

BIRD HOMES



A.R. DUGMORE

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BIRD HOMES



GLOBULAR NEST OF THE LONG-BILLED MARSH WREN.
(The young bird was just leaving the nest as the photograph was taken.)

BIRD HOMES. THE NESTS
EGGS AND BREEDING HABITS OF
THE LAND BIRDS BREEDING IN THE
EASTERN UNITED STATES; WITH
HINTS ON THE REARING AND PHO-
TOGRAPHING OF YOUNG BIRDS

BY
A. RADCLYFFE DUGMORE

ILLUSTRATED WITH PHOTOGRAPHS
FROM NATURE BY THE AUTHOR



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TO MY MOTHER
THIS BOOK IS AFFECTIONATELY
DEDICATED



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“
A bird's nest. Mark it well, within, without,
No tool had he that wrought, no knife to cut,
No nail to fix, no bodkin to insert,
No glue to join ; his little beak was all.
And yet how neatly finish'd ! What nice hand,
With every implement and means of art,
And twenty years' apprenticeship to boot.
Could make me such another ?”—HURDIS.





BIRD HOMES

BIRD HOMES

PART I

Chapter I

INTRODUCTORY

It has been suggested that a work on Bird Homes might do more harm than good, since it would add to the knowledge already possessed by the birds' human enemies. I think this surely a mistake ; a near acquaintance with our feathered friends in their homes will surely give to the most careless such an interest in the birds and their daily lives, such a new sense of companionship with them and affection for them, that it can but work for their good. Yet it may be as well to say emphatically at the outset : Make your object the *study of birds* through their nests and eggs. Don't add a new terror to the many that already beset anxious little bird-mothers by disturbing them during the breeding season or taking their eggs for a so-called "collection." If you stop at this you will lose some of the choicest pleasures that fall to the lot of the nature lover.

So far as I know, this side of the birds' life has been comparatively neglected. There are plenty of scientific works on oölogy and nidification, and so on, but hardly anything that deals with the subject from what might be called the "human" side. If this book helps the ordinary unscientific person to get some closer glimpse of the birds in their rôles as heads of a family ; to study their wonderfully adapted nests and beautiful eggs as manifestations of that bird nature which is so charmingly varied and so endlessly interesting—if it does this in any measure at all I shall be more than satisfied.

Introductory

Every one agrees that the study of birds should be fostered and developed. The first thing is to teach people to *see*, and very few of those who have not gone into the matter sympathetically realise how little of the visible world of nature they do see. In particular are there recompenses for the patient observer who devotes himself to the beauties of bird-life. There are but few, especially among boys, who are really capable of doing systematic collecting of eggs, and unless formed with the utmost care and system, a collection is of not the slightest value. On the other hand, every one can be taught to *see*, to study the birds in connection with their nests, eggs, and young.

Birds have so many natural enemies that our first impulse should be to protect them. It is a dark reflection on man that, with all his much-vaunted intelligence, he should do more toward the destruction of birds than all other causes combined. And he certainly is one of their most relentless foes.

If laws were made, for instance, forbidding the sale of bird-skins for millinery purposes, what a boon it would be to our feathered friends! Much has been written and published on the subject by that most excellent institution, the Audubon Society; but what little effect has it produced. Laws have been passed, though rather late in the day, prohibiting the killing of egrets in the South and of many varieties of the smaller birds in special States; but these laws are to a great extent disregarded, and there are no adequate means for their enforcement. The destruction of birds' nests is forbidden; yet there are endless "collections" made every season. How many boys—and men too—are there in every village who take every year large numbers of eggs which serve no purpose! Their only idea is to get "a lot of them," which are gathered together without notes or observation, or even identification. All sparrow-like nests found on the ground are said to belong to the "ground sparrow" or "grass sparrow," or some such ambiguous bird. When the nest is found and the eggs are taken the entire aim of this "collector" seems to be satisfied; the idea of making notes never even enters his head. If asked where some particular egg was taken, he replies vaguely: "I don't remember exactly, but I think it was in such a place, or perhaps some fellow gave it to me."

Thus it is that eggs are destroyed and with them the means of studying the birds during the most interesting period of their



WOOD THRUSH ON NEST

lives ; for where a bird's nest is, there is its home in the strictest sense of the word. It is true that most birds are wanderers ; they go south shortly after the young are fully grown, to return when the frost leaves the ground and the necessary supply of food can be obtained. But during the migration the bird is seldom resident for more than a few weeks in any one place ; he is restless and only awaits the time when he may get back to his nesting place of the previous year. Here, where he sings his love-songs and sets up housekeeping, is surely his real home and habitation.

