that the Savannas make their appearance, and linger equally late in the fall; being prominent during the latter season among the hordes of Sparrows that throng the bush and brake. In the breeding season it is pretty equably distributed through the meadows, pastures, and waste fields of New England, and is less noticeable than during the migrations, for two reasons: it keeps pretty closely concealed in the grass, and it is not flocking. The nest is sunken in the ground to the level of the surface, or artfully concealed in a tuft of grass, being not easy to discover except by accident. The female does not desert her charge until almost trodden upon, when she will flutter off feigning lameness, seeking by such pious fraud to save her home, even at the risk of life. The eggs

are as difficult to describe intelligibly as those of the Savanna, and some samples are scarcely distinguishable, except by larger size, averaging 0.80 by 0.60. However, they are generally much lighter-colored, having a dull grayish-white ground, more or less clouded with chocolate brown, but are also usually scrawled with irregular umber-brown markings. The difference in general effect is very decided when, as I do in writing this, fifty or more Grass Finch eggs are compared with an equal number of those of the Savanna Sparrow; but it is not easy to convey the difference in a few words. Two broods are generally reared each season, and a third may even be brought to life; for the Bay-wing is prompt about it in the spring, laying sometimes by the first of May, and thus before the other Sparrows. The species is, upon the whole, the most abundant of our field-birds.

YELLOW-WINGED SPARROW.

COTURNICULUS PASSERINUS (*Wils.*) *Bp.*

Chars. Above, curiously variegated with black, gray, buff, and purplish-brown, disposed in short streaks and fine speckling, the crown being nearly black with a sharp median buff line, the interscapulars chiefly black with bay and buff edgings of the feathers, the hind neck and rump chiefly gray mixed with bay; wing-coverts and inner secondaries variegated like the back. Lower parts entirely unstreaked, of a rich buff color, fading to whitish on the belly. Edge of wing conspicuously yellow; lesser wing-coverts, and short line over eye, yellowish. Bill dark above, pale below; feet flesh-color. Young birds are streaked below, but the small size and peculiar proportions of parts will serve to identify the species. Length, 4.90-5.20; wing, 2.33, rounded; tail, scarcely 2.00, with very narrow pointed feathers, so short that the outstretched feet reach beyond it; bill and feet remarkably stout.

Though this queer little Sparrow is neither one of the commonest nor of the most widely distributed species in New England, yet its rarity has been exaggerated by some writers, doubtless upon the insufficient information likely to be acquired in the case of so sly and secretive a bird. We should note, in the first place, that it is practically restricted to the Carolinian and Alleghanian Faunæ, being thus wanting in most parts of Maine, New Hampshire, and Vermont. Next, if we remember that it keeps most sedulously concealed in rank herbage, rarely rising higher in the world than the top of a mullein, we should be at no loss to account for the obscurity that hangs over the history of this curious species. It has not even a song to attract attention, its best vocalization being scarcely stronger or more musical than the stridulation of a grasshopper. But if we tramp through weedy fields, especially in sandy sterile soil, we shall often startle the little creature from its persistent hiding, see it dart a few yards away with a wayward flight, and disappear from view as suddenly as it came in sight. Early in June, when the female is incubating, the males seem more ambitious than at other times, and often mount a weed, shrub, or fence-post to make their queer music — one of the sounds that an ornithologist learns to recognize without difficulty, though the casual ear might not separate it from the nameless noises that show how the field teems with life at this season. In such waste places as I have noted, the nest may be found by accident, sunken in the ground, overhung with a tuft of grass, and thus very closely concealed. The eggs, to the number of four or five, are very recognizable among those of other "Ground Sparrows," more resembling

Warbler eggs in their general style. They are of crystalline whiteness, flecked with various shades of reddish-brown — sometimes pretty uniformly so marked, sometimes the markings being larger and darker brown blotches, crowning the greater end. The eggs are decidedly rounder, or more nearly spherical than those of most Sparrows, measuring scarcely three-fourths of an inch in length by nearly two-thirds in breadth.

The Yellow-winged Sparrow is a rather late arrival, not coming until May, and apparently leaving in September. It is fairly to be called abundant in Connecticut; and in Massachusetts, Allen says, it is a "common and even abundant summer resident at favorable localities, especially in the Connecticut valley and near the sea-coast." As the bird has been the subject of some controversy between Dr. Brewer and other people, I present the following late records, which are self-explanatory: — *Putnam*, Pr. Essex Inst., i, 1856, p. 210; Essex Co., Mass.; common summer visitant. *Boardman*, Pr. Bost. Soc., ix, 1862, p. 126; Calais, Me.; rare summer visitant. *Allen*, Pr. Essex Inst., iv, 1864, p. 71; Springfield, Mass.; abundant summer visitant. *Coues*, Pr. Essex Inst., v, 1868, p. 282; New England, in summer, abundant, becoming less so northward. *Maynard*, Nat. Guide, 1870, p. 117; eastern Mass., common, breeding regularly. *Brewer*, Pr. Bost. Soc., xvii, 1875, p. 441; rare in southern New England! *Purdie*, Bull. Nutt. Club, i, 1876, p. 73; breeding numerously in southern New England. *Brewer*, Bull. Nutt. Club, i, 1876, p. 92; controversial; maintains his ground. *Purdie*, Bull. Nutt. Club, ii, 1877, p. 17; confirms his above observations, and

gives those of others. *Brewer*, Bull. Nutt. Club, ii, 1877, p. 47; explanatory. *Merriam*, Tr. Conn. Acad.; iv, 1877, p. 37; Connecticut; common summer resident. *Minot*, B. N. E., 1877, p. 192; Mass.; common in some places, rare in others. *Allen*, Bull. Essex Inst., x, 1878, p. 16; Massachusetts; common, and even abundant in some localities.

HENSLOW'S YELLOW-WINGED SPARROW.

COFURNICULUS HENSLOWI (*Aud.*) *Bp.*

Chars. Resembling *C. passerinus*; rather smaller, but tail longer, reaching beyond the outstretched feet, with extremely narrow and acute feathers; bill very stout, under parts with sharp black maxillary, pectoral and lateral streaks, wanting in adult *C. passerinus*.

The position taken by Dr. Brewer with respect to the rarity of the Yellow-winged Sparrow might have been held had he based his remarks upon the present bird instead; Henslow's Sparrow being, for aught we know to the contrary, a decidedly uncommon bird in New England. Its habits, however, being in all respects the same as those of its congener, and its appearance in life very similar, it would not be surprising if the rarity were somewhat exaggerated in this case also. We have as yet only an incompleated record, the bird not having been seen in many localities where it doubtless occurs. The times of its arrival and departure in all probability agree with those of the Yellow-winged Sparrow. The bird has been observed in Massachusetts more frequently than elsewhere, and is said to be more numerous in some places in that State

than its near relative. In Connecticut, Mr. Merriam states that it is a rare summer resident—a statement well attested by the fact that he was only able to include the species in his paper on the strength of a specimen received just in time from Dr. F. W. Hall, who shot it in worn breeding plumage, at Killingworth, Middlesex Co., July 18th, 1873 (Rev. B. Conn., 1877, p. 37). The Massachusetts record is more extensive than that relating to any other State (*Allen*, Pr. Essex Inst., iv, 1864, p. 71; *Samuels*, Rep. Sec'y Mass. Board Agric., 1863, appendix, p. xxiv; *Allen*, Am. Nat., iii, 1869, p. 632; *Maynard*, Nat. Guide, 1870, p. 117; *Brewster*, Bull. Nutt. Club, iii, 1878, p. 118; *Allen*, Bull. Essex Inst., x, 1878, p. 118). Mr. Deane has recently published an interesting notice of the breeding of the species in New Hampshire (Bull. Nutt. Club, iii, 1878, p. 39). The bird had not been reported north of Massachusetts when Mr. C. F. Goodhue, of Webster, N. H., placed his observations at Mr. Deane's disposal. He found the bird in Webster, April 17th, 1864, and in Boscawen, April 26th, 1875. On the 16th of August, 1877, several pairs were observed in a meadow in Salisbury, where they were breeding, and a nest containing five nearly fledged young was discovered in a bunch of grass growing in about two inches of water; it was a rather bulky structure of coarse grasses, with a lining of finer ones. The birds did not seem alarmed, but remained singing in some low bushes when the observer approached them within a few yards. An instance of how common such birds as these may really be in comparison with their apparent rarity, is given by Mr. Ridgway (Bull. Nutt. Club, iv, 1879, p. 238),

from observations made near Washington, D. C. Henslow's Buntings had scarcely been known in that vicinity, where, however, this observer found them to be very common and generally distributed, hearing them singing in July in every weedy meadow through which he passed. Eggs taken by Mr. Jouy, near Washington, resemble those of the Yellow-winged Sparrow, but are not purely white in ground-color, having a faint though evident greenish tinge. The nest containing them was built on the ground, in a tuft of clover, and was neatly constructed, for a ground-nest, having a well-turned brim, and being coherent enough to remove without difficulty. It contained four fresh eggs in June, measuring 0.75×0.60 , 0.75×0.58 , 0.75×0.56 , 0.76×0.60 .

SHARP-TAILED SPARROW.

AMMODRAMUS CAUDACUTUS (*Gm.*) *Sw.*

Chars. Above, olive-gray, sharply streaked on the back with blackish and whitish; crown darker than nape, with dusky streaks and an obscure median line of paler color; no decided yellow spot on the lore, but long supraciliary line and sides of head rich buff or orange-brown, enclosing dusky auriculars and a dark speck behind these; under parts whitish, before and along the sides tinged with buff of variable intensity, continuous with that on the sides of the head, the breast and sides sharply streaked with blackish. Edge of the wings yellow. Bill dark, extremely slender and acute (for a Finch's); feet livid bluish. Length, 5.25-5.50; wing, 2-25; tail, about 2.00, with narrowly lanceolate-acute feathers; bill, 0.50; tarsus, 0.80.

The Sharp-tailed is the more abundant of the two New England species of *Ammodramus*, and extends

farther north than *A. maritimus* is known to do, occurring along the entire coast. It is therefore wrongly given by Dr. Brewer as confined to southern New England — a mistake corrected in the first of his two supplementary lists. It is decidedly more northern in its distribution in summer, not only proceeding farther along the coast, as just said, but being also unknown to breed so far south as the Sea-side Sparrow has been

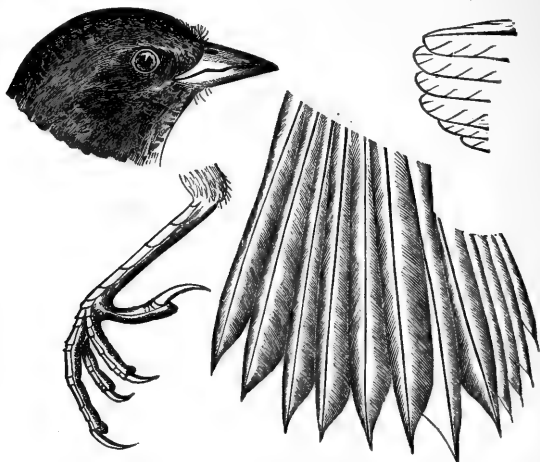


FIG. 56.—DETAILS OF STRUCTURE OF SHARP-TAILED SPARROW.
(Natural size.)

observed to do. Dr. Coues reports such difference from observations made at Fort Macon, North Carolina, where both species occur abundantly together during the migrations, the Sharp-tailed passing on however in spring, and recurring in fall, while the Sea-side is common during the summer. In New England both species are practically confined to the salt and brackish marshes of the coast and its immediate vicinity, and are among the least known to people at large of the

common New England birds — not only because their distribution is very local, as we have just seen, but also because their habits screen the birds from casual observation. They keep very closely in the shelter of the reeds and the rank salt herbage, taking but short and seemingly feeble flights when flushed, as is with some difficulty done. Neither species, probably, is so rare as some suppose; and as each one, like the Marsh Wren, colonizes certain spots without settling others to all appearance equally eligible, the actual numbers of the birds can scarcely be surmised. Thus, according to Mr. Merriam, great numbers "of both were found along the Quinnipiac River, in Connecticut, so far inland that the water was scarcely brackish; in some spots *maritimus* outnumbered *caudacutus*, but on the whole the reverse was the case. The Sharp-tailed Finches reach New England early in April, and remain until some time in October. The eggs of the first set are laid the last of May, or early in June; others, perhaps of a second batch, have been found in July. The nest is placed in a tuft of grass or other herbage, just out of the way of the water—some instinct teaching the birds enough about tides to answer their purpose. The eggs measure about 0.75×0.55 , and are grayish-white, thickly and pretty evenly speckled with brown; they could not be distinguished with certainty from some samples of Savanna Sparrow's eggs, nor readily from those of the Sea-side Sparrow.

This species has occasioned some controversy between the senior ornithologist of New England and other persons. See *Brown*, Bull. Nutt. Club, ii, 1877, p. 27; iii, 1878, p. 98; iv, 1879, p. 52; Maine. *Brewer*, *ibid.*, iii, 1878, p. 48, and p. 147; "apologetic"; Pr.

Bost. Soc., xix, 1878, p. 305. *Brewster*, Bull. Nutt. Club, ii, 1877, p. 28; Prince Edward's Island. From these and other records the following items are derived.

Mr. N. C. Brown, of Portland, Me., writing Nov. 12th, 1876, says: "I have found this species, now, I believe, for the first time recorded as a bird of Maine, a rare inhabitant of a certain part of the great marsh in Scarborough." Mr. Wm. Brewster, in speaking of the northern range of this bird, says, that Mr. Wm. Storer, of Cambridge, Mass., shot five specimens at Tiquish, Prince Edward's Island, August 2d and 3d, 1876. From the record it appears that others were observed, and Mr. Brewster properly remarks that the finding of these and Mr. Brown's specimen "render it extremely probable that it may occur regularly, at suitable localities, all along the intermediate line of coast." Dr. T. M. Brewer says that Mr. George O. Welch, of Lynn, Mass., found this species quite abundant on the shores of St. Andrew's Bay, lying between the eastern boundary of Maine and New Brunswick, the farthest eastern record up to that time. Mr. N. C. Brown, who has carefully studied the distribution of this bird in Maine, says: "Late in October, 1876, I observed a few individuals of this species on Pine Point, a sandy strip of land which forms the eastward extremity of the great Scarboro' marshes;" also, that this was "considerably eastward of their previously known range;" not having detected it before he carefully watched the place, and "not a bird was to be found until about October 1st. At that date great numbers appeared on the marshes and sea-beaches adjacent to Pine Point, and for a couple of weeks they

fairly swarmed in their favorite haunts." Later Mr. Brown states that half a dozen pairs remained during the summer 1879 in the marshes of Scarborough, Me., and he believes it to be a regular summer resident of that locality.

SEA-SIDE SPARROW.

AMMODRAMUS MARITIMUS (*Wils.*) *Sw.*

Chars. Above, dark olive-gray, obscurely streaked on the back and crown with dusky and pale gray; below, dull white, washed with the color of the back along the sides, and often tinged with brownish elsewhere, the breast and sides with obscure dusky streaks; some vague dark markings on the side of the head. Lore and edge of wing yellow, in decided contrast to the rest of the dull dark colors. Wings and tail plain dusky, with slight olivaceous edgings of the feathers, the wing-coverts and secondaries also somewhat margined with brown. Bill plumbeous; feet dark. Rather larger than *A. caudacutus*: length, 5.75-6.25; wing, 2.25-2.50; tail, 2.00; bill, 0.55; tarsus, 0.90.

There has long been some uncertainty respecting the presence of this bird in New England, perhaps largely due to the statement made by Coues in 1868, that he found it abundant "as far north as New Hampshire" (*Pr. Essex Inst.*, v, 1868, p. 282), where others have since failed to find it at all. Dr. Coues himself informs me that this record arose in a slip of the memory on his part, the birds which he found in plenty at Rye Beach, in the fall of 1860, having been Sharp-tailed Finches. As already stated in speaking of the last species, the Sea-side Sparrow is more southerly, and is not yet known to proceed beyond the Massachusetts coast, though there is every probability that, as a bird of

the Alleghanian as well as of the Carolinian Fauna, it will hereafter be detected on the shores of New Hampshire, and even of southern Maine — thus actually verifying a record which originated in error. We have already witnessed the Connecticut status of the bird, in citing Mr. Merriam's remarks in the last article; and Mr. Purdie has given us other observations in the *American Naturalist* (vii, 1873, p. 118). For Massachusetts, Dr. Brewer has furnished authentic and perhaps the first definite information, in recording the capture of a specimen by Mr. George O. Welch, at Nahant, in August, 1877 (*Bull. Nutt. Club*, iii, Jan., 1878, p. 48). Allen considers it "rare or accidental in the salt marshes along the coast" of that State, quoting Dr. Brewer's case as the only one on record. Its habits are practically identical with those of the Sharp-tailed Sparrow, and neither the nest nor the eggs can be distinguished with certainty from those of the latter, though there are some slight differences, appreciable by a practised field-naturalist.

LINCOLN'S SPARROW.

MELOSPIZA LINCOLNI (*Aud.*) *Bd.*

Chars. Below, white, with a definite belt of brownish-yellow across the breast, a wash of the same color along the sides, the whole under parts, excepting the belly, fully streaked with dusky. Upper parts like those of a Song Sparrow — grayish-brown, the crown and back with dusky, brown, and gray streaks; tail grayish-brown, the feathers usually with dark longitudinal shaft-lines; wings similar, without such shaft-lines, the coverts and secondaries blackish, with bay and whitish edgings. No yellow anywhere. Length, about 5.50; wing and tail, each, about 2.50.