In reading over the works of well-known ornithologists it is surprising to see how very little has been written about birds during the breeding season. The time occupied in nest-building ; the period of incubation ; the appearance and habits of the young at different ages ; how long they remain in the nest, and so on—these and the many other facts which give each species and each bird family definite individuality, though they are of the utmost interest, have been to a great extent ignored. It is difficult to realise why this is. Of course it requires great patience and plenty of time to get accurate data of this sort ; but there are thousands of enthusiastic nature students, and particularly bird students, nowadays, and the difficulties only make it all the more important that every one who is really interested should endeavour to add all possible information that may be of value. And right here let me say that all original and authentic notes—and only these—are valuable.

Eggs of different birds of the same species, and indeed of the same bird, vary greatly both in colour, markings, and size, yet it is not at all necessary that every one should collect a large series to show such variations. Such collections may be found in museums when needed for comparison. Therefore I should say : Leave the egg where it belongs—in the nest—and visit it frequently (using all due caution against disturbing the owner even in this), making notes of anything of interest you may happen to see. You will be surprised at the number of things you will find that will prove of real interest, and you will surely be glad after your first experiment of this sort that you did not destroy the eggs, and with them your opportunity of gaining such an insight into the domestic life of Mrs. Robin Redbreast or Jenny Wren.

Last summer, while walking through the woods, I found a

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yellow-billed cuckoo's nest containing two eggs, which showed that incubation was far advanced. It was three days before I had another chance to visit the nest. During this interval the young had hatched, and when I saw them they were little naked objects with but the first beginnings of pin feathers showing. Unfortunately, I did not know their exact age (as you can see, notes should be exact down to days and hours), but as I visited them day by day I noticed how the feathers grew. Instead of breaking through the envelopes gradually, as do the feathers of other birds, the little cuckoo's feathers remained sheathed and finely pointed until the day before the birds left the nest. Then in twenty-four hours *every* envelope burst, and the bird was completely feathered, with no trace of the sheathing except at the base of the tail. Had I taken the eggs I should not have been able to note this fact (which I have not been able to find any record of in the books) or to secure the amusing photograph which is reproduced further on.

While I deprecate the taking of eggs as being in most cases entirely unnecessary, I should strongly advise both boys and girls to *look* for nests. It will be a means of developing a love of nature in one of its most attractive forms, and it will stimulate the powers of observation and add to the knowledge of birds in striking degree.

The love of nature in any form is an acquisition well worth striving for. Besides adding enormously to one's interest in a walk, whether on the high road or along the woodland paths, it is a resource which would do a great deal towards banishing that silly phrase, "I wish I had something to do." How often do we hear people say that, even when living in the country where wild life in its thousands of different phases exists all around them, unnoticed by all except the very few who are devoting themselves to some particular study. Unfortunately the power of observation is lacking in most of us who have not been trained to it—we look without seeing. Mr. Burroughs says that "some people seem born with eyes in their heads, and others with buttons or painted marbles, and no amount of science can make the one equal to the other in the art of seeing things." But even those who by ill-fortune are born without keen eyes can by constant practice cultivate the faculty of observing to a surprising degree.

That so little is known about the common birds is a good il-

illustration of this lack of seeing ; even birds as conspicuous as the Baltimore oriole, the cardinal, or the scarlet tanager are as remote as birds of paradise to many people who live in the country. I have heard men and women ask whether these birds, which they had just seen as mounted specimens in some museum, were from South America or some other tropical country. They were much surprised when told how common these and others of equally brilliant plumage are within a few miles of New York City.

How many people who live in the country throughout the summer months, or even country folk themselves, have ever seen the rose-breasted grosbeak, a common and most gayly coloured summer resident ? Or the yellow-breasted chat, or the Maryland yellowthroat, or the indigo-bird ? Even these flashing bits of animated colour are generally unknown, while the less conspicuous birds, if seen at all, are called "sparrows" or "small birds."

Now that the public schools are taking up nature studies, we have good reason to hope that people will learn more about the birds. I think any woman who had seen a mother-thrush on the nest, with her anxious, wild, little eyes looking out in fear of the intruder, could never again wear a stuffed bird as a hat ornament, to be used for a short month or two and then thrown away. For herein lies, perhaps, the chief cause of the partial extermination of our birds, both those that are sombre in colour (for they can be dyed to any desired shade) and those that are by nature of brilliant hues. And who gains by this cruel sacrifice to a heartless fashion save the dealers ?

Keeping native song-birds in captivity is forbidden in some States, the idea being, of course, to protect the birds. But this law undoubtedly does harm as well as good, for many people are thus prevented from becoming intimately attached to the common birds. Who, having once owned a bluebird, could injure one in any way or take its eggs ? And the same applies to almost any other species. Then, again, children would become fond of such birds as they knew, and the cruelty displayed by some boys would be a thing undreamed of. In England, where I understand the song-birds are not protected by law, they are more abundant than anywhere else. What boy would kill an English robin—the robin redbreast—that he hears about in the earliest nursery rhymes and stories ? He has been brought up to know and care for it, and it is therefore to be

Introductory

reckoned as one of his friends. Here the robin, were it not protected by law, would be shot off for food purposes, and I think this comes largely from the fact that the bird, like all the other birds, is not *known* really intimately, and therefore not cared for. Only last summer an instance attracted my attention of the utter barbarism that exists among some boys in this connection. I had noticed a robin's nest containing eggs, and being anxious to obtain certain notes in connection with the young, I visited it again three days later. What I saw made me fairly sick at heart. The parent bird was hanging from a branch—dead. Some boy had fastened a fish-hook baited with a worm to the branch above the nest. The poor bird had swallowed the hook and had hung there to die a slow, lingering death by starvation. The young had also starved to death. Such cruelty seems almost incredible; yet it was done by a boy supposed to be of average intelligence, who was being educated at a good school.

Keeping pet birds is a much discussed question, but after all my experience I have no reason to believe that they are necessarily unhappy in captivity. Some of my birds have been out for a fly many times, but they always seem glad to return, and I am sure they enjoy themselves, even when in their cages. Of course they receive every care and are allowed a good deal of freedom; they have no cares, no trouble to search for food or shelter, and they are nearly always well, and to all appearances happy. The whole question is, of course, one that each person must decide for himself, but unless there is a great deal of certainty in one's mind it is surely better to give the birds the benefit of the doubt—and their freedom. One aspect of the case has been put acutely by a poet who loved birds and sympathised with them very fully. He says of his mocking-bird :

“We have sometimes discussed the question: Is it better on the whole that Bob should have lived in a cage than in the wild wood? There are conflicting opinions about it: but one of us is clear that it is. He argues that although there are many songs which are never heard, as there are many eggs which never hatch, yet the general end of a song is to be heard, as that of an egg is to be hatched. He further argues that Bob's life in his cage has been one long blessing to several people who stood in need of him: whereas in the woods, leaving aside the probability of hawks and bad boys, he would not have been likely to gain



ROSE-BREADED GROSBEEK, ONE YEAR OLD

one appreciative listener for a single half-hour out of each year," and so on.

But I must remind all readers that any one who does keep pets incurs responsibilities along with the pleasure they bring. To deprive any wild animal of its liberty and then neglect it is sheer barbarity.

Having birds in this way affords almost the only means of studying the remarkable individuality possessed by different members of the same species. That each bird has a character peculiar to itself may be doubted by some, but I have never seen two individuals showing the same peculiarities. Two rose-breasted grosbeaks that have been reared together from the same nest, and are now eighteen months old, are different in almost every way. One is intensely jealous and objects to attention being paid to any other bird; the other seems not to know what jealousy means. One wants to sleep at night; the other keeps up a perpetual jumping from perch to perch until all hours. The female (who has most of the bad traits) never lets her mate have any little tid-bit in the way of food; no matter how much she has, she immediately seizes whatever is given to her better-natured companion. So it is with all the other birds; one will be naturally wild and timid; another knows no fear; one, though tame, cannot endure being touched; another, like a bluebird I have, wants to be handled most of the time, and is quite content if allowed to sit quietly (and go to sleep) inside a partly closed hand.

The method of eating adopted by each of the birds is quite individual. The wood thrush makes rapid and regular dips into the food-cup, taking only a small mouthful each time, but repeating the operation until its hunger is satisfied; feeding takes place at rather long intervals. The yellow-breasted chat feeds somewhat after the same manner, but is not so quick or so dainty in its movements, and eats more frequently. The mocking-bird eats often and much, but does not draw his beak away from the cup between each mouthful. The bluebird eats fairly frequently and dips his beak into the food with a sharp jerk, pausing a second or two between each mouthful, and making a snap with his beak every time he takes the food. If given a live grasshopper, he carefully kills it, then *shakes off its legs* and swallows the entire body, afterwards gathering up the legs. The Baltimore oriole

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seems to chew his food, and eats very frequently ; if given anything, either eatable or otherwise, he holds it, hawk-fashion, with his feet (or foot) and quickly picks it to pieces, usually prying it apart with his sharply pointed beak. The rose-breasted grosbeaks eat nearly all the time, even late at night, and I fancy this accounts for their tendency to become very fat when in captivity. So it may be seen that each bird is a study by itself.