Lincoln's Sparrow must be accounted a rare bird in New England—actually wanting, perhaps, in some parts, in others frequently observed, but on the whole a bird which straggles into these States in such loose and desultory fashion that it cannot be relied upon. It is characteristic of no Fauna, inhabiting North America at large; but, beyond the fact of its undoubted breeding in New England, and its usual occurrence during the migrations, little can be said with our present information. It has usually been considered so rare and irregular a straggler, that the few instances of its occurrence have been thought worth recording. It has chiefly been seen in Massachusetts and Connecticut. Mr. Merriam's notice is specially interesting: "Mr. Erwin I. Shores, of Suffield, Conn., writes me that it is '*not rare*' in that vicinity, where he took one specimen in 1874, and three more this spring (1877). Mr. Shores says that on May 23d, and again on June 2d, he 'saw one with small twigs in its bill,' hence, although he did not actually find the nest, there can be no reasonable doubt of its breeding. He further states: 'There is a small piece of woodland in this place where surely they cannot be considered rare. Have seen several that I have not been able to shoot. They are very shy. You just barely get a glimpse of one and have just time to get an idea of what it is, when down he goes into the thick shrubbery, and no amount of patient waiting will tempt him to come in sight again. Provoked, you determine to kill every one that comes in sight, and after the slaughter of half a dozen innocent Song or Swamp Sparrows, you conclude that that won't do. *Then*, perhaps, almost the first bird you leave will be Lincoln's Sparrow. I

think they are much more common than generally supposed, but are so shy and inhabit such bushy pastures, that they are hard to find'” (Rev. B. Conn., 1877, p. 38). A good account of the nesting of this species has lately been published by Mr. Egbert Bagg, Jr., from observations made in Hamilton Co., N. Y. (Bull. Nutt. Club, ii, 1878, p. 197); but no New England nests or eggs have ever been found. The eggs are not distinguishable from those of the Song Sparrow, though smaller; the nesting is quite similar.

SWAMP SPARROW.

MELOSPIZA PALUSTRIS (*Wils.*) *Bd.*

Chars. Crown bright bay or chestnut, blackening on the forehead, often with an obscure median ashy line, and usually streaked with black; cervix, entire sides of head and neck, and the breast, strongly ashy, with vague dark auricular and maxillary markings, the latter bounding the whitish chin, the ashy of the breast obsoletely streaky; belly whitish; sides, flanks, and crissum strongly shaded with brown, and faintly streaked; back and rump, brown, rather darker than the sides, boldly streaked with black and pale brown or grayish. Wings so strongly edged with bright bay as to appear almost uniformly of this color when viewed closed, but inner secondaries showing black with whitish edgings; tail likewise strongly edged with bay, and usually showing sharp black shaft lines. No yellowish anywhere; no tail-feathers white; further distinguished from its allies by the emphasis of its black, bay, and ash. In the full-plumaged male, the crown is as conspicuously chestnut and black as that of *Spizilla socialis*; in the female it is less brightly colored. Length, 5.50-6.00; wing and tail, each, 2.30-2.50.

Were it not for its abundance, this timid and secretive inhabitant of the thickest shrubbery would be little

known, so closely does it hug the dense covert which it instinctively chooses as a screen from the danger of notoriety. It seldom ventures so far from its retreat that a hurried flight of a few seconds will not enable it to regain the thicket, and no oftener climbs the bushes to any considerable height from the ground. Moreover, such cover as the bird prefers is that growing in greatest profusion in swampy or other wet places, access to which is doubly difficult from the treacherous yielding of the ground and the sturdy resistance of the mantling vegetation. If, however, we overcome such obstacles, and penetrate such recesses, we may be pretty sure to see the Swamp Sparrow in the comparatively free spaces beneath the woven canopy of foliage, fluttering in the shade, threading slyly among the briars, running nimbly over the ground, or even wading about in tiny pools. The nest will be found in a grassy tussock or low bush, such as a Song Sparrow might select, and is of much the same construction and general appearance; nor can the eggs be distinguished with any certainty, though perhaps averaging a trifle smaller. It is, therefore, needless to give any elaborate description. The bird is prompt in nesting, making ready for the eggs by the third week in May, and often producing another set some six weeks later. The modest little bird is a good musician, as might be supposed from his kinship with the sympathetic "*melodia*," and well deserves the compliments paid by Mr. Minot to the "sweet, clear trill" of spring-time, and warbling notes of the falling season. "I remember to have seen one at evening," he adds, "in the eccentric expression of his passion during the season of love, dart from a thicket, mount in the air, and take a rapid,

circuitous flight, continuously uttering a fine steady trill, until, having returned to the thicket, he dived into it, ejaculating a few broken musical notes, after which all was still." Common as the Swamp Sparrow is in New England in suitable places during the gestation of the year, it is still more numerous whilst migrating, and then also more likely to come under observation. It reaches our country betimes in April, and does not depart until November; having been seen at times so late in the latter month as to color a suspicion that some individuals may linger through the winter in sheltered southern localities, as the Song Sparrow is well known to do.

SONG SPARROW.

MELOSPIZA FASCIATA (*Gm.*) *Sc.*

Chars. Thickly streaked everywhere above, on the breast, and along the sides; under parts otherwise white, slightly shaded with brown on the flanks and crissum, the streaks being dusky with brown edges, usually collecting to form a blotch on the breast and a chain of maxillary stripes on each side of the throat. Crown dull bay, with fine black streaks, bordered and divided in two by ashy lines; vague brown or dusky markings on the ashy sides of the head. Middle of back with the streaks black, edged with ashy and bay; rump and hind-neck grayish-brown, with only a few bay marks. Wing-feathers with dull bay edgings, the coverts and inner secondaries marked like the middle of the back. Tail plain grayish-brown, usually with dark longitudinal shaft-lines on some or most of the feathers, and often with evident dark wavy cross-bars: whence the new-fashioned name of *fasciata*, revived from the early writers. No yellow or yellowish anywhere. Length, 6.00-6.50; wing, about 2.50; tail, nearly or quite 3.00.

An abundant summer resident throughout New England, and one of the best known birds of that season.

It may, however, be not so generally understood that the Song Sparrow resides all the year round in a large part of the country — at least from Massachusetts southward, and probably throughout the Alleghanian Fauna. It is extremely abundant in early spring and late fall months, becoming less numerous in the depth of winter, which it passes in the most secluded places, where the density of the cover protects it from the full rigor of the blasts. One of the most cheerful and persevering of songsters, as it is, this Sparrow often tunes its quivering pipe to the most dreary surroundings, the brief but hearty stave being one of the few snatches of bird-melody ever woven with "a winter's tale" in Puritanic stress of weather. I have sometimes fancied that our extremely orthodox forefathers must have had grave doubts about this bird — if they ever thought of anything so comfortable — it is such a happy, hearty, *natural* creature, that it must be very wicked, and ripe for a future, if any, in the place where they make red-hot cobblestones of the skulls of godless birds and babies. But being neither Puritanic nor Satanic — your choice for a penny — nor in any way troubled with doctrines that damn humanity and diabolize the Deity, the Song Sparrow flushes with music as soon as winter relaxes in the least, finding full voice in March, when those who have worried through the cold greet the new arrivals from the South, and all together fill a chorus to which the shrubbery resounds unceasingly, till some sharp wind comes along to remind the birds that time is fleeting, though their art be never so long. But the storm must repeat its warnings to dampen even an ardor that is never entirely quenched; for passion lingers long in breasts that have once felt the

glow, and it takes a good while to sober the Song Sparrows after their summer's hey-day. We still hear their trill, like a memory rather than a hope, when the woods and fields have reached the golden gates of fruition. Then many Sparrows, who have made up their minds to see it through, go into winter-quarters with much chirping of mutual encouragement, while others join the departing hosts which are off for the "sunny South."

Few nests, such as those of Swallows, Blue-birds, King-birds, Robins, and Chippies, are better known than those of the Song Sparrows, and their richly speckled eggs are among every boy's treasures. Not that I can any longer pretend to belong to that happily perverse fraternity—but I have, nevertheless, about a hundred evidences of at least twenty bitterly disappointed pairs of Song Sparrows before me for description. It is no easy task—I see so much difference among them in size, shape, and color, as I run my eye over the neat rows of trays, each containing from three to six specimens, and such close general similarity to the eggs of half a dozen other kinds of Sparrows. In size, several selected specimens run from 0.75 to 0.85 in length, averaging near the mean of these two numbers, by 0.55 to 0.60 in breadth. The pattern and precise effect of the markings is endlessly variable; but three eggs may be selected to illustrate the principal styles. One, the rarest, is of decidedly greenish-white ground-color, sparsely sprinkled with pale reddish-brown and lavender, in small pattern, and chiefly about the larger end—the ground-color in such cases being more obtrusive than the spotting. In another extreme, the whole surface is so thickly flecked

and clouded with chocolate that the grayish-white ground is almost entirely overlaid; such specimens are like the usual run of Savanna Sparrow eggs, but larger. A third style, decidedly the handsomest, is where either a greenish or grayish ground is very boldly marked with heavy blotches of rich umber brown, in several shades of intensity. These make very pretty objects, especially if the ground be bright, and the principal markings wreathed around the larger end. On the whole, it may be safely said that some Song Sparrow eggs resemble each other less than some other ones do the eggs of different Sparrows. The nest is not an affair of much art — it would be too much to expect a Sparrow to unite all the graces with an unquestionable muse — but is substantial, well appointed, and doubtless perfectly satisfactory to its builders, who bring together a very miscellaneous assortment of grasses, weeds, and leaves, and line the cavity with fine grass-stems and rootlets, together with hair in some cases. Being astir in housekeeping very early in the season, usually by “moving-day” in May, the Song Sparrows are able to bring up two or even three families in one season, and eggs may consequently be found nearly through the summer, as well as in May. The nest is placed in a bush, close to the ground, or upon the ground itself, under friendly shelter of the herbage, in field or pasture, by the roadside or in the hedge, rarely at any considerable height. Once in awhile an original pair will show eccentricity in choosing a hole in a tree or stump. I have known of such a case; Mr. Merriam speaks of another, where the pair selected a hole two feet from the ground; and Mr. Minot saw or heard of several vagaries, the birds hav-

ing in one instance nested in a broken jar. Birds habitually give themselves more freedom of choice in such matters than the ornithologists are usually disposed to allow them; and it is only in the cases of the commonest species, whose tastes and habits are best known to us, that we fully appreciate this fact, as well as one other, equally true, that different individuals of the same species may be very skilful or comparatively bungling in their architecture. I have occasionally been surprised at some things of this sort, which a barefooted boy has taken quite as a matter of course — and not that I knew more, but less, than the urchin did, about “the tricks and the manners” of the melodious feathered artisan.

BLACK SNOW-BIRD.

JUNCO HIEMALIS (*L.*) *Scl.*

Chars. Male: Blackish-ash; below, abruptly pure white from the breast backward; two or three outer tail-feathers white; bill white, usually with a pink flush and dark tip. Female, young, and most winter specimens: The slate-color impure, being grayish, or even decidedly brownish; inner secondaries edged with chestnut; color of bill more or less obscured. Length, about 6.50; extent, 9.50; wing and tail, each, 2.75-3.00.

The Black Snow-bird is one which can scarcely fail to interest alike the amateur and the scientific ornithologist. The former sees about his door, at times when bird-life offers comparatively little variety, a troop of active, hardy little creatures, in neat and becoming attire, begging of his bounty while they challenge the winter; and the latter finds in this spe-

cies one whose summer resorts define the Canadian Fauna with precision. Prof. Verrill makes the Snow-bird prominent in the limitation of this geographical area; and the very great southward extension of the range of the species in the breeding season, along the tops of mountains, is one of the clearest illustrations of reciprocity between altitude and latitude. At sea-level in New England, the bird nestles regularly as far south at least as Scarborough and Cape Elizabeth in Maine (Bull. Nutt. Club, iv, 1879, p. 107). It is known to breed abundantly in Massachusetts in the elevated portions of Berkshire County — a fact attested by repeated records which it is needless to cite; and it has been found nesting thence southward, on mountain-tops, into the Southern States. Wherever this occurrence is observed, the locality may be considered Canadian in faunal character, even though it be an isolated oasis in Alleghanian or Carolinian surroundings. Such circumstances, the knowledge of which has not long been in our possession, explain the suddenness with which Snow-birds are wont to appear in the fall, in the Southern and Middle as well as parts of the Eastern States, as harbingers of storm or cold weather. No long migration from the North is implied by such appearances; for the birds have only to fly down from the nearest mountain-tops where they had their summer "castles in the air."

A more erroneous record of the Snow-bird could scarcely be given than is expressed in Dr. Brewer's statement that the bird is a winter visitant in Southern, and a resident in Northern New England. It is chiefly a summer visitant in the latter, whence for the most part it withdraws in winter, few spending the

whole of that season north of Massachusetts ; while, as above explained, it is on the whole a permanent resident in Southern New England — on mountains in summer, elsewhere at other times. It is likely to disappear in November from those northerly parts where it may breed down to sea-level. In Massachusetts, excluding alpine localities, it is common from October until some time in May ; it reaches Connecticut early in October, and does not disappear until May.

The habits of the Snow-bird during that greater part of the year when it is trooping fearlessly about man's abode, with lively action and incessant chirping, are too well known to need description. It is most familiar just before and during snow-storms, when it seems instinctively to seek the countenance, if not the actual protection, of man ; returning to comparative seclusion in the shrubbery during more open weather, and making for the mountains in May, with a simple, sweet song by way of saying good-by. The nest is built on the ground, early in June, and is not to be distinguished with certainty from that of some other Sparrows which nest in a similar manner. A case of tree-building has been recorded by Mr. Maynard, Mr. Bailey having found a nest in a low spruce-tree, four feet from the ground. The eggs, numbering four or five, measuring about 0.80×0.60 , are dull white, grayish-white, or greenish-white, irregularly but plentifully speckled with various shades of reddish-brown. I do not think they are to be positively identified by any character, having a close general resemblance to several other kinds, laid by allied Sparrows ; but the parents, if seen, cannot well be mistaken. Two broods are reared each season.

OREGON SNOW-BIRD.

JUNCO OREGONUS (*Towns.*) *ScL.*

Chars. Head and neck all around, and breast, black; middle of back dull reddish-brown, and wings much edged with the same; below, from the breast, abruptly white, tinged on the side with pale reddish-brown. In the female and young the black is obscured by brownish, but the species may always be distinguished by an evident contrast in color between the interscapulars and head, and the fulvous wash on the sides. Size of the preceding.

This well-known Western species has once occurred in New England, where its appearance is of course entirely exceptional, like that of *Turdus naevius* or *Chondestes grammacus*. A specimen, the identity of which seems to have been placed beyond question, was shot at Watertown, Mass., March 25, 1874, as recorded by Mr. Brewster in the Bulletin of the Nuttall Ornithological Club, i, April, 1876, p. 19.

 TREE SPARROW.
SPIZELLA MONTICOLA (*Gm.*) *Bd.*

Chars. Crown chestnut, in the adult, without black on the forehead; in immature and winter specimens the feathers are usually skirted with gray. Upper mandible black, lower mostly yellow; legs brown, toes black. A grayish supraciliary and loreal line, with some chestnut marks on the side of the head. Under parts whitish, tinged with ash anteriorly, washed with brown on the flanks; a dusky blotch on the breast. Middle of back boldly streaked with black, bay, and flaxen; middle and lesser wing-coverts black, edged with bay and tipped with white, forming two cross-bars. A handsome Sparrow, largest of the genus, about equalling a Snow-bird in size.

Though a near relative of the familiar Chippy, the Tree Sparrow appears in New England under the very opposite conditions, being a northerly bird scarcely known among us except as a migrant and winter visitant, like some of the other boreal *Fringillidæ* we have already noticed. It is given in Mr. Allen's faunal lists as a species limited, like *Junco hiemalis*, in the breeding season by the Canadian Fauna, and therefore should be found nesting in Northern New England. But its true summer home is the Hudsonian Fauna, and I am unable to cite any instance of its breeding within our limits. It is one of the most abundant birds of winter, and also one which makes its appearance most regularly. Entering the Canadian Fauna in the fall, the Tree Sparrow becomes generally distributed by the latter part of October, and continues in numbers until late in April. It is usually found in shrubbery, flocking with numbers of its own kind, but scarcely associating with other species, unless it is the Snow-bird. The following picture of a winter scene in Dakota, with these brave little Sparrows in the foreground, will give an idea of their habits at that season; it is from Dr. Coues's "Birds of the Northwest," p. 147:

"At Fort Randall I found these birds as abundant as I have ever seen them anywhere, during pleasant weather in the month of October. All the undergrowth of the river-bottom was full of them, in troops sometimes numbering hundreds, singing as gaily, it seemed to me, as in spring-time. With the colder weather of the following month, so many moved off that I thought none would remain to endure the rigor of winter, but such proved to be not the case. The

remainder simply retreated to the deepest recesses of the shrubbery, where, protected from the biting winds, if not from the cold, they passed the winter, and to all appearances very comfortably. I account for their remaining at this inclement season, by the profusion of seeds of various kinds that are to be obtained during the whole winter; certainly, those that I shot were in good condition, and generally had the crop well filled. Their seclusion and quietness at this season is remarkable, and causes them to be in a great measure overlooked. On several occasions, when the thermometer was far below zero, the river frozen solid for two feet deep, and snow on the ground, I have unexpectedly come upon little groups of these birds, hiding away close to the ground among and under a net-work of vines and rank herbage, close enough to collect and retain a mantle of snow. When startled at such times they have a low, pleasant chirp as they flutter into sight among the bushes, scattering a little, but only to collect again and seek their snug retreat as soon as left to themselves. Whether rendered careless by the cold, or through a natural heedlessness, they are very tame at such times; they sit unconcernedly on the twigs, it may be but a few feet distant, chirping cheerfully, with the plumage all loosened and puffy, making very pretty "roly-poly" looking objects. There is a particular kind of plant here, the seeds of which endure all winter, furnishing a favorite repast. In a clump of these tall weeds dozens of the birds may be seen together, busily feeding. Some, more energetic, spring up and cling to the swaying panicles, picking away, while others gather about the stem, getting a good dinner, without trouble, off the seeds that their

neighbors above rattle down. At such times the whole company keep up an animated conversation, expressing their satisfaction, no doubt, in their own language; it is more than chirping, and not quite singing — a low, soft, continuous chanting, as pleasing as it is indescribable. The Tree Sparrow is, indeed, one of the sweet-voiced of our Sparrows, and one very fond of singing, not only in the spring, but at other seasons; times are hard with it indeed when it cannot, on occasion, tune its gentle pipe.”

The Tree Sparrow is said to nest indifferently upon trees, bushes, or the ground. The eggs are not at all like those of the Chip-bird, more resembling those of Song Sparrows, being of a vague bluish-green ground color, speckled and blotched with different shades of reddish-brown, and having the endless variations of style which Song Sparrow eggs are so well known to present. They measure about 0.80×0.60 .

CHIPPING SPARROW, OR HAIR-BIRD.

SPIZELLA DOMESTICA (*Bartr.*) *Coues.*

Chars. Adult: Bill black; feet pale; crown bright chestnut; forehead black; a pale supraciliary line, and below this a dusky stripe through the eye. Under parts pale ash, without marks. Back streaked with black, bay, and grayish-brown, the inner secondaries and wing-coverts similarly variegated, with two whitish cross-bars; rump dark ash; primaries and tail-feathers dusky, pale-edged, without strong markings. Sexes similar: in the young the bill is not black, the crown is streaked like the back, and the breast and sides are thickly streaked with dusky. Length, 5.25-5.50; extent, 8.00: wing, 2.75; tail, 2.50.

While Spring still hesitates, with lingering doubts of the reception to be given by New England, — for patches of snow still cling to the shaded hollows and north-facing slopes, — one may hear from some bush or tree by the wayside a rapid succession of sharp sounds, as if bits of flint were being chipped by striking against each other. This is the way the bird-medley soon to follow is opened by the familiar bird who takes his name from such peculiar quality of voice — a clever little fellow in a jaunty red cap, with a good deal of self-possession if not self-assertion, and a great favorite. Later in the season, when he has settled with his mate at our very door, the children make Chippy's acquaintance, peering into the maze of the shrubby that climbs over the piazza, or into the heart of a cedar bush, to discover the neat horse-hair nest there snugly hidden.

On the whole, the Sparrow family is not noted for the elegance or the ingenuity of their architecture; nor are the many species well distinguished by their styles of nest-building. The Hair-bird is one of the most notable in these respects, making a much neater fabric than usual, and one scarcely to be mistaken for that of any other bird. It is a deep cup, with a smooth, firm brim, almost invariably lined with horse-hairs, and sometimes consisting chiefly or entirely of such material; usually, however, fine grasses and rootlets form the substance of the walls and basement. The location of the nest is also to some extent characteristic. Chippy seldom, if ever, — and then only for a freak, — nests on the ground, and not often in trees of any size, bushes and vines being entirely to his fancy. Becoming accustomed to the presence of man,

the little birds grow to the last degree confiding and fearless; one may not seldom be seen covering her treasures within arm's-reach of those who sit or walk upon the piazza. The eggs are no less recognizable than the nest, being pale bluish-green, sparingly dotted and speckled, sometimes blotched or scrawled, with blackish-brown. Most of the surface has usually but few markings, or none. The markings tend to cluster or wreath about the larger end of the egg. The smaller dots are usually quite blackish; larger blotches, when any, being browner; and with both are commonly found less positive markings, the pigment in these cases being overlaid, and so obscured by the greenish shell-substance. Two sets of eggs are usually laid, the first early in June, or even by the latter part of May, the other in July. The eggs, four or five in number, average in size about 0.66×0.48 .

While it is quite proper to rate this familiar little house Finch as a summer resident of New England, that being the *rôle* it chiefly sustains in our bird-life, some qualification is required to square the statement by the actual facts. In the first place, some of these birds enter the country by its southern border among the very earliest of the migrants, appearing in Connecticut even before February closes. All the Chip-birds, again, are not gone till November is nearly over; and Mr. Grinnell records that a few sometimes spend the whole winter in the towns, with the English Sparrow. The birds are likewise more abundant in Southern than in Northern New England, and more so in populated than in primitive tracts of country. They are consequently among the several species who have to contend with the English Sparrows in the

ceaseless "struggle for existence" that is the order of Nature for all creatures. During the pairing and nesting periods they are pretty equally dispersed in their usual haunts, showing no gregarious disposition; but in the fall, preceding or during the migration, flocks of considerable size make up by the roadside and in the pasture-land. They have at times a song quite different from the sharp, monotonous trill so characteristic of the spring-time, and of much more musical quality; and they are among the several birds of our country which occasionally wake up in the middle of the night, to twitter a tremulous expression of their happiness, and then sink quietly to sleep again.

FIELD SPARROW.

SPIZELLA AGRESTIS (*Bartr.*) *Coues.*

Chars. With nearly the size and shape of *S. socialis*, but the coloration more that of *S. monticola*. Bill pale reddish; feet very pale; crown dull chestnut, without black on the forehead; sides of the head and neck with vague brown markings: those parts which in *socialis* are ashy, here pale brownish. Middle of back bright bay, with some black streaking and pale flaxen edging of the feathers; inner secondaries colored to correspond; two decided whitish wing-bars, formed by the tips of the median and greater coverts. Under parts white, without markings, but much tinged with pale brown, or clay-color. Tail rather long, narrow, and emarginate, proportionally longer than in *S. socialis*, rather exceeding, instead of being a little shorter than, the wing. Sexes alike: young similar, but for a short time streaked below, as in *S. socialis*.

This small and rather plainly colored Sparrow is to be carefully distinguished, among the several spe-

cies already treated to which the name of "Field" or "Ground" Sparrow is very loosely applied by those who do not recognize the nice distinctions which subsist among these closely related birds. It should be easily identified by the above description, though it is one of the common species whose distinctive traits and habits are not so well known as they might easily be. The nest is somewhat like that of the Chip-bird in construction, but not so neat, nor so conspicuously composed of horse hair; straws, rootlets, and other vegetable fibre entering more largely into its construction. It is also usually placed on the ground, at the foot of a small bush, or but a little way up in some low shrub. The eggs are entirely different in color from the Chippy's, though of the same size and shape, being white (grayish-white or greenish-white) speckled all over with reddish-brown of varying shades, and generally quite light. The general resemblance is with the eggs of the Yellow-winged Sparrow, rather than with those of other species of *Spizella*. There are two broods, the first eggs being laid late in May.

It is a common New England bird, in field, pasture, and scrub land, playing in Southern portions much the same rôle that the Chippy sustains; but is decidedly more southerly in its general range. It is naturally limited northward by the Alleghanian Fauna, and is not common beyond such boundary, though extending also into the Canadian.* It can in fact hardly

* On this subject compare *Brewer*, Pr. Bost. Soc., xvii, 1875, p. 442, where it is implied that the species is a summer resident of all New England, with *Purdie*, Bull. Nutt. Club, i, 1876, p. 73, and ii, 1877, p. 15, where it is shown that the bird seldom reaches Northern New England.

be called abundant north of Massachusetts. Reaching the borders of our country early in April, it spreads to its natural limit during that month; in October it makes up into flocks, which begin to move southward, though it has been found in Connecticut all through the month of November.

This humble little Finch is very melodious, and has an extensive and varied score to sing from. The unusual compass of its vocal powers has led to the most diverse estimates of its musical ability; but it would appear that those are nearest right who give it the most praise. Mr. Grinnell calls the song "loud, clear, and pleasing," adding that one may consider himself fortunate who has mastered its numerous variations. Mr. Allen remarks that the songs of the males in Florida were so different from those of the Northern birds that he could scarcely recognize them as coming from the same source. Another late writer, Mr. Minot, who calls the little Field Sparrows "charming songsters," leaves this record of his impressions: "Wilson speaks of their chirruping, by which he probably refers to their occasional twitters, but he says that they have no song. But the Field Sparrows do sing, and very sweetly, most often in the early morning and towards evening, though also at other times of the day. Their notes are sweet and very clear, and have been likened to the tinkling of a bell. They open with a few exquisitely modulated whistles, each higher and a very little louder than the preceding, and close with a sweet trill."

BREWER'S SPARROW.

SPIZELLA BREWERI *Cass.*

Chars. Similar to *S. pallida* (a Western species of the genus); the coloration paler and duller, the markings less distinct; streaks of the crown and back small, numerous, not separated by a nuchal interval, and no definite markings on the side of the head.

This is a Western species, admitted to the list with some doubt; but a specimen of a small Sparrow, apparently *S. breweri*, was taken at Watertown, Mass., Dec. 15, 1873. (See *Brewster*, *Am. Nat.*, viii, 1874, p. 366; *Brewer*, *Pr. Bost. Soc.*, xvii, 1875, p. 442; *Allen*, *Bull. Essex Inst.*, x, 1878, p. 17.) The occurrence of such a bird is of course entirely accidental.

WHITE-THROATED SPARROW.

ZONOTRICHIA ALBICOLLIS (*Gm.*) *Bp.*

Chars. Adult male: Crown black, divided by a median white stripe. A yellow line from bill to eye, thence a white stripe over eye to hind head; below this a black stripe through eye; below this again a black stripe bounding the definitely pure white throat, which contrasts strongly with the dark ash of the breast and sides of the head. Bend of wing yellow. Middle of back streaked with black, chestnut and fulvous white; rump ashy, without markings. Wings with two white cross-bars, and much bay edging of the coverts and under quills. Under parts white, washed with brownish on the sides, shading into the ash of the foreparts. Female, and immature male: Black of the head replaced by brown, the white throat less conspicuously contrasted with the duller and more brownish ash of the breast, the breast and sides often with obscure streaks; but the yellow on the lore and edge of the wing is probably always evident, and will serve for the recognition of the species in connection with the large size and other characters. Length, 6.50-7.00; extent about 9.00; wing, 3.00; tail nearly or about the same.

This is a large, handsome Sparrow, scarcely surpassed in size and beauty by the Fox Sparrow itself. The full-dressed males in spring, with the head perfectly black, white and yellow, singing their characteristic notes, are conspicuous objects in the copses and along the hedge-rows. The White-throats are found all the year round in one or another portion of New England, but are most numerous during the migrations. The manner of their presence among us is easily given. They are birds of the eastern United States at large, whose summer home is practically limited to the southward by the Canadian Fauna, to gain and retire from which they pass through the Alleghanian and Carolinian in spring and fall, a small number remaining through the winter in the latter. But, characteristic as the species is of the first-named Fauna, it is nevertheless known to nest in the Alleghanian. It was long ago noted by Prof. Emmons to breed in Massachusetts, and this early record has been confirmed by late observations. Mr. F. C. Browne has recorded a nest with four eggs found in Framingham near the Natick line, in June, 1874. It was situated in a tussock of grass in a rather wet meadow, adjoining a wooded swamp filled with alders (Bull. Nutt. Club, v, 1880, p. 52; see, also, Hist. N. A. Birds, i, 1874, p. 575). On the 13th of June, 1874, Mr. N. C. Brown found a nest containing four eggs in Scarborough, Maine, where subsequent observations showed the bird to be a rather common summer resident, as it was also in suitable localities throughout Cumberland County. It is unnecessary, however, to adduce the many instances that might be given to establish the fact that the bird breeds commonly in

suitable places throughout the three northern New England States. It is chiefly a ground-builder, though in exceptional cases the nest is placed in bushes, or among the branches of fallen trees; the location chosen being usually a swamp, or low ground near one. The nest is not characteristic — ground nests seldom are; but is to be distinguished by its size, if anything, from those of some of its allies. The eggs, numbering four or five, and measuring about 0.90×0.66 , resemble those of Song Sparrows, except in size, and have the endless diversity of tone and pattern of markings observable in the latter. Some are quite pale greenish and scarcely speckled with light reddish-brown, while in the other extreme the dull grayish ground is almost hidden by the thick flecking and even clouding of chocolate-brown. The second week in June is probably the height of the laying season.

During most of the spring and fall, that is, for nearly two months of each of these seasons, the White-throats are migrating, and very generally dispersed. They usually appear in spring early in April, and have not settled in their breeding-grounds until May is nearly passed. Returning the middle of September, they linger more leisurely than in spring, through part or all of November, — and we have the authority of Mr. Grinnell for the statement that some remain all winter in Connecticut. The ordinary note is not remarkable, but the song is very agreeable — a series of clear whistles which have been likened to the words "pea-peabody, peabody, peabody," and have given to the bird one of its local appellations.

WHITE-CROWNED SPARROW.

ZONOTRICHIA LEUCOPHRYS (*Forst.*) *Sw.*

Chars. Adult, of both sexes: Crown of head white, enclosing a broad black band on either side, which meets its fellow across forehead and descends to fill the lores, and bounded by a black stripe from the eye to the nape; lower eyelid white. General color dark ash, paler below than above, whitening on chin and belly, brownish on the flanks and under tail-coverts, the middle of the back streaked with purplish-bay and ashy-white. Wing-coverts and inner quills edged with bay; wings with two white cross-bars; no yellow on head or wing; bill and feet reddish. Young: The black of the head of the adults replaced by rich warm brown, the white by pale brown, and the general ashy color obscured with brownish. Size of *Z. albicollis*.

This elegant Sparrow, not inferior in size and beauty to the last species described, is a bird of the same general habits and appearance, and somewhat similar distribution; but it is on the whole more northerly, more irregular in its appearance, and not so common. It is placed by Mr. Allen in the same Faunal category as the White-throat, as a species limited in southern distribution in the breeding season by the Canadian Fauna; but might perhaps be better considered as a member of the Hudsonian, though certainly overlapping the other. It is scarcely known in New England except as a migrant and occasional winter loiterer in southern portions. It is, however, authenticated as breeding within our limits. Dr. Brewer has given such a record (*Bull. Nutt. Club*, iii, 1878, p. 195), Mr. H. E. Boughton, of Rutland, Vermont, having found a pair breeding in that locality. The nest was situated in a clump of blackberry and maple

bushes, about three and one-half feet from the ground, and was a bulky thick-walled structure of grasses, outside as large as a Robin's nest, with a proportionally small cavity. The eggs of this species are not distinguishable from those of the White-throat. The song is however quite different. The irregularity of the migration is witnessed by the great abundance of the bird some seasons in particular localities, and its rarity or entire absence at other times and places, rendering it difficult to speak of these matters with desirable precision. It has occurred in the vicinity of Portland "in almost unprecedented numbers," says Mr. N. C. Brown (Bull. Nutt. Club, i, 1876, p. 95). Mr. Allen has seen it in Massachusetts as late as June 6th. In Connecticut, according to Mr. Merriam, it has been found from October to December, and from March 20th to the middle of May.

FOX SPARROW.

PASSERELLA ILIACA (*Merr.*) *Sw.*

Chars. General color above, ferruginous, or rich rusty red, brightest on the rump, tail, and wings, the color appearing on the other upper parts in streaks on a dark ashy ground. Below, white, thickly marked with rusty red, except on the belly and under tail-coverts — these markings diffuse and blotted anteriorly, on the breast and sides consisting of arrow-heads and streaks linked in chains; two white wing-bars across tips of coverts. Upper mandible dark, lower mostly yellow; feet pale, with the lateral toes lengthened so that the tips of their claws reach far beyond the base of the middle claw — a generic character. Sexes alike. Length, about 7.00; extent, 10.25; wing and tail, each, 3.00 or more; bill, 0.40; tarsus, 1.00.

Although this handsome Finch is given by Allen in the category of species limited in their southward range in the breeding season by the Canadian Fauna, — which is equivalent to a statement that it breeds in northern New England, — I can nevertheless find no record to establish the reasonable inference. Having also no information of the presence of the bird in winter within our limits, the species must be considered, for the present at least, as one of those which are migrants, pure and simple, through our country. In whatever event to the contrary, as an occasional matter, the Fox Sparrow's principal part in New England is that of a spring and fall passenger to and from the Hudsonian Fauna. It enters the country early in October, becomes generally distributed during that month, and may be seen in southerly districts all through November. Returning, it reaches Connecticut early in March, and generally takes about six weeks to complete the vernal movement. Conspicuous as it is by its size and beauty, it is furthermore one of the most accomplished vocalists of its tribe. While with us, it haunts shrubbery and undergrowth of all kinds, pine and alder thickets, hedge-rows, and sometimes weedy fields, keeping much on the ground, where it is fond of rambling and scratching, much like a Thrasher or Towhee Bunting. Its ordinary note is a *tsip*, sounding rather weak to come from so able-bodied a bird. When disturbed in its retreats, it has a habit of mounting to some elevated or exposed perch, apparently to investigate the cause of the alarm, before determining to secrete itself in the recesses of the covert. At such times it may readily be seen or secured, but is hard to find when once it has made off in alarm. The note

on such occasions is a *chuck, chuck*, uttered with much energy. The beautiful song is sometimes heard in the autumn as well as in the spring. In the Arctic regions, where the bird breeds, the nest is placed on or near the ground, and the eggs are marbled with rusty-brown, often so thickly as to conceal the ground-color.

LARK FINCH.