Undoubtedly this same individuality exists in birds when in their wild state, perhaps even to a greater degree, but it is more difficult to discover. Some nests show individual peculiarities, but whether the same bird builds the same kind of nest each year is, of course, unknown.

The object of this book, I may repeat, is to stimulate the love of birds ; and though descriptions of nests and eggs are given, as well as instructions for egg-collecting, it must be borne in mind that it is generally neither necessary nor advisable that collections of eggs should be made. Remember that, as Mr. Frank Chapman says, the two points of interest in a bird's egg are " what the egg is in and what is in the egg." Much more knowledge may be gained by observing the birds themselves throughout the breeding season than by taking the eggs. Leave egg-collecting to those who are able, through scientific study, to make use of such collections and devote your leisure hours to the far more interesting process of collecting knowledge which will lend increased interest to your every-day existence and give you new insight into the fascinating world of bird-life.



YOUNG PHOEBES LEAVING THEIR NEST

Chapter II

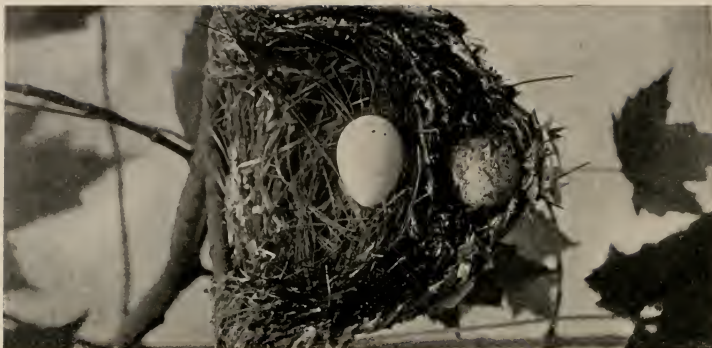
BIRDS' NESTS AND EGGS

A CAREFUL examination of a bird's nest will convince any one that it is a work of art. One cannot help wondering at the ingenuity displayed by its architect. How carefully a bird adapts itself to environment is well illustrated by endless examples: the red-winged blackbirds (whose nests are usually built among reeds, flags, or bushes) make their nests very much deeper when the place selected is subject to strong winds than in more sheltered spots; and then, as a further safeguard, the mouth of the nest contracts so that the eggs will not fall out when the flags are swayed by the wind. These clever birds have even been known to place their eggs in a deserted woodpecker's nest in places where the fish crows were numerous—for the fish crow is worse even than the jay as an egg and fledgling thief. In this way the red-wings managed to elude their persecutors and saved their eggs and young from destruction.

Some birds readily avail themselves of new and favourable conditions. The phœbe formerly built its nest exclusively on rocks, but now that houses and bridges are to be found throughout the country, this bird has to a great extent changed its former custom, and it now builds nests on almost any sort of structure erected by man. This also applies to the barn swallow, while the chimney swift has taken possession of our chimneys, and almost forsaken the hollow tree-trunks, in which, but a few years ago, they built in large colonies.

How rapidly birds are changing their habits is not known, but it is evident from the few examples we have about us that a change is progressing, in some cases very noticeably.

Of course a bird's main idea when depositing its eggs is that they shall be safe from enemies of all kinds and from unfavourable weather conditions. With these objects in view it is interesting to



A SECTION OF THE SAME NEST, SHOWING
THE POSITION OF THE TWO EGGS
The lower one is the Cowbird's



THE SAME NEST WITH THE RIGHTFUL
OWNER'S EGG



RED-EYED VIREO'S NEST IN WHICH A COWBIRD'S
EGG IS HIDDEN BY A FLOOR HAVING
BEEN PLACED OVER IT

six or eight feet deep, excavated in a bank by the birds themselves after as much as two weeks' work. One possible reason for the choice of such a place is the fact that the young, which are fed on fish, regurgitate large pellets of scales and bones and such indigestible matter ; were these dropped beneath a nest built in a tree or on the open ground it would betray the presence of the home to the natural enemies of the bird. Why the cowbird declines the responsibilities of maternity has never been satisfactorily explained. It is certain, however, that there is some good and sufficient reason.