CHONDESTES GRAMMICUS (*Say*) *Bp.*

Chars. "Head curiously variegated with chestnut, black, and white; crown chestnut, blackening on forehead, divided by a median stripe, and bounded by superciliary stripes of white; a black line through eye, and another below eye, enclosing a white streak under the eye, and the chestnut auriculars; next, a sharp black maxillary stripe not quite reaching the bill, cutting off a white stripe from the white chin and throat. A black blotch in middle of breast. Under parts white, faintly shaded with grayish-brown; upper parts grayish-brown, the middle of the back with fine black streaks. Tail very long, its central feathers like the back, the rest jet black, broadly tipped with pure white in a diminishing amount from the lateral pair inward, the outer web of the outer pair entirely white; 6.50 to 7.00; wing, 3.50, pointed; tail, 3.00, rounded."—(*Coues.*)

Three instances of the occurrence of this Western bird in New England have been recorded. In each case the specimen was taken in Massachusetts. One was secured at Gloucester, about 1845 (*Putnam*, *Pr. Essex Inst.*, i, 1856, p. 224). Another was taken at Newtonville, Nov. 25, 1877 (*Purdie*, *Bull. Nutt. Club*, iii, 1878, p. 44). The third was shot at Magnolia, Aug. 29, 1879 (*Townsend*, *Bull. Nutt. Club*, v, 1880, p. 53). The appearance of the bird so far from its normal range is of course fortuitous.

LARK BUNTING.

CALAMOSPIZA BICOLOR (*Towns.*) *Bp.*

Chars. "Male : Entirely black, with a large white patch on the wings, and the quills and tail-feathers frequently marked with white ; bill dark horn color above, paler below ; feet brown ; 6-6½ ; wing, 3½ ; tail, 2¾. Sexes unlike ; ♀ resembling one of the Sparrows, brown above, streaked, white below, somewhat streaked, but always known by the whitish wing-patch ; ♂ said to wear the white plumage only during the breeding season, like the Bobolink (*Allen*). In the form of the bill this interesting species is closely allied to the Grosbeaks (*Zamelodia*) ; and this, with the singularly enlarged tertiaries, as long as the primaries in the closed wing, renders it unmistakable in any plumage. A prairie bird abundant on the Western plains to the Rocky Mountains." — (*Coues*.)

This is another Western bird which has occurred in New England far away from its native prairie. One such instance has been recorded by Mr. Allen — that of a male in autumnal plumage, shot at Lynn, Mass., by Mr. N. Vickary, Dec. 5, 1877 (*Bull. Nutt. Club*, iii, Jan., 1878, p. 48).

BLACK-THROATED BUNTING.

SPIZA AMERICANA (*Gm.*) *Bp.*

Chars. Male : Above, grayish-brown, streaked with black on the middle of the back, the nape ashy, the crown yellowish-olive with black touches. A yellow supraciliary line ; eyelids white ; auriculars ashy ; chin white ; throat with a large jet black patch. Under parts otherwise white, but shaded on the sides with brownish, and extensively tinged with yellow. Edge of wing yellow. Lesser and middle wing-coverts chestnut. Bill blackish-blue ; feet brown. Length, 6.50-7.00 ; extent, 10.50 ; wing, 3.25 ; tail, 2.75. Female : Similar ; smaller ; upper parts less boldly marked ; wing-coverts not chestnut ; lower parts less tinged with yellow, and no black breast-plate, but sharp maxillary and pectoral streaks instead.

The New England record of the Black-throated Bunting is interesting, though not so satisfactory as might be desired. It seems that we have in this case a bird of the Carolinian and part of the Alleghanian Fauna, of rare though constant occurrence as far north as Massachusetts, yet irregular in its numbers during successive years, and locally distributed moreover. It has been found not rare in certain spots, some seasons, and again, is not to be found in the same places at all. Thus, in 1843 Dr. Linsley gave it as "very common" about New Haven, Conn., where Mr. Merriam, however, has been unable to find the bird, or indeed to learn of any other record of its presence in Connecticut. The older ornithologists, as Nuttall, Emmons, Peabody, speak of it as a bird of Massachusetts, and recent observations abundantly confirm their statements. Dr. Brewer has it as a "summer resident, rare," in southern New England; Mr. Allen speaks of it as a "very rare summer resident" of Massachusetts. Mr. H. A. Purdie, of Boston, favors me with manuscript notes of two Massachusetts occurrences. In June, 1873, two specimens were shot at West Newbury, Essex County; they were in full song, and evidently about to breed. A nest with eggs was found at Readville, Mass., in 1879. Mr. John Thaxter obtained a specimen near Newtonville, Mass., June 26, 1867; this was a female, supposed, from the condition of the plumage, to be incubating. Mr. E. A. Samuels mentions two others taken in Massachusetts. Mr. Hopkins found the bird breeding in Williamstown, and there has been a similar find at Hingham. Among late occurrences the following may be specially noted:

In his "Birds of New England," p. 229, Mr. Minot

speaks of two instances of finding the nests, given by Dr. Brewer, and himself adds a third, that of a nest which he found, with fresh eggs, at Canton, early in June. "It was in a dry grassy field, near cultivated land, and such a place as these birds are said usually to inhabit. The female left her nest on my approach, and after running through the grass, perched on a low fence, from which she, together with the male, watched me silently."

In the Nuttall Bulletin for 1878, p. 45, Mr. H. A. Purdie speaks of a nest with four eggs found by Mr. F. E. Bean at Medford, Mass., June 9, 1877, at which date the eggs were fresh. This nest was in a bush, about a foot from the ground, supported by the stem of the bush and the blades of the grass-clump in which it rested. Toward the end of June the same observer found a second nest, in another locality, with four young. This was in a field by the roadside; the song of the male, perched upon the fence, attracted attention, and both parents were soon seen feeding their young. Still other pairs had been in the same vicinity, as Mr. Bean heard other birds in this and previous years.

In the same Bulletin for 1878, p. 190, Dr. Brewer presents an interesting record, stating that in 1833 and 1834 this Bunting was by no means uncommon in Cambridge, in all the then unoccupied ground around the Botanic Garden and thence to West Cambridge and Charlestown. He also says that it may now be found every summer on the high promontory at the northeast corner of Hingham. To verify the fact of its breeding there, he visited the place on the 30th of June, 1878. "We found one pair with young, which

the female was busily engaged in feeding with small grasshoppers. They were quite tame and unsuspecting, and permitted a very close approach. We saw two other males, evidently in the neighborhood of their respective families. We saw enough to satisfy us of its actual presence in considerable numbers."

A still later record, the last I shall cite, is furnished by Mr. R. Deane to the same Bulletin for 1879, p. 122. Says this gentleman: "Through the kindness of Mr. N. C. Hammond, I am enabled to record an instance of its breeding in Hyde Park, Mass., where he collected a nest containing four eggs, about August 1, 1878. The nest was placed on the ground, in the middle of a large open field, and from the lateness of this date would indicate that it must have been a second brood."

INDIGO-BIRD.

PASSERINA CYANEA (L.) Gr.

Chars. Male, adult: Indigo blue, intense and constant on the head, more greenish in some lights on other parts; feathers at base of bill black; wings and tail dusky, glossed with the general color. Bill blackish above, pale below, with a black stripe on the gonys. Young males are less purely blue, the feathers of the under parts skirted with white, etc. At an early age they resemble the female. Female entirely different: Above, plain warm brown; below, paler or whitish-brown, obsoletely streaked on the breast and sides; besides this, there is little variegation of the plumage. Bill as in the male. Length about 5.50; extent, 7.25; wing, 2.75; tail, 2.50.

The Indigo-bird is a common summer resident in New England, especially in southerly portions, becoming less numerous the farther north it proceeds,

and probably not quite covering the whole of our territory. With its rich plumage, vivacious manners, and persistent though not very brilliant song, it becomes one of the more conspicuous of our summer birds. It enters Connecticut early in May, and by the middle of that month is generally dispersed. Being of little hardihood, this representative of a decidedly southern genus takes early departure in the fall, scarcely remaining through September — in fact, it is hardly to be seen, except in southern districts, after August. It is found on the edges of woods, along the roadsides, in neglected fields, and also in orchards and gardens, where the male is sure to attract attention by his monotonous ditty. The plainly-clad female, busy with her household affairs, is less often seen. The nest is built in a bush or low shrubby tree, often quite close to the ground. It is not artistic — in fact rather bulky and slovenly, and not at all such a structure as one would expect from a bird so dainty. It is built of the most miscellaneous vegetable fibre, and generally sets in the upright crotch of the bush; weedstalks, twigs, twine, coarse grasses, and the like make up the bulk of the nest, which is simply lined with similar but finer materials. The eggs, to the usual number of four or five, vary so much that very different descriptions of them have been published. Wilson and Audubon make them out to be always spotted; but they are like Bluebird eggs, very pale blue, or bluish-white, sometimes almost white, and are generally unmarked, though occasionally having a few dots. They average 0.75×0.55 in-size. The eggs are laid about the first of June, and a second set is said to be deposited late in July in lower New England.

BLUE GROSBEAK.

GUIRACA CÆRULEA (L.) Sw.

Chars. Male, adult: Uniform rich dark blue, with black face, wings, and tail, and two chestnut bars on the wings. Bill dark horn color; feet blackish. Length, 6.50-7.00; extent, 10.25; wing, 3.30; tail, 3.10. Female: Smaller; plain warm brown above, paler flaxen brown below, the wings with brownish-white crossbars. Young males at first resemble the females; then show mixed brown and blue; then blue interrupted with white below.

The Blue Grosbeak is thoroughly a Southern bird, whose normal northward extension barely takes it into New England, as a very rare and probably only casual summer visitor. The name occurs in Herrick's "Catalogue of the Birds of Grand Menan" (1873, p. 8); and Mr. G. A. Boardman found it near Calais, Maine, in the spring of 1861 (Pr. Bost. Soc., ix, 1862, p. 127). Mr. Merriam found no authority for including the species in his "Review of Connecticut Birds."

Referring to the occurrences above mentioned, Mr. Allen says in 1878 (Bull. Essex Inst., x, p. 33), that the species "is surely to be added, sooner or later, to the list of Massachusetts birds. Its occurrence is *à priori* far more probable than that of many species that have been found here." He has himself the pleasure of verifying this inference, in the Nuttall Bulletin of July, 1880, p. 184, where he gives the details of a Massachusetts specimen — a fine male bird shot by Mr. Gordon Plummer, in Brookline, on the 29th of May of this year. There is no doubt that recorded occurrences in lower New England will multiply as time goes on.

ROSE-BREASTED GROSBEAK. .

ZAMELODIA* LUDOVICIANA. (L.) Coues.

Chars. Male, adult: Head, neck, and most upper parts, black; rump, upper tail-coverts, and under parts, white; the breast and under wing-coverts rosy or carmine red; wings and tail black, varied with white; bill whitish; feet dark. Young males have at first a plumage resembling that of the female, but the rosy of the breast comes with the first feathering. Female: Those parts which in the male are black are streaked with blackish and olive-brown or flaxen-brown; the crown with a median white stripe; a white supraciliary stripe; under parts white, more or less tinged with fulvous and streaked with dusky; upper wing-coverts and inner wing-quills with a white spot at the end; under wing-coverts saffron yellow; bill not whitish. Length, 7.50-8.50; extent, 13.00; wing, about 4.00; tail, 3.25.

The elegant Rose-breasted Grosbeak, famous for brilliancy both of song and plumage, is a common summer resident of New England as far north as Massachusetts, becoming less numerous farther north, but extending practically over all the Eastern States. Entering Connecticut early in May, and soon being distributed in their summer homes, the beautiful birds nest in June, and usually make haste to retire before the chilly weather of September; though in some exceptional cases loiterers have been found even in November. The distribution of the birds is local, even in latitudes where as a whole the species is abundant. The favorite haunts of the bird are the thickest undergrowth of heavily-timbered tracts, especially near water, and where the saplings and shrubbery offer that protection from observation which the birds so sedulously court. Sometimes, however, they enter

* See *Coues*, Bull. Nutt. Club, v, 1880, p. 98.

cultivated grounds, and their presence near the house is likely to be soon betrayed by the rich and powerful voice of the male. The following picture of the secluded home of the birds is given by Dr. Coues from observations made on the Red River of the North, but is no less applicable to New England :

"On entering the belt of noble timber that borders the river, in June, we are almost sure to be saluted with the rich rolling song of the rose-breasted male; and as we penetrate into the deeper recesses, pressing through the stubborn luxuriance of vegetation into the little shady glades that the bird loves so well, we may catch a glimpse of the shy and retiring female, darting into concealment, disturbed by our approach. She is almost sure to be followed the next moment by her ardent spouse, solicitous for her safety, bent on reassuring her by his presence and caresses. Sometime during this month, as we enter a grove of saplings, and glance carefully overhead, we may see the nest, placed but a few feet from the ground, in the fork of a limb. The female, alarmed, will flutter away stealthily, and we may not catch another glimpse of her, nor of her mate even, though we hear them both anxiously consulting together at a little distance. The nest is not such an elegant affair as might be desired; it is, in fact, bulky and rude, if not actually slovenly. It is formed entirely of the long, slender, tortuous stems of woody climbers, and similar stout rootlets; the base and outer walls being very loosely interlaced, the inner more compactly woven, with a tolerably firm brim of circularly disposed fibres. Sometimes there is a little horse-hair lining, oftener not. A very complete nest before me is difficult to measure, from its loose/out-

ward construction, but may be called six inches across outside, by four deep; the cavity three inches wide, by one and a half deep. The nest contained three eggs, which I think is the usual number in this latitude; four I have found only once. The eggs are usually rather elongate, but obtuse at the smaller end. Different specimens measure 1.00 by 0.75, 1.08 by 0.70, 1.03 by 0.75, 1.02 by 0.72, 0.96 by 0.76; by which dimensions the variation in shape is denoted. The average is about that of the first measurement given. They are of a light and rather pale green color, profusely speckled with dull reddish-brown, usually in small and also rather diffuse pattern, but sometimes quite sharply marked; the sharper markings are usually the smallest. There is sometimes much confluence, or at least aggregation, about the greater end, but the whole surface is always marked."

This Grosbeak possesses all the qualifications for a cage-bird, including the readiness to submit to confinement, and the vigor to stand it. It may easily be tamed if properly treated, and sometimes displays real affection for those who minister to its wants, together with a variety of interesting traits.

CARDINAL GROSBEEK.

CARDINALIS VIRGINIANA *Bp.*

Chars. Male: Vermilion red, obscured with ashy-gray on the back, the region about the base of the bill black, including an extensive throat-patch; bill reddish; feet brown; head conspicuously crested. Female much more subdued in color, being ashy-brown or drab color; paler below, with evident traces of red on the crest, wings, tail, and under parts. Length, 8.00 or more; extent, 11.25; wing, 3.50; tail about 4.00. Female rather smaller.

Being essentially a bird of the Carolinian Fauna, the splendid Cardinal only occurs normally in the lower Connecticut valley, in exceptional cases reaching Massachusetts, beyond which it is hardly known to have proceeded. Even in Connecticut it is one of the rarest birds, though there scarcely to be considered as merely "accidental." One who secures a Cardinal in New England should make sure, if possible, that it is not an escaped cage-bird, repeated cases of the capture of which have been reported.

For its occurrence in Massachusetts, see *Allen*, *Am. Nat.*, iii, 1869, p. 635, and *Bull. Essex Inst.*, x, 1878, p. 18. A Nova Scotian case is reported by *Jones* (*Am. Nat.*, v, 1871, p. 176).

It is a wild, shy inhabitant of the thickest shrubbery, though conspicuous even in such secluded resorts by the intensity of its coloration, the power of its voice, and the great activity of its disposition. It lays rather a peculiar egg, some specimens resembling those of a Night-hawk in coloration, others those of the Rose-breasted Grosbeak. The ground is white, spotted with any shade of brown from pale reddish to dark chocolate, but the coloration is usually quite heavy, with many purplish-brown or stone-gray shell markings. The markings vary from uniform fine dotting or marbling to heavy spotting, but there are rarely large blotches. The size is an inch or a little more, by rather less than three-fourths of an inch. The nest, composed of strips of grapevine, or other pliable bark, twigs, leaves, and grasses, is rather loosely built, generally in a thicket of briars or in a low tree, — therefore near the ground, and preferably in the vicinity of water.

TOWHEE BUNTING.

PIPILO ERYTHROPHthalmus (L.) V.

Chars. Male: Black, with white belly, chestnut sides, and fulvous under tail-coverts; primaries and inner secondaries with white touches on the outer webs; several lateral tail-feathers marked with white in decreasing amount; bill blackish; feet brown; iris red. Female: Rich warm brown where the male is black; otherwise similar. At a very early age, both sexes have a streaky plumage, which soon gives way to the sexual characters first mentioned. Length, about 8.50; extent, 11.00; wing, 3.50; tail, 4.00; bill, 0.55; tarsus, 1.00.

The last of the large Finch family which we have to notice is a common summer resident of the Carolinian and Alleghanian Faunæ, becoming less numerous in the Canadian, in the unsettled portions of which it is hardly to be found, but still generally distributed in New England. It arrives at the end of April, and remains, in southern districts at least, all through October. An exceptional case of occurrence in January has been noted. It is a vivacious and rather jaunty tenant of shrubbery and undergrowth of all kinds, deriving its curious names of "Towhee" and "Chewink" from the sound of its characteristic notes. By some it is called "Marsh Robin," the color of the sides being something like that of a Robin's breast, and the decided preferences of the bird being for low, watery situations. The nest is regularly placed on the ground, at the foot of some bush or stump, or under a fallen log, but the Towhee takes occasionally a fancy to nest in a bush or sapling, some feet from the ground. The nest is rather a rude structure of grapevine bark, twigs, weedstalks, leaves, and grasses, lined with finer grasses

and rootlets. The eggs are usually four or five in number, measuring about 0.95×0.70 ; the ground color is white, but thickly and uniformly freckled in fine pattern with reddish-brown. Two broods, I believe, are usually reared, the first set of eggs being often found in May. As to the manners of the bird, says Dr. Coues: "As we walk along the weedy old 'snake' fences and thick hedges, or by the briary tracts marking the course of a tiny water-thread through a field, scores of humble gray Sparrows flit before us; while ever and again the jaunty Towhee, smartly dressed in black, white, and chestnut, comes into view, flying low, with a saucy flirt of the tail, and dashes again into the covert as quickly as it emerged, crying 'tow-hée' with startling distinctness. In the spring it is less conspicuous, and more likely to be found in low tangled woods, amid laurel brakes and the like, on the ground rustling and busily scratching the matting of last year's leaves that covers the earth, doubtless in search of insects. Its notes are then louder, and oftener heard."