The European cuckoo, like the cowbird, lays her eggs in the nests of other birds, those of the smaller birds being usually chosen. A certain French writer gives as a reason the fact that the cuckoo cannot lay eggs on succeeding days. How long the interval is has not been decided, but if it is of many days' duration that would be an ample reason for the bird's not building a nest for itself, since the eggs might be stolen were they left unprotected until the full complement were laid. The eggs of the yellow-billed cuckoo are said to be deposited at irregular intervals of from two to five days, and are occasionally found in the nests of other birds. Whether in days gone by they placed their eggs entirely in the care of other birds or whether they will do so in the future is of course a problem, but it is quite possible that some such change is taking place. There are birds who, having laid their eggs, cover them up and allow them to hatch by themselves, trusting to the heat generated by the covering chosen. I know of none of our eastern birds that do this, yet some of them make use of vegetable substance that has heating qualities.

The grebes, for instance, use decayed and damp vegetable matter, while many of our small birds place in their nests woolly stuffs and other non-conducting material, probably to protect the highly sensitive eggs from sudden changes of temperature.

The shapes of eggs show in many instances the forethought of nature. Eggs that are laid on bare rocks and exposed places where little or no nests are made, are generally rounded at the larger end and come almost to a point at the other extremity ; this makes it possible for them to be turned by the wind without rolling away ; whereas the ovate or elliptical eggs that are found in well-protected places, such as holes in trees, would soon be blown off by a strong wind in such exposed situations.

Birds' Nests and Eggs

The ways of birds are difficult to understand. Why should some build in colonies, and others singly but in close proximity, and others again miles away from their kind? The passenger pigeon gives the best example of nest colonies, immense numbers breeding in a very limited area. Prof. H. B. Rooney speaks of a nesting area forty miles long and from three to ten miles wide, where, in 1878, a million and a half of the pigeons were killed for food purposes, while if those that were taken alive and the dead nestlings were included, the number would reach the enormous total of a thousand millions. This is thought to be somewhat exaggerated, but shows what an immense number of birds must have been breeding in this limited space. Some of our small birds nest in colonies; among them the red-winged blackbird and some of the swallows afford the most noticeable examples. The boblink and marsh wrens also live in scattered communities during the breeding season. Most of the larger hawks select a desirable copse or fairly large tract of woodland as a common home, and it is seldom that another nest of the same species is found within that area. In Florida, where each cypress swamp is usually clearly defined, it is seldom, except in the large swamps, that one finds in each more than one nest of the Florida red-shouldered hawk—a species very abundant throughout the more southern parts of the State.

Some birds return regularly year after year to the same nesting site, even after their nests have been robbed several times. I have known a crested flycatcher to build in the same hole for three years in succession though each set of eggs was taken. Phœbes return with great regularity to the same bridge, building, or rock, where they make one or two nests each season. Some of the owls also use the same hole for many years, and hawks and crows rebuild their old nests, so that each year the nest becomes larger as layer after layer is added.

Most, if not all, birds are governed in their habits by regular rules—from which, however, they occasionally depart just as human beings depart from the rules which seem most generally applicable.

The Wilson's thrush, whose nest is commonly on or near the ground, has been known to build in a hole in a tree. Bob-whites' nests containing thirty-seven eggs have been reported—though these were, of course, not all laid by one hen. The eggs were



WHITE-EYED VIREO ON NEST

The extreme tameness of these birds renders them good subjects for the camera



YOUNG BALTIMORE ORIOLES AND NEST

said to be arranged in tiers, with the smaller ends pointing towards the centre. It is curious to note that if the female bob-white is killed after the eggs are laid, the male bird takes upon himself the entire duty of incubating. This may not be an invariable rule, but a number of instances have been reported by reliable observers. Robins will sometimes build their nests in buildings or bridges with no vegetation in the immediate vicinity of the nest, and mocking-birds have chosen fence rails and other such queer places for their building sites.

In parts of the old world and in South America will be found birds that build extraordinary nests and have curious habits. The male hornbills have a remarkable custom of incarcerating the female in a hole in a tree during the period of incubation, by sealing up the entrance with mud, leaving a small opening through which she is supplied with food. Should the male be killed it is a question whether or not the female could free herself. This habit is doubtless a method of protection.

The nest of the tailor-bird is a good example of the skill displayed by birds in building and concealing their homes. They sew the edges of a large growing leaf round the nest, so that it is absolutely hidden from view. The bower-birds use queer materials, such as bones, pieces of metal, shells, etc., but perhaps the greatest curiosity supplied by birds is the nest of the esculent swift, known commonly as the edible bird's-nest, so much appreciated by the Chinese as a table luxury.

These are but a few examples of the endless variety to be found in bird architecture. It is a subject a full treatment of which would fill many volumes, and it is a study offering unusual attractions to all who want to do "original work" in nature subjects.

Chapter III

EGG-COLLECTING AND ITS OBJECT

A COLLECTION of eggs, to be of any real value, must be formed according to some prearranged method and for some definite purpose—not haphazard, with merely the idea of accumulating a great quantity of eggs. The amateur collector is generally without any notes, such as where found or the number in nest ; in fact, he is apt to have nothing but somewhat uncertain names of eggs obtained by exchange or purchased from some dealer—secured in any way so that the *number* be great. What, may I ask, has ever been gained from such a collection? And after the craze has lasted a year or two, the whole thing is put aside and forgotten, to be destroyed by neglect.

The object of a collection is to show not only the individual egg, but how conditions affect eggs of a given species in different parts of the country. Thus it is of the utmost importance that it should be known where the eggs were procured ; the date should be given, so that it may be possible to find out whether in different places the nesting season varies, and, if so, how great is the variation. The catalogue should contain exact information on these points, together with notes relating to the nest ; whether placed on the ground, or in bushes or trees, etc.

All notes should be made on the spot and *not* from memory. A small pocketbook should be carried for that purpose, and these notes ought finally to be arranged in a larger book, either in chronological order or under the name of each bird ; the latter is probably the better way as it is easier to refer to and needs no index. Be careful that all information is accurate. Anything taken from hearsay should be marked as such. In most cases it is better to have nothing but notes made from personal observation.

As I have said before, birds, though governed by certain rules, do occasionally change or modify their habits ; so that notes on

the habits of a given species should specify whether or not they were taken from an individual bird or from numerous individuals of that species.

Among the numerous points to be noticed may be mentioned the following : When birds are seen pairing ; when nests are commenced ; how long building ; whether built by one or both birds ; materials used in the construction, from where gathered ; where the nest is placed ; if on the ground, whether on a sod or tussock, in a tuft of grass or in a depression, in damp or dry places, in open country, in woods or in thickets ; if in a bush, what kind of bush ; the height from the ground ; whether in a crotch, saddled on a branch or pendent ; the size of nests ; when the eggs are laid ; interval between laying ; period of incubation ; whether both birds or only the female takes part in that duty ; appearance of young when hatched, and at different ages ; at what age they leave the nest ; which of the parent birds provides the food, or whether both do ; of what does the food consist ; what becomes of the young when they leave the nest ; and so on with the numberless points which go to differentiate one bird from another.

The period of incubation varies of course with different birds ; for instance, with the white-eyed vireo it is about seven days ; the indigo-bird takes ten days, the wood thrush twelve, and the ruffed grouse eighteen. The time should be taken from the day the bird actually commences sitting and not necessarily from the day on which the last egg is laid. Eggs are usually laid during the morning, between the hours of nine and eleven, but the bird does not always begin to sit the same day that the last egg is laid. Some birds commence sitting before laying the full complement of eggs ; in these cases the young are hatched at intervals.

The age at which young birds leave their nests is not dependent on the *size* of the bird. The gallinaceous species, such as the grouse, quail, turkey, etc., being well developed when hatched, desert the nest within a few hours after leaving the egg ; the young wood thrushes keep to the nest for ten days, by which time they are pretty well feathered, the tail being rather more than one inch in length ; the white-eyed vireo leaves when seven days old ; while the owls stay in their nest for several weeks.

A few birds build their nests indiscriminately on the ground or in bushes. In some localities certain birds almost invariably choose the ground, while in some other place, where conditions

Egg-Collecting and Its Object

do not appear to be in any way different, the same bird selects bushes. Notes of this kind are of interest and should be worth the trouble of systematic investigation.

Certain birds, such as the prairie horned lark, build several nests during the season, the first nest being constructed in a much more substantial manner than the second or third. This is probably owing to the change in the weather conditions. Early in the season the ground is damp from the frequent rains, while later on the ground becomes dryer and there is more protection from the weeds and grasses which surround the nest. Such observations as these soon lead one to realise that much more interesting information may be gathered by studying carefully, systematically, and intelligently the habits of the birds, together with the peculiarities of their nests and eggs, than by making collections of the eggs themselves.

In order to get a collection of eggs it is by no means always necessary to destroy the nest, or even to cause the birds to abandon it; that is, of course, unless you wish to have complete *sets* of eggs, and this may fairly be said seldom to be essential for the amateur or general student.

If you are fortunate enough to find a nest before the eggs are laid, watch for the first one. This should not be touched, but the second may be taken and sometimes a third and fourth; then leave the nest alone, and in most cases the bird will lay the complete complement.