NOTE.

The following species of the Finch family have been artificially introduced:

1. THE PARASITE. *Passer domesticus*. The House Sparrow, which was unfortunately introduced some years ago, has become thoroughly naturalized, and by repeated importations and unchecked natural increase, now abounds in most parts of New England, with great prejudice to native birds, with injury to the orchard, garden, and farm, and with annoyance to most persons; without rendering the services expected of it in the way of destroying noxious insects. A premium on their heads would be wise legislative action.
2. MOUNTAIN FINCH. *Passer montanus*. This European species has also been introduced.

The five following exotic species of this family have actually been taken in New England, as *feræ naturæ*, but claim no proper place in the list, being undoubtedly imported. They are all frequently brought to this country as cage-birds; but, though some of them may be occasionally set at liberty, none appear to be naturalized, like the House Sparrow and Migratory Quail:

1. EUROPEAN GOLDFINCH. *Carduelis elegans*. "Repeatedly taken or observed in a wild state, under circumstances that seem to render it probable that the individuals were *not* escaped cage-birds. Whether or not introduced originally by man's agency, I consider seriously open to question." (*Allen*.) (*Allen*, Bull. Essex Inst., x, 1878, p. 36; Massachusetts. *Brewer*, Pr. Bost. Soc., xx, 1879, p. 271; Massachusetts. *Allen*, Bull. Nutt. Club, v, 1880, p. 120; Massachusetts.)
2. SERIN FINCH. *Serinus meridionalis*. European. Once observed in Massachusetts. (*Allen*, Am. Nat., iii, 1870, p. 635. *Allen*, Bull. Essex Inst., x, 1878, p. 36. *Allen*, Bull. Nutt. Club, v, 1880, p. 120.)
3. *Crithagra butyracea*. African. Once observed in Massachusetts, at South Scituate, February, 1879. (*Brewer*, Pr. Bost. Soc., xx, 1879, p. 271. *Allen*, Bull. Nutt. Club, v, 1880, p. 120.)
4. *Amadina rubronigra*. African. Once observed in Maine. (*Allen*, Bull. Nutt. Club, v, 1880, p. 120.)
5. *Gubernatrix cristatella*. A well-known South American species, once taken in Rhode Island. (See *Allen*, Bull. Nutt. Club, v, 1880, p. 240.)

FAMILY ICTERIDÆ : AMERICAN STARLINGS.

BOBOLINK.

DOLICHONYX ORYZIVORUS (*L.*) *Sw.*

Chars. Male, in breeding plumage: Black; nape buff; scapulars, rump, and upper tail-coverts, ashy-white; middle of back streaked with black, buff, and ash; outer quills edged with yellowish; bill blackish; feet brown. Male in fall, female, and young, entirely different: Yellowish-brown above, brownish-yellow below; upper parts and sides below streaked with black; crown with median and lateral light stripes; wings and tail dusky, with pale edges of the feathers; bill brown. The male changing plumage confuses the characters of both sexes. Length of male, 7.00-7.50; extent, 11.50-12.25; wing, 3.50-4.00; tail, 2.50-3.00; tarsus, about 1.00; middle toe and claw, about 1.25. Female smaller: Length, 6.50-7.00; extent, 10.50-11.25; wing, 3.25-3.50.

Early in May the Bobolink's "mad music" begins to be heard in the meadow, and the phantasy goes on unchecked until the revellers are sobered at last by the care which rides so closely after the "fall into generation;" then the players throw off their black dominos, the medley ceases, and the carnival is over. Whilst the males are in their jaunty attire of black, white, and buff, bubbling over with exhilaration, rivaling each other in a thousand extravagancies, and so emulous of individual preferment at all hazards, the reticent females, with an eye to more substantial empire, are thoughtfully tying knots in the grass to trip up the unwary feet of their future very humble ser-

vants. Robert is naturally restive, and with proper spirit holds out as long as he can; but the reformation goes on steadily. Before the summer is over he is plain Bob, and quite as shabby as his housekeeper, with scarcely a wink to tip to his former jolly companions. However, they are all in like plight; and in despair of holding up their heads any longer in good society, they bundle off south with their numerous progeny, travelling mostly by night to elude observation. Some still dark night, late in August or early in September, you may know that the play is played out, hearing the *chink-link-ink* from the upper air as the birds speed on; that is the tinkle of the bell that rings the curtain down on the last act.

Reaching "fresh fields and pastures new," the Lincolns in disguise assume the name of Reed-birds, and under this *alias* find leisure, doubtless, to reflect on what might have been had they always kept sober. It does not seem to disturb them, however, and certainly does not impair their digestion. They grow fat and lazy in the abundance of the harvest that autumn brings to the good and bad alike, seizing the day with true Horatian ease; and all those which successfully run the gauntlet of the gunners from Maine to the West Indies, are by the following spring quite ready to return to their folly; the "old boys" being kept in countenance by the rising generation, which values experience not until it is bought and paid for.

While the extent of the changes of plumage of the Bobolink are well known, the very brief duration of the perfect dress may not be fully appreciated. The great majority of specimens secured in the black-and-white dress are not absolutely perfect, many of the feathers

being usually skirted with yellowish ; and it is only for a very brief period, at the very climax of the season in June, that faultless featherings may be found, though all the mature males are in more or less nearly complete livery before reaching New England in the vernal migration. The late summer moult progresses with rapidity in parts of July and August, and in most cases the black has entirely disappeared by the time the birds are making up in flocks, just prior to their departure. Among several names by which the species is known is that of "Skunk Blackbird," from their resemblance in color to the notorious beast in mention. "Bobolink" is an onomatopœia, formed to express the sound of the voice, and "Meadowink" is of the same character, with additional reference to the places where the birds are chiefly found during the season of song.

Bobolink nests are concealed in the luxuriant herbage of meadows with such instinctive care for their safety as to be difficult to find except by accident, as when disclosed by the scythe of the mower. In the Western country the saying goes that an Indian can hide behind three blades of grass ; and the hiding capabilities of a tuft of herbage are never better displayed than in screening a Bobolink's nest, not only from casual observation, but from patient search. The female is said to employ some artifice in arranging the spears of grass about the structure, as still further protection, and she is careful in going and coming, threading her way shyly through the herbage, into which she flies at some distance usually from the cherished spot. As the males at such times are singing anywhere about, apparently with little thought in the matter, there is little or nothing to focus attention in one

spot more than another in the waving meadow. The nest itself is a slight grassy cup sunken in the ground. The eggs, laid about the first of June, number four or five, and measure about 0.90×0.65 ; they are easily identified, in most cases, by their color, aside from the circumstances under which they are found. The ground is a dull stone-gray, or brownish-white, sometimes sordid greenish-white, and the whole surface is variously dotted, blotched, and clouded with chocolate brown, with other indistinct shell-markings; the general effect being that of a dark heavily-colored egg.

During the spring and most of the summer the Bobolink is chiefly insectivorous; but after that it feeds on seeds and grain, and becomes injurious to the crops. Their special fondness for the seeds of the wild oat occasions their autumnal name of "Reed-bird." The return movement for New England begins late in August, and is generally completed during September.

COW-BIRD.

MOLOTHRUS ATER (*Bodd.*) *Gray.*

Chars. Male: Black, lustrous, with purplish-brown head and neck. Length, 7.50-8.00; wing, 4.00 or more; tail, 3.00 or more. Female smaller: Length, 7.00-7.50; wing, 3.75; tail, 2.75. Dark-uniform grayish-brown, paler below, with dark shaft-lines on most of the feathers. Bill and feet black in both sexes. Young male at first like the female, but the under parts decidedly streaked.

This notorious parasite, which occupies in America the place which the Cuckoo fills in Europe, as to its laying its eggs in other birds' nests, is a common sum-

mer visitant to New England, irrespective of locality. A few indeed remain during the winter, and the species as a whole may thus be considered resident; but by far the greater number, after flocking for a while, in September and October, take their departure for the south, to return again late in March or early in April.

The species of the genus *Molothrus*, of which there are several, offer an exception to the rule of monogamy among the highly organized and morally endowed families of Passerine birds. They never pair like other birds, and are consequently found in loose company during the season of reproduction. The female has no home of her own, and probably no very close period for laying. When the nesting and incubation of the Warblers, Vireos, Thrushes, Finches, and most kinds of orderly small birds are going on, she visits their nests by stealth and leaves her unwelcome card. To enumerate all the species thus intruded upon would be to make out an extensive and varied list, especially full in the names of Warblers, Vireos, and Finches. The Summer Warbler and Maryland Yellow-throat are among those most persistently victimized. As a rule, the Cow-bird lays her egg with those smaller than her own. The rule is also one Cow-bird egg to a nest; I have found three, and others even more. How many eggs may be laid by one female in a season is not known, and we can only suppose it to be the usual Passerine number of four or five. The plural eggs in the same nest are presumably laid by different individuals. How cunningly Nature sometimes contrives to carry out her great law without the usual favoring circumstances of conjugal and parental affection — Cow-birds being entirely devoid of these attri-

butes — is witnessed in the abundance of the species; for the alien egg is usually hatched, and the young reared successfully by the foster-parents, even to the destruction of their own household. One of the most singular things in the whole course of these events is, that the young Cow-birds are wise enough to know their own blood, if not exactly either parent; as evidenced by their flocking together as soon as they can fly.

The Cow-bird's egg is easily recognized, in most cases, by its difference from those with which it is found in the same nest; though sometimes it not distantly resembles them, as when laid in the nest of a Towhee Bunting, Brown Thrush, or Meadow Lark. It averages perhaps 0.90×0.65 in size, and is dull white in ground color, thickly and more or less finely and uniformly dotted, sometimes blotched or clouded, with chocolate brown.

Mr. Minot has a paragraph on the Cow-bird which I will quote: "There is something ludicrous, and yet pitiable, in the efforts of the male to express his passions musically. It is often as painful to hear him and see him as to converse with one who stutters badly. He ruffles his feathers, spreads his wings and tail, gives a convulsive movement to his body, and yet produces nothing but a shrill, unmusical *cluck-seé*. He often adds to this, or splutters out at other times, a chattering call, quite distinct from that of any other bird, or utters a few low guttural notes, not audible at any distance. He has in common with other members of his family a loud *chuck*: but he is not wholly destitute of musical powers. One may often hear in spring, from the top of some tree, a clear, pensive but rather shrill

whistle, usually followed by a few similar but falling notes. These belong to the Cow-bird, who also whistles sometimes as he takes to wing."

There is evidently something wanting to perfect the character of the Cow-bird, thus far developed imperfectly and awry. Little as is reasonably to be expected of such a foundling, he may perhaps learn to sing when he learns to behave himself. Harmony is little likely to come where there is lack of the love of it.

RED-WINGED BLACKBIRD.

AGELÆUS PHŒNICEUS (L.) V.

Chars. Male: Uniform lustrous black; lesser wing-coverts scarlet, bordered with buff. Length, 8.00-9.00; extent, 14.00-14.50; wing, 4.25-4.50; tail, 3.25-4.00. Female: Everywhere streaked; upper parts blackish-brown, with pale streaks, forming median and supraciliary stripes on the head; below, whitish, with numerous sharp dusky streaks, tinged with reddish or fulvous on the head, throat, and lesser wing-coverts; smaller than the male. Length, under 8.00; wing, about 4.00; tail, 3.25. Young male: Like the female, but larger, soon showing black plumage, and generally with bright bay edgings of the feathers on the upper parts.

The Red-wings are among the very common and familiar birds of New England during the greater part of the year, and quite irrespective of latitude; but though so numerous, they are somewhat locally distributed in the haunts that please them best, large tracts of country being often not visited. They are birds of the swamp and the marsh, either in the swaying sea of rushes or the stubborn brake of bushes, whence numbers of them overflow into low moist fields and

meadows, where there are tussocks of rank herbage. Such are their summer resorts, as a rule ; but the large flocks scour the country previous to their departure in the fall, so that Blackbirds may be found anywhere on open ground. They are among the earliest arrivals in spring, sometimes appearing late in February, but oftener not till March. After nesting, when their food is largely of insects, and then flocking awhile, doing what damage they please to the teeming grain-fields, they are off for the south, late in October. A few, however, linger through the whole winter in some sheltered situations. When once fairly settled in their breeding grounds, they are quite sedentary birds, but there is no knowing where they may not be found, or what not doing, at other times.

Pairing is accomplished early in May, though the gregarious nature of the Blackbird is still shown by the way in which they nest in communities. One is quite as likely to find several nests near each other as a single one in a piece of swamp. The nest is usually built in reeds or bushes near the ground ; often in a tussock of grass ; sometimes on the ground, and once in a while at a considerable elevation in a tree. It is rather bulky, and not at all artistic, but the nature of the support usually requires it to be firmly fastened. The materials are usually strips of rushes or sedges externally, with finer grasses, and sometimes a few horse-hairs, for lining. Eggs to the number of four or five, averaging 1.00×0.75 , are laid in May, and a second set in July. They are pale blue, fantastically dotted, blotched, clouded, and scrawled with dark or blackish-brown, and showing paler shell-spots where the bluish substance overlies the darker pigment.

The young make up in flocks as soon as they are fairly on wing, and after this little is heard from the Blackbird excepting the incessant *chuck* they utter as they scour about. The variety of noises, however, that a Blackbird can and does emit during the height of the season is as extraordinary as is the quality of these ambitious failures to sing correctly; and the resulting confusion of the creaking chorus is simply indescribable. If one, however, will confine attention to some single performer when at his best, he will occasionally hear some melodious notes in the midst of the broken-down score.

YELLOW-HEADED BLACKBIRD.

XANTHOCEPHALUS ICTEROCEPHALUS (*Bp.*) *Bd.*

Chars. Male: Black, including the lores; head, neck, and fore breast, yellow; a large white wing-patch. Length, 10.00-11.00; extent, 16.50-17.00; wing, about 5.50; tail, 4.50. Female and young: Brownish-black, the yellow restricted or obscured, and little if any white on the wing. Female much smaller than the male. Length, 8.50-9.00, &c.

Two instances of the exceptional occurrence of this Western bird in Massachusetts have been noted. One specimen was shot in an orchard at Watertown, Oct. 15, 1869, by Mr. Frank Sawyer, as recorded by Mr. Allen (*Am. Nat.*, iii, 1870, 636). The same writer also states, on information received from Mr. N. Vickary, of Lynn, that two specimens were shot at Eastham, Sept. 10, 1877, by Mr. Loud, of Salem (*Bull. Essex Inst.*, x, 1878, p. 18).

FIELD LARK.

STURNELLA MAGNA (*L.*) *Sw.*

Chars. Plumage variegated. Feathers of back blackish, each with a terminal reddish-brown area and sharp brownish edges; crown streaked with black and brown, with pale median and supraciliary stripes; a blackish line behind the eye; lateral tail-feathers white; the rest, and the inner quills and wing-coverts, black, scalloped with brown or gray; under parts, and edge of wing, bright yellow; the breast with a black crescent; the sides and flanks flaxen-brown with blackish streaks; bill horn color; feet light brown. Sexes alike, but female less richly colored. Length of male, 10.00-11.00; wing, 5.00; tail, 3.50; bill, 1.25. Female smaller: length, 9.00-9.50; wing, 4.25-4.50.

This handsome bird may be considered a resident of New England at large, but the general statement requires some qualification for entire precision. The species is more numerous in southern than in northern portions, partly as a matter of geographical distribution, partly because its favorite meadows are fewer and farther between in the wilds of Maine than in less primitive districts. It can hardly be considered abundant beyond the Alleghanian Fauna. In the next place, comparatively few individuals pass the whole winter with us, and then only in open seasons or in southerly places. The bird is much the best known as a migrant and summer visitant, coming to us from the south early in the spring in small detachments, and leaving late in the fall, some time after it has made up in the large flocks which are commonly seen in the latter season.

As the name implies, it is a bird of meadow and pasture-land, the haying fields of southern New Eng-

land being its favorite home; it is also found in the salt marshes as well as the fertile tracts of the interior. Any suitable stretch of grass-land may have its pair or its colony of meadow larks, making very sweet idyllic music during the season of exultation. Great tenderness, almost pathos, is expressed in the liquid, sympathetic voice of these faithful creatures and devoted parents. The saddest and most reproachful strains which birds have ever poured into my ear were uttered for days in succession from a Meadow Lark whom I had deprived of his mate and his home during his brief absence. Not knowing what had become of them, he called so incessantly, with such sad surprise at no answer, such mournful beseeching and lamentation, that it made my heart ache.

The nest is made in such situations as I have described, on the ground, usually at the foot of a tuft of grass or low branching weed, which serves to conceal it; furthermore being often built over, so that there is an incompletely globular structure, with the entrance at one side. The eggs are laid late in May and in June. They are four to six in number, from 1.00 to 1.18 in length by 0.70 to 0.90 in breadth; pure white in ground color, finely and pretty evenly dotted and sprinkled all over with bright reddish-brown surface marks and lilac shell-spots. The male is tireless in his limpid minstrelsy, delivered from the convenient fence-post or nearest tree-top, while his mate is busy in the grass, and the scene of the Lark's summer home is one of rare rural felicity, as sweet as the fragrance of new-mown hay. Later in the season, when the flocks make up, the gentle, confiding disposition gives way to shyness and reserve; flocks scout the

pasture and stubble, and become favorite game birds with the rising generation of sportsmen, as they lie well in the grass and whirl up quickly enough to make good objects for the practice of shooting on the wing.