Care should be taken not to disturb the nest or frighten the birds. In this way I have seen as many as six eggs taken from a single nest, and four more were afterwards laid and hatched.

Some birds are exceedingly shy and will desert their nests upon small provocation, especially if they are disturbed while building. Others, however, such as the golden-winged woodpecker and crested flycatcher, are difficult to drive away.

When eggs vary in size, shape, or colour, as those of most of the sparrows, the bobolink, and many others, it is an advantage to procure a fairly large number or series of sets, showing as many of the differences as possible; this adds greatly to the interest of a collection, particularly when the difference correlates with locality and varied conditions. A well-arranged collection of bird's nests, even without the eggs, is both picturesque and valuable. They should as far as possible be left as the bird had placed them;



RUFFED GROUSE ON NEST



YOUNG REDSTARTS JAY OF LEAVING NEST

if built in a bush or on a branch, enough of the support ought to remain with the nest to show by what method it was secured. With ground nests that are placed in tufts of grass, the tuft should be removed with the nest ; in the case of woodcock, ruffed grouse, or any bird that forms its nest roughly of leaves, a wire hoop covered loosely with muslin or wire gauze will answer the purpose ; this can be slipped under the nest so that it need not be disturbed.

When the eggs are laid in a hole in a tree it is not always feasible to cut down the tree or even the branch. Sometimes the branch can be cut just below the nest (taking care not to cut through the lower part of the nest itself), and then an opening can be made in order to show the eggs and whatever there may be in the way of a nest, leaving the original hole through which the bird had entered. If the nest is taken before the eggs are laid, or even when the bird has commenced sitting, during the early part of the season, not much harm is done, as the bird immediately begins building again. As the season advances it is better that the nest should be left until after the departure of the young, although then it is not in such good condition as before being used—particularly if it happens to be the nest of the cuckoo, which leaves its nest in a most filthy condition.

The egg-collector's outfit comprises a few drills of various sizes, a blow-pipe of either glass or metal (for home work those made of glass are preferable, as they are easily cleaned, but for the field metal is, of course, more serviceable), forceps of various sizes, scissors, and an embryo-hook.

When the eggs are fresh they are easily blown, and the hole should be very small ; the blow-pipe may be used by holding it *near* the hole and forcing air into the egg, thus emptying it of the contents. By this method the hole need not be large if the egg is fresh ; another way is to insert the end of the blow-pipe, when the contents may be quickly blown out.

The usual plan adopted by boys is to make two holes, one very small and the other varying in size according to the condition of the egg ; this has the disadvantage of making two holes, and when the egg isn't quite fresh, it takes a boy's stomach to stand it.

When the embryo has formed it is generally necessary to use the embryo-hook and to make a large hole. Never try to take

Egg-Collecting and Its Object

out the contents of an egg through a hole of insufficient size. In large eggs, the scissors or forceps come into use. If the embryo is very large soak the egg in water for a day or so.

It is of the utmost importance that the egg should be *thoroughly* washed, both inside and out, with either cold or tepid water, which may contain some weak antiseptic solution, but on no account must very hot water be used. The water should be taken up with the blow-pipe and discharged into the egg, repeating this operation several times. Finally dry *thoroughly*, letting it drain, hole downwards, on cornmeal, sawdust, blotting-paper, or sand if nothing else is obtainable.

In the case of white eggs their beauty is much enhanced by inserting a little pink cotton-wool; this makes the specimen appear more as though the yolk were inside.

For field work have a few small metal boxes (such as those used for holding tobacco) filled with cotton wadding cut into squares, so that each egg may be wrapped up separately. Put on each a number, written lightly in pencil, referring to your field notes on that egg; this saves a great deal of confusion, especially when many eggs are found in a day. The A. O. U.* check list number should be written on every egg to prevent the occurrence of any possible mistake.

If the collection consists of nests with the eggs a cabinet with glass top will be needed, so that the nests may be seen, while at the same time the air and dust may be excluded as much as possible; camphor or naphthaline must be kept in the cabinet. Strong sunlight ought not to be allowed to fall on the eggs, for it causes them to fade, so it is advisable to keep the cabinet covered with some opaque material. Each nest should be marked either with a number referring to the catalogue, or with that and the name of the nest. If the collection contains only eggs, they should be kept in a cabinet with well-made drawers, each drawer divided off with partitions large enough to contain a complete set. The eggs may be laid on cotton, sawdust, sand, or finely grated cork, the last being perhaps the most suitable.

* American Ornithologists' Union.