ORCHARD ORIOLE.

ICTERUS SPURIUS (L.) *Bp.*

Chars. Male : Black, with the lower back, rump, and under parts from the throat, chestnut ; a whitish wing-bar ; bill and feet blue-black. Length, 6.50-7.00 ; extent, 10.25 ; wing, 3.25 ; tail, 3.00. Female : Yellowish-olive above ; yellowish below ; wings dusky ; tips of wing-coverts and edges of inner quills whitish. Smaller than the male. The young male, at first like the female, afterwards confuses the characters of both sexes.

Although belonging to a family of birds most of the members of which are far from noted for architectural ability, the Orioles are distinguished for the dexterity and assiduity which they display in weaving the most elaborate pensile nests of grasses and other textile materials. The nest of the Orchard Oriole is one of the most perfect specimens of these woven purses, being generally more homogeneous in material if not more compact and substantial than that of the Baltimore. It is sometimes composed entirely of blades of grass, which may long retain their greenness, and so tend to the concealment of the structure in the foliage. The nest is smaller, and not so deep in proportion to its diameter as that of the Baltimore, and is apt to be less perfectly pendent from small twigs. The eggs are distinguishable from those of the Baltimore by their smaller size, averaging scarcely 0.85×0.60 , and being rather spotted than limned or scrawled.

The Orchard Oriole is rather a more southerly bird than its brilliant relative, at any rate not so common toward the limit of its distribution. It belongs to the Carolinian and Alleghanian, not the Canadian Fauna, and is more abundant in the valley of the Connecticut River than in other parts of New England. It scarcely reaches our southern border before May, and it is the middle of that month before the birds are generally distributed. The return movement occurs at the end of summer or very soon afterward. Massachusetts may be considered the usual and proper northern limit of the species, though it is occasionally seen in the States beyond.

BALTIMORE ORIOLE.

ICTERUS GALBULA (L., 1758) *Coues.*

Chars. Male : Head, neck, and back, black ; rump, upper tail-coverts, most of the tail-feathers, and under parts, orange ; middle tail-feathers black ; wings black ; the middle and greater coverts and inner quills edged and tipped with white ; bill and feet blue-black. Length, 7.50-8.00 ; wing, 3.60 ; tail, 3.00. Female : Smaller and paler ; black wanting, or much obscured by olive. Young resemble the female.

This is one of New England's beauties of bird-life, famous alike for its flash of color, its assiduity in singing, and its architectural ability. The "Golden Robin," "Fire-bird," or "Hang-nest," as it is indifferently called, comes to us in great numbers during the first and second week in May, and soon spreads over nearly all the country, growing rarer, however, as it proceeds north of Massachusetts, and wanting in

some of the further parts. It is faunally Alleghanian, though decidedly overlapping the Canadian. The return movement is accomplished in September, for the *Icteridæ*, with some notable exceptions, are birds of warm countries, the Oriole section particularly; and the two brilliant species which reach New England are unfitted to endure cold weather.

Though so bright and beautiful a bird in person, the interest which the Baltimore never fails to excite centres, after all, in the masterpiece of workmanship which his clever bill, like a needle with the eye at the point, suspends for our admiration from the drooping bough of the elm tree, under a canopy of tremulous foliage. It is more purse-like or deeply pouched than any other of our nests, and one of the most perfectly pensile of all. Much as we may wonder at the close texture of the finished fabric, as a piece of weaving, our surprise may be still greater that the clever craftsmen can contrive to set the first few fibres at all on a loom so primitive as that represented by the slender twigs to which they are attached. The materials employed are of the most miscellaneous character, pliable grasses and other plant-strips being usually mixed with strings or scraps of substances already spun or woven by the art of man. As may be supposed, so elaborate a fabric is not the work of a day or two, but may require a week or more. The finished affair is usually six or eight inches deep, but much less in breadth, and somewhat contracted at the mouth, or pursed out below; it is warmly lined with the softest vegetable substances or with hairs. Thus out of the reach of ordinary dangers, and assiduously nurtured by their devoted parents, the baby Baltimores rock

happily in their cradles with every breeze that passes, till they grow strong enough to try their wings.

No very high praise can be given to the song of this Oriole, which, though whistled loud and clear, has but little scope or variation, and grows monotonous with reiteration, especially of the syllables *tu-wee*, *tu-wee*. But we need not complain if we do not find all the accomplishments combined in one bird.

The eggs of the Baltimore are from four to six in number, measuring nearly an inch in length by about 0.65 in breadth, being thus rather narrowly elongate. The ground color is white, but seldom pure, being oftenest shaded with some neutral tint; the whole surface, or any part of it, most irregularly spotted, blotched, clouded, and especially scrawled, with blackish-brown and other heavy shades, and in addition to these strong colors the usual obscure shell markings. The scrawling lines that straggle aimlessly and even fantastically over the surface are highly characteristic of birds of this family, and bespeak the close relationship of the brilliant Orioles to their humbler relatives, the Blackbirds of the marsh. The time for the eggs is the first week in June.

The Baltimore is not particular as to his residence. Given trees suitable for nesting places, it makes little difference whether they are in the woods or in the heart of a city; yet, as if proud of his fine appearance and skill at the loom, he seems to court attention, and the shade-trees of our streets and parks are favorite resorts. Their choice of all trees — the stately, graceful elms which adorn New England landscapes — have one charm more when fired with such brilliancy

RUSTY GRACKLE.

SCOLECOPHAGUS FERRUGINEUS (*Gm.*) *Sw.*

Chars. Male, adult : Nearly uniform lustrous black, with greenish reflections. Seldom seen with us in perfect plumage, being generally glossy black, with nearly all the feathers edged with brown above and brownish-yellow below. Bill and feet always black. Female : Entirely rusty brown above, mixed rusty and grayish-black below, with a pale supraciliary stripe ; quills and tail-feathers black. Length of male, 9.00 or more ; extent, 14.50 ; wing, 4.50 ; tail, 3.50 ; bill, 0.75. Female smaller.

Being a bird of the Canadian Fauna, this Grackle nests in northern New England and thence far toward the Arctic circle. The southern limit of its distribution in summer appears to coincide closely with that of the Fauna just named. Elsewhere it is chiefly known as a migrant in spring and fall, though a few individuals certainly pass the winter in the lower Connecticut valley. From their usual winter resorts beyond our limits, great numbers enter New England in February and March, and may be observed in Massachusetts through a considerable part of April, before they finally pass on to their summer homes. In the fall they return early, generally in September, and are abundant for a couple of months. At all times when away from their breeding grounds they are found in flocks of greater or less extent, rambling in search of food over ploughed land and other open ground, sometimes by themselves, sometimes associated with other Blackbirds.

Those who know the bird only in the rusty garb in which it is usually seen with us, would be surprised to

see what a handsome glossy bird the male is when full dressed, with a sheen to the plumage scarcely inferior to that of the Purple Grackle itself, although less variable. According to Mr. E. A. Samuels, who examined breeding places of the bird on the Magalloway River, in Maine, the nests are large structures, easily seen at a distance of some rods through the foliage of the low alders, overhanging the water, on which bushes they are built. The nest proper is constructed on a layer of twigs and briar-stalks, being composed of grasses mixed with mud, moulded into a firm circular structure, and lined with fine grasses and rootlets.

The eggs of Grackles of this genus are quite different from those of *Agelæus*, *Quiscalus*, and *Icteridæ* generally, being flecked and clouded, but with little or no line-tracery. The ground color is pale dull greenish, varying to bluish or grayish, and this is plentifully marked with dark brown. They vary too much in the character of the spotting to be very concisely described. The size is about 1.05×0.75 , but very variable. They are not satisfactorily distinguishable from those of the other species *Scolecophagus cyanocephalus*, though quite different from those of any other of our *Icteridæ*. I am however informed by Mr. Purdie that two sets of eggs, one from Upton, Maine, the other from Nova Scotia, do not closely resemble those of the Western species, being quite sparingly marked, and answering more to the eggs described by Dr. Brewer, from Calais, Maine, (Hist. N. A. Birds, ii. p. 206). The number is presumably four to six, though no one of thirteen sets examined from Arctic America contained more than four.

PURPLE GRACKLE; CROW BLACKBIRD.

QUISCALUS PURPUREUS (*Bartr.*) *Licht.*

Chars. Male: Entire plumage iridescent black, with various purple-green and steel-blue reflections. Length, 12.00-13.00; extent, about 18.00; wing and tail, each, 5.00-6.00, the former rather longer than the latter; bill, 1.25; tarsus, 1.35; tail graduated 1.00-1.50. Female: Smaller. Length, about 11.50; wing, about 5.00; tail, about 4.50. Blackish-brown in color, with more or less lustre.

Crow Blackbirds may be seen anywhere in New England during the greater part of the year, being entirely absent only in December and January. A few commonly reach our limits the latter part of February, though they are not common until April, unless it be in the extreme south. They thin out in October, and disappear the following month. Being characteristic of no faunal area, they breed at large in New England, generally assembling for that purpose in chosen spots, where so many may congregate as make quite a rookery, like some of their corvine allies of Europe. The nest is placed in trees at any height, preferably conifers or other thick-foliaged kinds; generally on the boughs, but sometimes in a hollow. In some sections it is placed in hollow stubs, in low trees near water, and even in bushes. The nest is loose and bulky, of twigs and other coarse materials, to which mud may be added. The structures are generally completed and the eggs laid by the latter part of May. The courtships of the males seem very ludicrous to a dispassionate observer, being conducted with the most grotesque actions and attitudes, as well

as the most curious vocalization. After the breeding colonies break up, vast bands of the Blackbirds come together, and scour the country in search of food, then doing no inconsiderable damage to the crops, possibly not entirely offset by the benefit conferred earlier in the season, when the Blackbirds are chiefly carnivorous.

The eggs of this species exhibit fully the scrawling markings characteristic of the *Icteridæ*, but are almost endlessly varied in tone of ground color and pattern of the markings. Mr. Minot has thrown the variations into the following categories: (1) Strongly bluish, with almost imperceptible lilac markings, and a few spots and thick scrawls of blackish-brown. (2) Strongly greenish, marked with dull, faint brown, and a few blackish scrawls. (3) Light creamy gray, with some scrawls much subdued, as if washed out, or washed over with the ground color, and others heavy and permanent, suggesting a tremulous handwriting made with a very broad-nibbed pen. (4) Of an indefinite light shade, with numerous small blotches of subdued, dull brown. (5) Dirty white, minutely marked with light purplish-brown, and one blackish blotch. (6) Very light greenish, faintly and evenly marked with lilac and dull brown. "In short," he continues, "the ground color varies from a rather strong bluish-green to various faint and indefinite shades, and the markings (which are often coarse scrawls or blotches) from blackish to light and vague colors, all of which are for the most part dull, the brightest being rusty brown." There is the usual variation in the size and shape, ordinary dimensions being 1.25×0.90 . Five or six eggs are laid.

Some writers contend that there are two kinds of Crow Blackbirds in New England, one of them being that lately described as the Bronzed Grackle, *Quiscalus purpureus æneus*. This is considered to be a spring and autumn migrant in Southern New England, and a summer resident of the more northern portions. The account given of the habits applies as well to one as to the other.

BOAT-TAILED GRACKLE.

QUISCALUS MAJOR V.

Chars. "♂, 15½-17 long; wing and tail, 7-8; bill, about 1½; graduation of the tail, under 3 inches; tarsus, nearly 2; middle toe and claw, about the same; the general iridescence green, purple, or violet, mainly on the head. ♀ astonishingly smaller than the ♂, lacking entirely the great development of the tail, and not to be mistaken for ♀ *purpureus*, being never so glossy; 12-13½; wing, 5½-6; tail, 4¾-5½. ♀ and young apt to be quite brown, only blackish on the wings and tail, below grayish brown, frequently whitening on the throat and breast. South Atlantic and Gulf States, on the coast; strictly maritime, abundant; N. regularly to the Carolinas, frequently to the middle districts, but *not* to New England, as currently reported."—(Coues.)

The New England records of this Southern States' bird are confused and perplexing. It was distinctly said by some of the earlier ornithologists, as Linsley and Peabody, to occur in Connecticut and Massachusetts. Samuels's Massachusetts List of 1864 speaks of its breeding at Cambridge, Mass.; Allen includes it in his List of 1864 (Pr. Essex Inst., iv, p. 85); and on the strength of these data Coues gave it a place in 1868 (Pr. Essex Inst., v, p. 285). Samuels, how-

ever, later omitted it from his work, and Allen threw doubt on the whole New England record (*Am. Nat.*, iii, 1870, p. 636); since which statements, Brewer, Coues, Merriam, and Minot, as well as Allen, have declined to recognize the species as occurring in New England. (See *Coues*, *B. N. W.*, 1874, p. 204; *Brewer*, *Pr. Bost. Soc.*, xvii, 1875, p. 451, and *Bull. Nutt. Club*, i, 1876, p. 91; ii, 1877, p. 45; *Merriam*, *Pr. Conn. Acad.*, iv, 1877, pp. 48 and 146). Mr. Purdie, however, is inclined to think that the record, at least in part, justifies the recognition of the species in the present connection (*Bull. Nutt. Club*, i, 1876, p. 72; ii, 1877, p. 12).

FAMILY CORVIDÆ : CROWS AND JAYS.

RAVEN.

CORVUS CORAX L.

Chars. Color uniform lustrous black, including the bill and feet; nasal bristles about half as long as the bill; throat-feathers lengthened, lanceolate, disconnected. Length, about 24.00; extent, about 48.00; wing, 16.00-18.00; tail, 9.00-10.00; bill, 2.25; tarsus, 3.00.

The ominous bird of the sable plume, whose voice is heard so dismally in works of the imagination and in traditions of folk-lore, holds but slight place in the history of New England ornithology. It appears to have been not uncommon a generation and more ago, but is now certainly one of the rarities, late records of its appearance being few. The bird still breeds occasionally on the cliffs of Grand Menan, and is of more frequent occurrence further north and east. It presumably breeds in the White and Green Mountains. Mr. Cutting has found it in Vermont, and there are at least two recent Massachusetts records. Prof. Tenny notices a specimen at Williamstown (*Am. Nat.*, xi, 1877, p. 243), and Mr. Maynard speaks of one shot at Tyngsboro' (*Rod and Gun*, vii, Oct. 30, 1875). The latter writer believes (*B. of E. N. A.*, p. 155) that the Raven breeds in this locality, as a newly-fledged individual was procured by Mr. William Perham, who states that he was positive of the fact.

COMMON CROW.

CORVUS FRUGIVORUS *Bartr.*

Chars. Color uniform lustrous black, including the bill and feet; nasal bristles about half as long as the bill; throat-feathers oval and blended; no naked space on cheeks. Length 18.00-20.00; wing, 13.00-14.00; tail, about 8.00; bill, 1.75-2.00; tarsus, about equal to middle toe and claw.

The Crow is a common New England bird, quite irrespective of latitude, and resident throughout our country. At the same time, it is a creature of great sagacity and full of resources for making itself comfortable; so that the actual dispersion, whether of single individuals or of the great congregations so often observed, fluctuate with the food-supply and the changes of weather. It is on the whole most numerous in cultivated districts, where a varied fare is readily secured, and where are learned instinctively those arts and wiles by which the unpopular fowl demonstrates its fitness to survive in the struggle for existence. Wary and mistrustful as it is, skeptical of things that are not what they seem to be, its fertility of inventions to shun delusion is no more than necessary to self-preservation; for the bird has a bad name, which alone is a serious thing to contend against, to say nothing of the actual damage it does to the grain-field. But I doubt that even the proscribed and persecuted Crow does not do more good than harm. It is so omnivorous, that the seedling or standing crops furnish but a tithe to its whole subsistence, numberless forms of noxious animals being destroyed in the Crow's natural walk in life. In any event, the bird

seems to hold its own, in spite of strychnine and gunpowder, without any appreciable disaster to agriculture; the comely, glistening black form being perhaps, after all, only a "scare-crow," incapable of any serious mischief.

The habits and manners of Crows depend so much upon changeful circumstances, that it is difficult to say much in a few words of the exhibitions of such versatile characters. A Crow may be found in as varying moods as a man, and attending to affairs as various as those of human vanity or profit. To say what a Crow will be found about at any given time or under any given circumstances, is to say what is going on in its mind; and that is not easy. One Crow, in short, plays many parts with great address, and usually with entire success. When a Crow speaks, the monosyllable is always to the point; its "caw" is a case where dictum and fiat are one.

As anecdotes of Crows are always in order, I may refer to the story told by Mr. A. M. Frazar (Bull. Nutt. Club, i, 1876, p. 76) of a Crow which stood patiently upon an ant-hill and allowed the busy insects to run all over him, and pick off the parasites which infested his body. "The operation," Mr. Frazar adds, "seemed mutually agreeable to all parties." But how about the parasites, thus rudely snatched from happy homes and condemned to death?

The nest is built in the woods, preferably in high, thick forest, where the tree selected is usually one whose foliage is thickest, as pine or cedar. Thus it happens that though the structure is a large one, it is not so often observed as that of a Hawk, comparing the relative numbers of these kinds of nests. The

altitude is generally great, the situation of the nest being often practically inaccessible; and the parents show, moreover, much tact and discretion in going and coming. So it commonly turns out that their housekeeping is a success. The foundation and outer walls of the nest are built of twigs and sticks, sometimes of considerable size, firmly interlaced, with the interstices perhaps filled up with weeds or bunches of grass which may have clods of earth attached. The inner structure is of grasses, leaves, and strips of bark, such as those from cedar or grape-vines. A Pennsylvania nest in my possession is made entirely of hogs' bristles, the bird having built near a pen where pork was made, and doubtless found that these stiff hairs answered the purpose. Mr. Maynard states that he has found nests in apple-trees, not ten feet from the ground. Nesting is early, — in May, if not in April, — and four to six eggs fill the nest, measuring about 1.70×1.20 , but being very variable in size and shape. Thus, one specimen measures 1.50×1.10 , another 1.90×1.10 . The ground color is greenish of some shade; sometimes quite clear bluish-green, or even greenish-white, oftener dull grayish or olive-green. The marking varies interminably, but it is nearly always profuse, and more or less evenly overlying the whole surface. It is some dark shade of brown, probably near reddish or flesh-tinted. The heavy surface markings greatly preponderate over the obscure shell spots, though more or fewer of the latter may usually be seen. In rare cases, the egg is whitish and nearly immaculate. The markings tend in many samples to elongate into streaks running with the greatest diameter.

FISH CROW.

CORVUS OSSIFRAGUS *Wils.*

Chars. Like the last. Length, 16.00 or less; wing, 10.00-11.00; tail, 6.00-7.00; tarsus, about equal to middle toe without claw; a bare space on cheek.

Though much has been said against the New England record of the Fish Crow, enough of it is authentic to give the bird unquestionable right to the place it held for nearly forty years before it was ejected by Dr. Brewer on the strength of his own opinion. (See Pr. Bost. Soc., xvii, 1875, p. 452; Bull. Nutt. Club, i, 1876, p. 91; ii, 1877, p. 46.) In 1868, Dr. Coues spoke of the bird in terms the pertinence of which has since been established, calling it "a rare summer visitor, chiefly along the more southern portions of the coast" (Pr. Essex Inst., p. 286). In 1878, Dr. Brewer reiterated his previous implied denials of its occurrence in New England, with the proviso, however, that the demonstration of the fact was only a question of time (Pr. Bost. Soc., xix, 1878, p. 306). Satisfactory evidence, however, was then, as it had long been, in our possession. Dr. Linsley had long before given the bird as occurring at Stratford, Conn. (Am. Jour. Sci., xlv, 1843, p. 260); Mr. Merriam had endorsed this record (Tr. Conn. Acad., iv, 1877, pp. 49, 145); Mr. Brewster had expressed his confidence that he had seen a Fish Crow at Cambridge, March 16, 1875 (Bull. Nutt. Club, i, 1876, p. 19); and Mr. Purdie had given a summary of the New England record (Bull. Nutt. Club, ii, 1877, p. 13). Mr. Allen, in his

latest list (Bull. Essex Inst., x, 1878, p. 33), with good reason as well as with caution, speaks of the bird as "probably rare or accidental" in Massachusetts, and adds that the captures of specimens at West Point, N. Y., and on Long Island, "render it almost certain that stragglers will soon be taken here." Opinion aside, the fact remains that the Fish Crow is a bird of the Carolinian Fauna, hence finding its normal northern extension in the valley of the lower Connecticut, and occasionally straggling into Massachusetts. (See *Zerga*, Bull. Nutt. Club, v, 1880, p. 205, and *Purdie*, *ibid.*, p. 240.)

BLUE JAY.

CYANOCITTA CRISTATA (L.) *Strickl.*

Chars. Head conspicuously crested. Bill and feet black. Above, purplish-blue; below, pale purplish-gray, bleaching on the throat, belly, and lower tail-coverts, with a black collar across the throat, running up behind the crest; forehead black, with whitish border; wings and tail bright blue, varied with black; the greater wing-coverts, the secondaries, and most of the tail-feathers, broadly tipped with white. Length, 11.50-12.00; extent, 16.50-17.50; wing, 5.00-5.50; tail, about the same.

The Jay is a very questionable character, whose entire lack of moral dignity and high principle is attested by a life of insincerity, dishonesty, and profligacy, and whose errors are far from condoned by his fine personal presence. But the rascal has assurance, which is a great social lever, and so continues to hold his own, even in New England, where he is perfectly well known, and where it would seem the bad luck of being found out is not an absolutely unpardonable sin.

The Jay is oftener observed in summer than in winter, and in other than the extreme northerly parts of the country; nevertheless, it is resident, as a species, though the same individuals may not remain permanently in any one locality. Its rowdyish habits are too well known to require description; nor would such narrative be an agreeable one to fastidious ears. The bird is perhaps seen at its best during the nesting season, when least reckless and abandoned, and again in the fall, when its provident store of food gives evidence that it is not entirely thriftless. The nesting is essentially the same as that of the Crow, though smaller trees, and even bushes, are often selected, and the eggs are not laid usually till the latter part of May. The eggs are very variable in color. The normal shade of the ground is pale, dull olive-green, varying to clearer greenish, and also to clay-color, or even light creamy-brown. The spotting is profuse, and pretty uniform, though usually less pronounced than that of a Crow's egg, and sometimes quite obsolete. The size is about 1.15×0.85 , but with the usual variation either way.

CANADA JAY.

PERISOREUS CANADENSIS (L.) *Bp.*

Chars. No crest; color gray, whitening anteriorly, darker on the nape; wing and tail dark plumbeous, with obscure whitish tips on the feathers; bill and feet black. Length, 10.00-11.00; wing, 5.50-6.00; tail, about 6.00; tarsus, 1.30; bill, less than 1.00. Young birds are sooty or smoky brown, whitening as they reach maturity.

Unlike all the other Jays of America, "Whiskey Jack" is a boreal and alpine species, seldom observed in the United States except along our northern border and among the mountains of the West. It is resident in northern New England, and is apparently one of those species, like the Hudsonian Titmouse, whose range in the breeding season defines the Canadian Fauna. Not being properly a migratory bird, it only casually occurs beyond such limits. Mr. Merriam makes no allusion to its presence in Connecticut, and Mr. Allen's Massachusetts list includes it only among the probabilities of Berkshire County. According to Mr. Maynard, specimens have been taken in June, at Umbagog, which is south of its usual summer range. Mr. Cutting informs me that it breeds in Vermont. A Maine nest found by Mr. Boardman is described as built upon a platform of interlaced twigs, being closely felted with mosses and lined with feathers. An egg formerly in my possession, measuring 1.17×0.80 , was ashy-gray, finely dotted with yellowish-brown. Four or five are said to be the usual number laid.

In his recent work, "The Birds of Eastern North America," p. 168, Mr. Maynard speaks of seeing an individual at Newtonville, Mass., early in the summer. Having nearly caught the bird, he succeeded in identifying it beyond question. He writes that the species is said to breed in February, in evergreen-trees. Mr. Lawrence notes a specimen shot in mid-summer at Manhattanville, New York Island. This interesting species is variously known as Whiskey Jack, Meat Hawk, Carrion Bird, and Moose Bird.

INDEX OF ENGLISH NAMES.

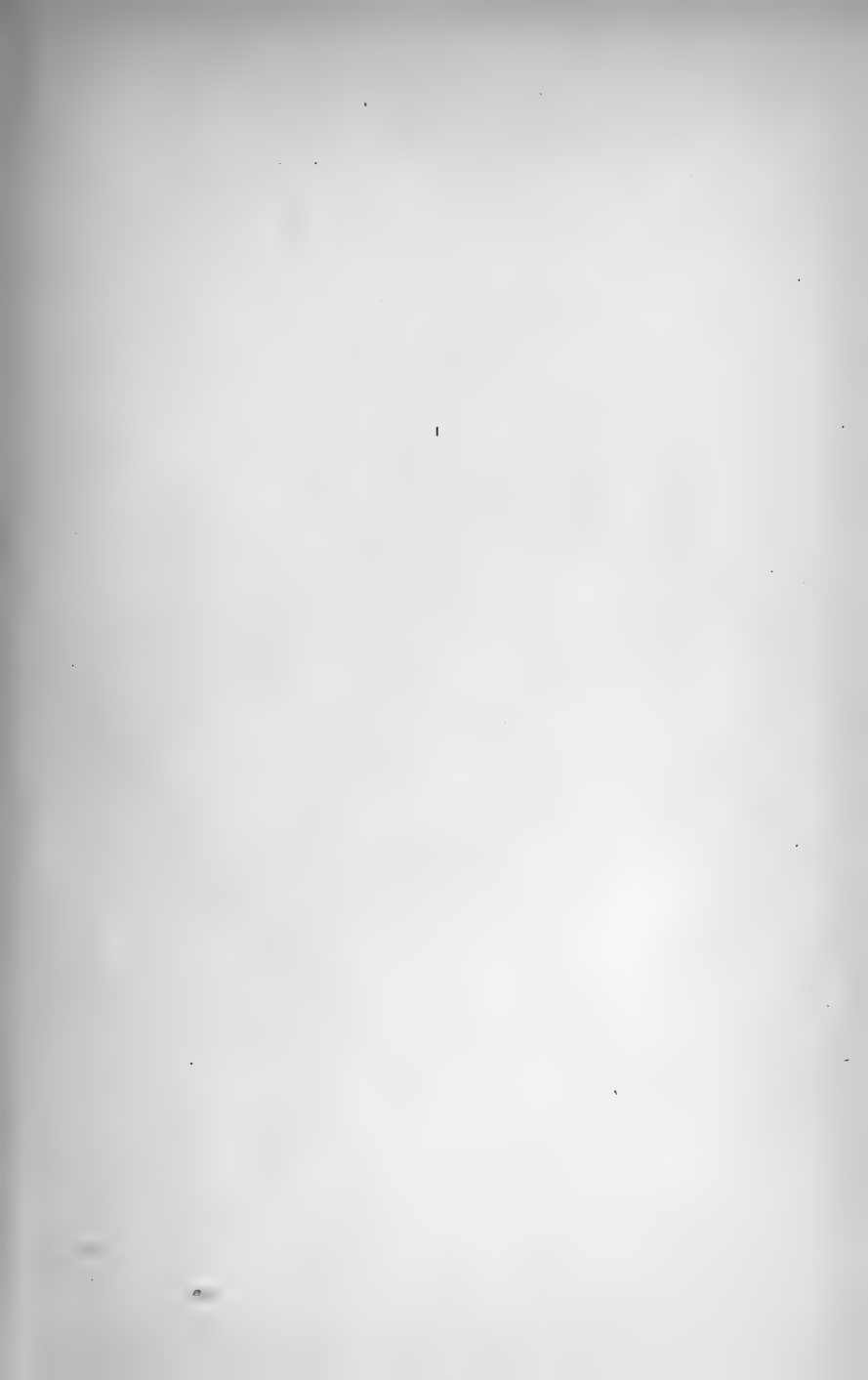
- Accentor, Golden-crowned, 155.
 Large-billed, 158.
 New York, 157.
Blackbird, Cow, 295.
 Crow, 309.
 Red-winged, 298.
 Yellow-headed, 300.
Blue-bird, 68.
Bobolink, 292.
Bunting, Bay-winged, 240.
 Black-throated, 279.
 Lark, 279.
 Snow, 230.
 Towhee, 289.
Butcher-bird, 207.
Cat-bird, 63.
Cedar-bird, 192.
Chat, Stone, 67.
 Yellow-breasted, 168.
Cherry-bird, 192.
Chewink, 289.
Chickadee, 83.
Cow-bird, 295.
Creeper, Brown, 90.
Crossbill, American Red, 221.
 White-winged, 218.
Crow, Common, 314.
 Fish, 317.
Finch, Grass, 240.
 Lark, 278.
 Mountain, 290.
 Purple, 216.
 Serin, 291.
Gnatcatcher, Blue-gray, 77.
Goldfinch, American, 226.
 European, 291.
Grackle, Boat-tailed, 311.
 Purple, 309.
 Rusty, 307.
Greenlet, Blue-headed, 203.
 Brotherly-love, 197.
 Red-eyed, 195.
 Warbling, 200.
 White-eyed, 205.
 Yellow-throated, 201.
Grosbeak, Blue, 284.
 Cardinal, 287.
 Pine, 214.
 Purple, 216.
 Rose-breasted, 285.
Hair-bird, 266.
Indigo bird, 282.
Jay, Blue, 318.
 Canada, 319.
Kinglet, Golden-crested, 73.
 Ruby-crowned, 71.
Lark, Field, 301.
 Horned, 102.
 Shore, 102.
 Tit, 104.
Linnet, Brewster's, 225.
 Mealy Red-poll, 224.
 Pine, 228.
 Red-poll, 222.
Longspur, Chestnut-collared, 234.
 Lapland, 233.
Martin, Purple, 189.
Maryland Yellow-throat, 164.
Mocking-bird, 61.
Myrtle-bird, 131.
Nuthatch, Red-bellied, 88.
 White-bellied, 87.
Oriole, Baltimore, 304.
 Orchard, 303.
Oven-bird, 155.
Pipit, American, 104.
Raven, 313.
Redstart, 175.

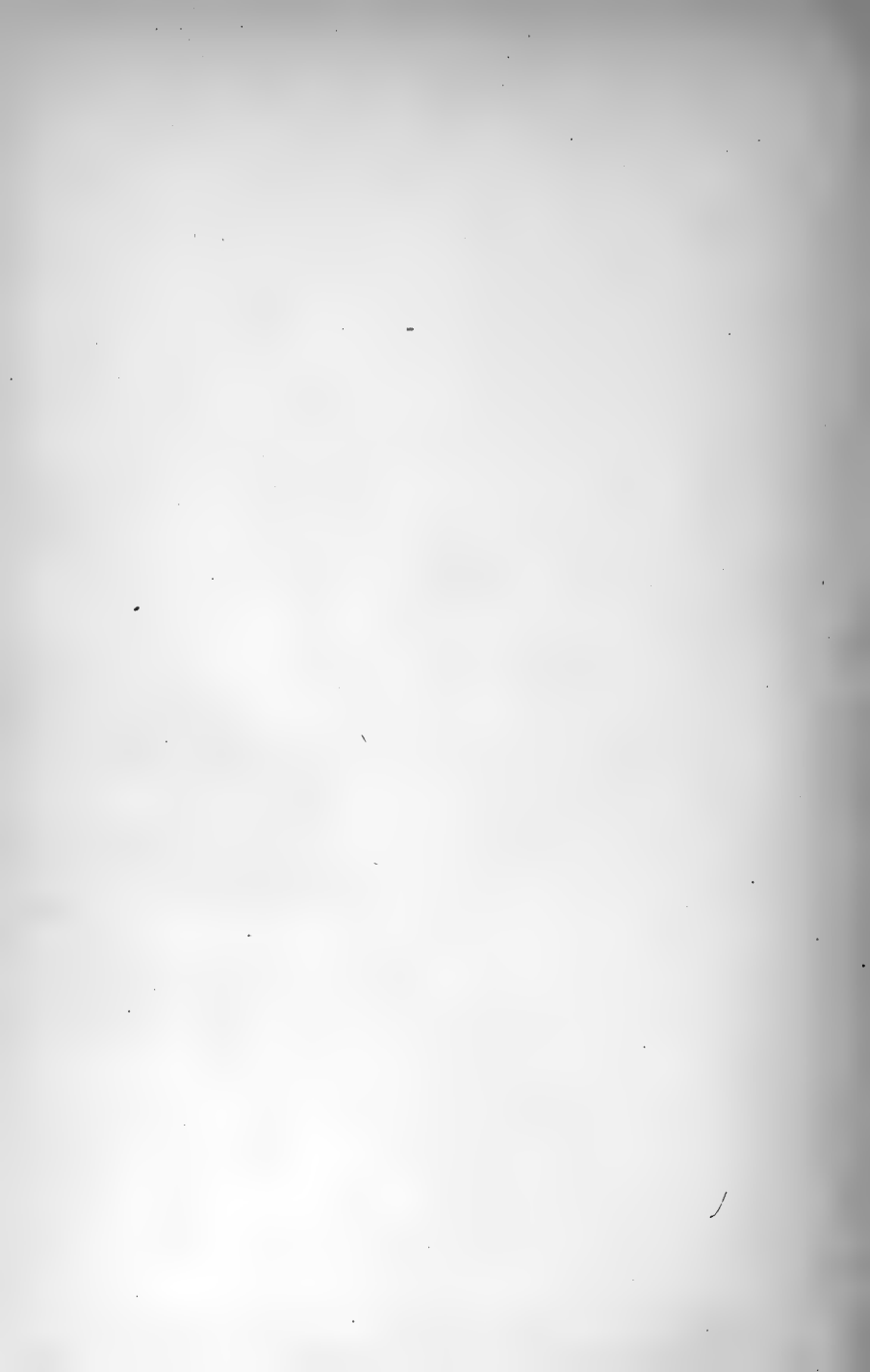
- Robin, 1.
 Siskin, American, 228.
 Shrike, Great Northern, 207.
 Loggerhead, 209.
 White-rumped Loggerhead, 212.
 Snow-bird, Black, 260.
 Oregon, 263.
 Snow-flake, 230.
 Sparrow, Brewer's, 272.
 Chipping, 266.
 Field, 269.
 Fox, 276.
 Henslow's, 245.
 House, 290.
 Ipswich, 235.
 Lincoln's, 252.
 Savanna, 238.
 Sea-side, 251.
 Sharp-tailed, 247.
 Song, 256.
 Swamp, 254.
 Tree, 262.
 White-crowned, 275.
 White-throated, 272.
 Yellow-winged, 242.
 Stone Chat, 67.
 Summer Yellow-bird, 122.
 Swallow, Bank, 186.
 Barn, 181.
 Cliff, 184.
 Eave, 184.
 Rough-winged, 187.
 White-bellied, 183.
 Tanager, Louisiana, 180.
 Scarlet, 177.
 Summer, 179.
 Thrasher, 65.
 Thistle-bird, 226.
 Thrush, Brown, 65.
 Gray-cheeked, 59.
 Hermit, 55.
 Louisiana Water, 158.
 Olive-backed, 57.
 Robin, 1.
 Tawny, 60.
 Varied, 53.
 Water, 157.
 Wood, 54.
 Titlark, 104.
 Titmouse, Black-capped, 83.
 Hudsonian, 85.
 Tufted, 82.
 Veery, 60.
 Vireo, Blue-headed, 203.
 Brotherly-love, 197.
 Red-eyed, 195.
 Solitary, 203.
 Warbling, 200.
 White-eyed, 205.
 Yellow-throated, 201.
 Warbler, Audubon's, 133.
 Bay-breasted, 138.
 Black-and-White creeping, 106.
 Black-and-Yellow, 143.
 Blackburn's, 134.
 Black-poll, 136.
 Black-throated Blue, 127.
 Black-throated Green, 124.
 Blue Golden-winged, 115.
 Blue-winged Yellow, 111.
 Blue Yellow-backed, 108.
 Canadian Flycatching, 173.
 Cape May, 145.
 Chestnut-sided, 141.
 Cerulean, 129.
 Connecticut, 160.
 Green Black-capped, 171.
 Hooded, 170.
 Kentucky, 162.
 Maryland Yellow-throat, 164.
 Mourning, 166.
 Nashville, 117.
 Orange-crowned, 118.
 Pine-creeping, 152.
 Prairie, 147.
 Prothonotary, 109.
 Redstart, 175.
 Summer, 122.
 Tennessee, 120.
 White-throated, 113.
 Worm-eating, 110.
 Yellow, 122.
 Yellow Red-poll, 150.
 Yellow-rumped, 131.
 Yellow-throated, 149.
 Waxwing, Bohemian, 191.
 Carolina, 192.
 Wheat-Ear, 67.
 Wren, Great Carolina, 93.
 House, 95.
 Long-billed Marsh, 99.
 Short-billed Marsh, 100.
 Winter, 97.
 Yellow-bird, 226.

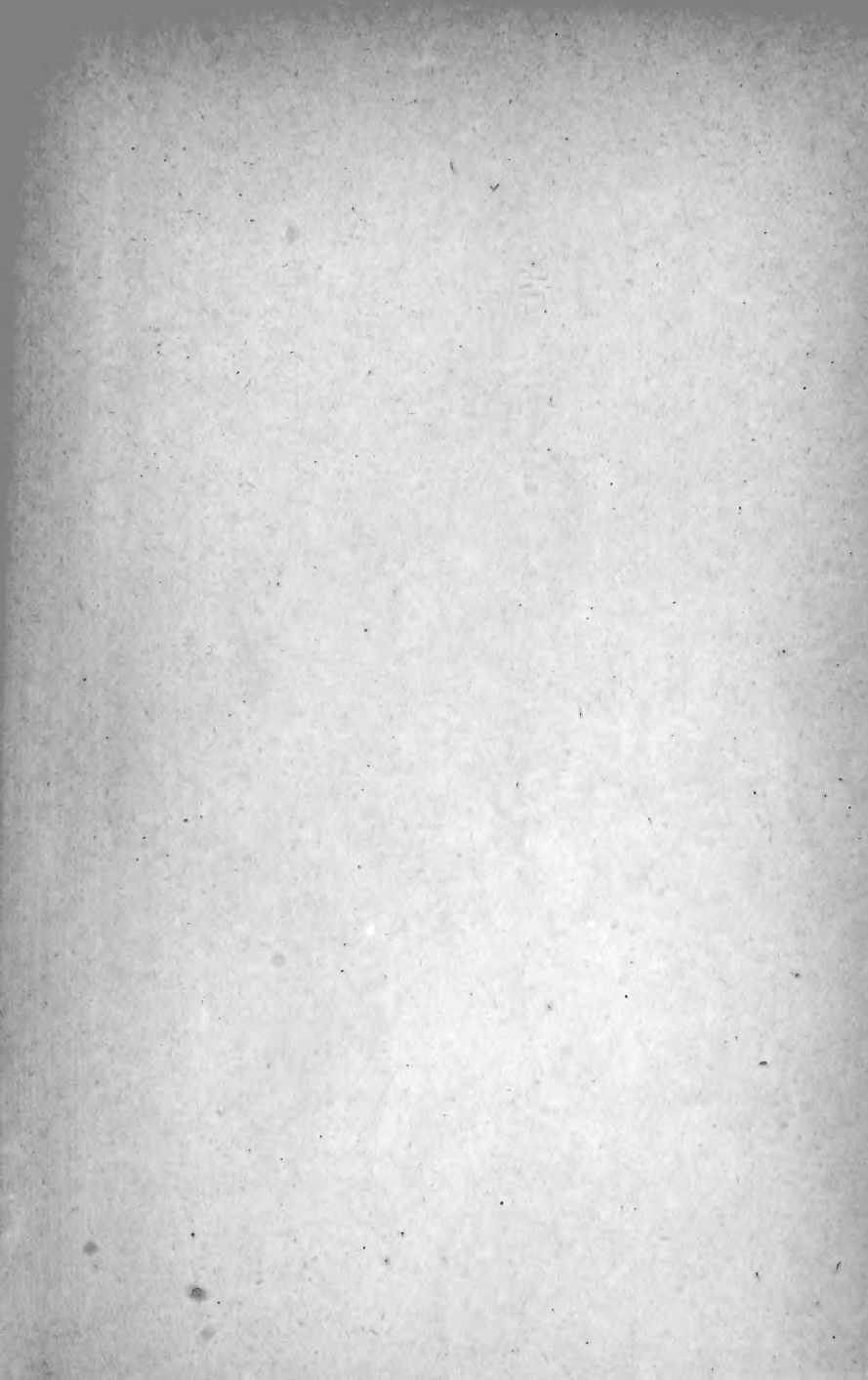
INDEX OF SCIENTIFIC NAMES.

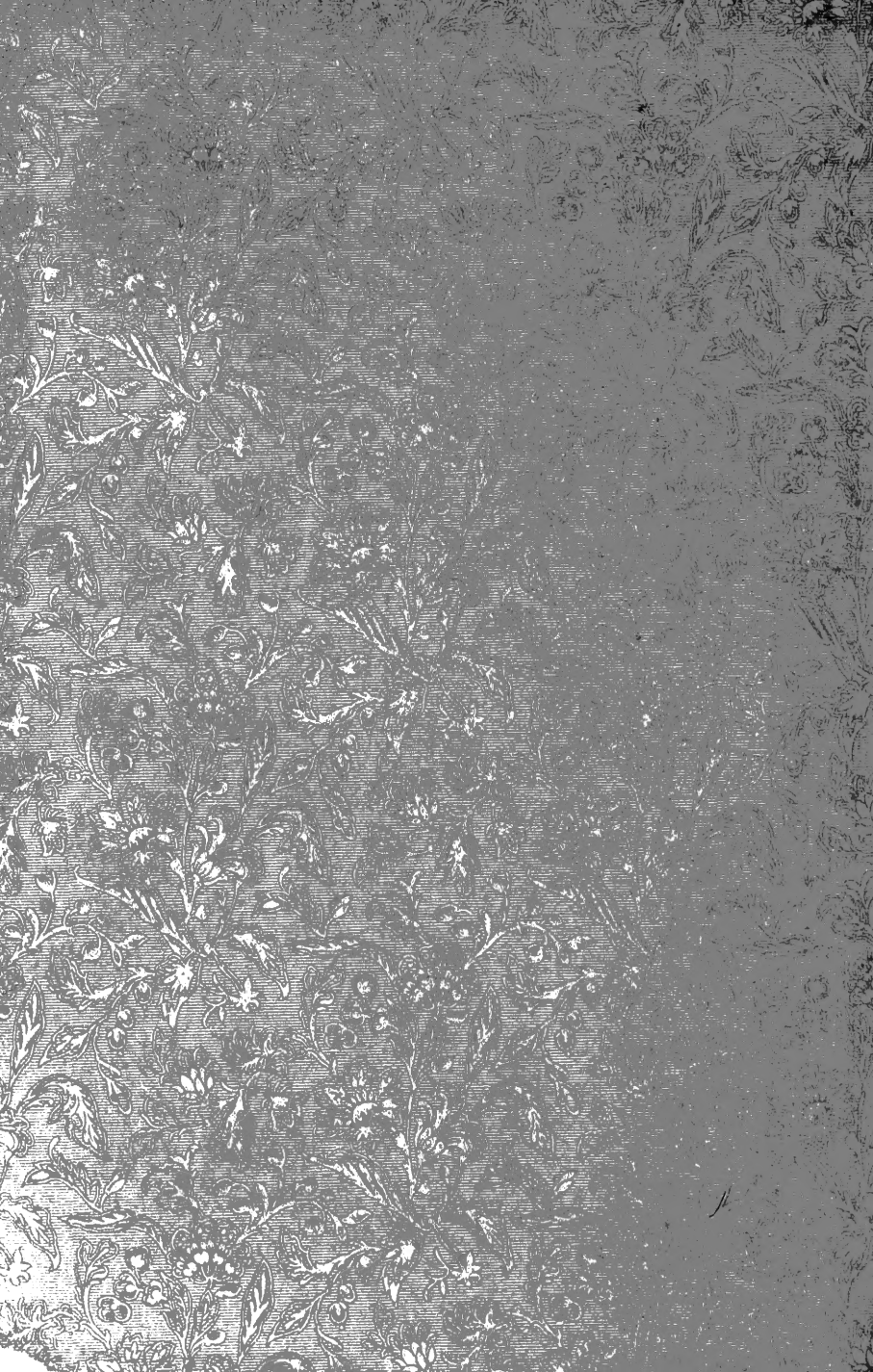
- Ægiothus exilipes*, 224.
 linaria, 222.
Agelaius phœniceus, 298.
Amadina rubronigra, 291.
Ammodramus candacutus, 247.
 maritimus, 251.
Ampelis cedrorum, 192.
 garrulus, 191.
Anothura troglodytes hyemalis, 97.
Anthus ludovicianus, 104.
Astragalinus tristis, 226.
Calamospiza bicolor, 279.
Cardinalis virginiana, 287.
Cardulis elegans, 291.
Carpodacus purpureus, 216.
Centrophanes laponicus, 233.
 ornatus, 234.
Certhia familiaris, 90.
Chondestes grammicus, 278.
Chrysomitris pinus, 228.
Cistothorus stellaris, 100.
Corvus corax, 313.
 frugivorus, 314.
 ossifragus, 317.
Coturniculus henslowi, 245.
 passerinus, 242.
Cotile riparia, 186.
Crithagra butyracea, 291.
Cyanocitta cristata, 318.
Dendrocæca æstiva, 122.
 auduboni, 133.
 blackburnæ, 134.
 castanea, 138.
 cœrulea, 129.
 cœrulescens, 127.
 coronata, 131.
 discolor, 147.
 dominica, 149.
 maculosa, 143.
Dendrocæca palmarum, 150.
 pennsylvanica, 141.
 pinus, 152.
 striata, 136.
 tigrina, 145.
 virens, 124.
Dolichonyx oryzivorus, 272.
Eremophila alpestris, 102.
Geothlypis philadelphia, 166.
 trichas, 164.
Gubernatrix cristatella, 291.
Guiraca cœrulea, 284.
Harporhynchus rufus, 65.
Helminthophaga celata, 118.
 chrysoptera, 115.
 leucobronchialis, 113.
 perigrina, 120.
 pinus, 111.
 ruficapilla, 117.
Helmintherus vermivorus, 110.
Hirundo erythrogastra horreorum, 181.
Icteria virens, 168.
Icterus galbula, 304.
 spurius, 303.
Iridoprocne bicolor, 183.
Junco hyemalis, 260.
 oregonus, 263.
Lanius borealis, 207.
 ludovicianus, 209.
 ludovicianus excubitorides, 212.
Linota flavirostris brewsteri, 225.
Lophophanes bicolor, 82.
Loxia curvirostra americana, 221.
 leucoptera, 218.
Melospiza fasciata, 256.
 lincolni, 252.
 palustris, 254.
Mimus carolinensis, 63.
 polyglottus, 61.

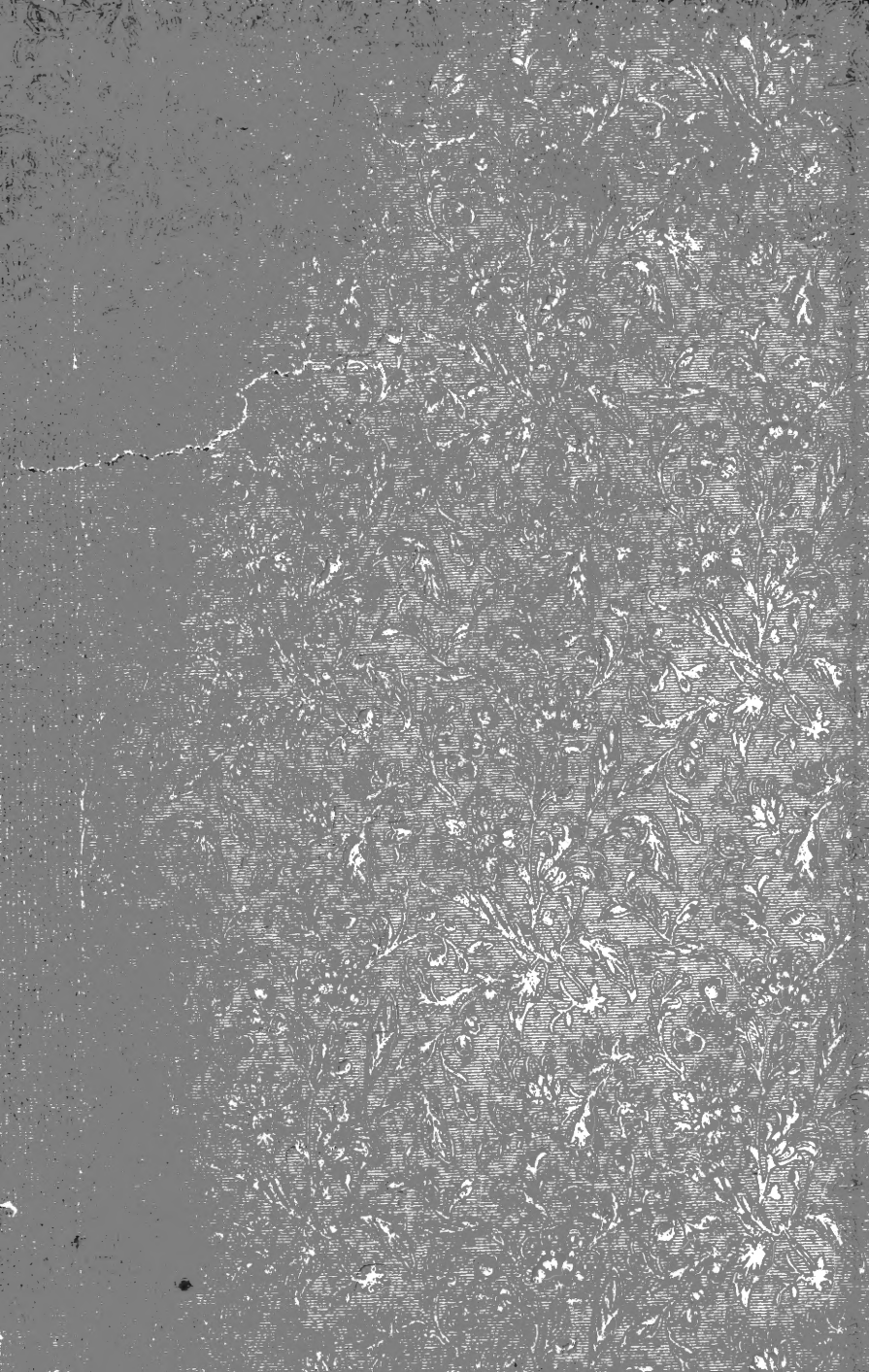
- Mniotilta varia*, 106.
Molothrus ater, 295.
Orpornis agilis, 160.
 formosa, 162.
Parula americana, 108.
Parus atricapillus, 83.
 hudsonicus, 85.
Passer domesticus, 290.
 montanus, 290.
Passerculus princeps, 235.
 savana, 238.
Passerella iliaca, 276.
Passerina cyanea, 282.
Perisoreus canadensis, 319.
Petrochelidon lunifrons, 184.
Pinicola enucleator, 218.
Pipilo erythrophthalmus, 289.
Plectrophanes nivalis, 230.
Poliophtila cœrulea, 77.
Poœcetes gramineus, 240.
Progne subis, 189.
Protonotaria citrea, 109.
Pyranga æstiva, 179.
 ludoviciana, 180.
 rubra, 177.
Quiscalus major, 311.
 purpureus, 309.
Regulus calendula, 71.
 satrapa, 73.
Saxicola œnanthe, 67.
Scolecophagus ferrugineus, 307.
Serinus meridionalis, 291.
Siurus auricapillus, 155.
 motacilla, 158.
 nævius, 157.
Setophaga ruticilla, 175.
Sialia sialis, 68.
Sitta canadensis, 88.
 carolinensis, 87.
Spiza americana, 279.
Spizella agrestis, 269.*
 breweri, 272.
 domestica, 266.
 monticola, 263.
Stelgidopteryx serripennis, 187.
Sturnella magna, 301.
Telmatodytes palustris, 99.
Thryothorus ludovicianus, 93.
Troglodytes domesticus, 95.
Turdus fuscescens, 60.
 migratorius, 51.
 mustelinus, 54.
 nævius, 53.
 pallasi, 55.
 swainsoni, 57.
 swainsoni aliciaæ, 59.
Vireo flavifrons, 201.
 gilvus, 200.
 noveboracensis, 205.
 olivaceus, 195.
 philadelphicus, 197.
 solitarius, 203.
Wilsonia canadensis, 173.
 mitrata, 170.
 pusilla, 171.
Xanthocephalus icterocephalus, 300.
Zamelodia ludoviciana, 285.
Zonotrichia albicollis, 272.
 leucophrys, 275.











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