A FAMILY OF YOUNG CHIPPING SPARROWS WHICH HAVE JUST LEFT THEIR NEST



FAMILY OF OVEN-BIRDS ON THE DAY THEY LEFT THEIR NEST

Chapter IV

PHOTOGRAPHING NESTS AND YOUNG BIRDS

IN making notes on young birds the camera will be found to be most useful, as it shows exactly the growth of feathers and other points of interest ; but here again it is necessary to be particular as to the age of the bird. Guesswork will not do, as a single day often makes a great difference in the appearance of young birds. It is extraordinary with what rapidity they grow.

In order to secure good photographs great patience is necessary, especially so in the case of young robins and others of the thrush family, for they are very shy even before they can fly.

Any good long-focus camera with the regular lens will do, but of course a very rapid lens will give better results. The lens that has given me the greatest satisfaction, both on account of its rapidity and depth of focus, is the Goerz, series III.

My method of photographing the bird before it can stand is to place it on a piece of smooth white or light-gray paper laid on a flat surface and raised at the farther side so as to form a perfectly smooth blank background with no lines or creases ; this may be placed in the sunlight or shadow, according to the speed of the lens.

A very quick shutter is essential, owing to the rapid breathing of the bird when young and to its restlessness when able to perch (in a life-sized photograph the slightest movement shows unless the shutter works with unusual rapidity). Once the youngsters can fly, it is necessary to make some sort of enclosure ; this may be arranged temporarily by hanging some white cheesecloth in the sunlight, with a piece of mosquito netting at the top so as to allow sufficient light inside. Sunlight may be used to advantage in some instances to give striking effects of light and shade. (When sunlight is used, a developer rather weak in pyro will be found to give the best results.)

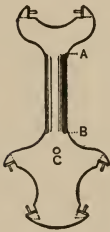
Photographing Nests and Young Birds

The dead branch of a tree makes a natural and effective perch for the bird to stand on ; it should be carefully selected, with no twigs that would be much out of focus. Then focus your camera on some particular point ; mark this lightly with a penknife and take the photograph when the bird stands on the marked place. When several birds are to be photographed together, they must be arranged so that each one shows in a different position from his companions. You may say that this sounds easy, but is most difficult to accomplish ; here is the time for the much-needed patience already mentioned.

Young birds may be photographed while in the nest, but this is not often satisfactory, since only the heads show. Especially in the case of the smaller birds is it difficult to get all parts in focus. Moreover, the location of the nest is generally in the shade, so that to get good results a time exposure is desirable. But the birds invariably move ; so, on the whole, I think the best results are to be obtained without anything in the way of accessories. This has been my experience, though others who have been more fortunate in getting good effects with the young in the nests think that is the better method.

When nests containing eggs are to be photographed it is better to choose a cloudy day, otherwise a screen should be used in order to soften the light, or the markings on the eggs will scarcely show in the picture, and the detail of the nest will often be lost in the strong light and shade. The screen may be made of cheesecloth or fine muslin, and a light, portable frame for it may be constructed of thin bamboo, arranged so as to fold and be carried with the tripod.

If the nest is photographed in bright sunlight, a piece of white paper or cloth may be used with advantage as a reflector in order to soften the shadows. When photographing ground nests the ordinary tripod is troublesome and difficult to tilt to the necessary angle. After trying various schemes, I am now using a device which works satisfactorily, its disadvantage being its weight. Three-ply wood should be used in making this, and the metal parts may be taken from an ordinary tripod top. The bar AB is cylindrical, $\frac{7}{8}$ inch in diameter ; to this is clamped a ball-and-socket device, allowing the camera to tilt forward without moving the legs of





YOUNG RED-EYED VIREO THE DAY AFTER LEAVING ITS NEST



YOUNG YELLOW-BILLED CUCKOOS, TWENTY-FOUR HOURS BEFORE LEAVING NEST
Showing how late the feathers remain sheathed

the tripod. A hole may be made (C) so that the regular tripod screw can be used when taking photographs of other objects.

Occasionally it is desirable to take a photograph of the old bird on the nest, but this is by no means easy. The camera should be arranged and focussed on the nest while the parent bird is away, taking care to remove the leaves or twigs that would be out of focus in the immediate foreground. The instrument must be concealed to some extent by leaves and twigs, and the operator will have to take pains to see that nothing interferes with the working of the shutter. A long tube must be substituted for the short one, and either a large bulb or, if convenient, a bicycle hand-pump will answer the purpose admirably. In this way I have made time exposures with the camera fastened to the higher branches of a tree, where the shade made it necessary to give a five-second exposure and I found that the branch shook if I stood on it. Once a tube nearly forty feet long was used, and with the aid of the bicycle pump I got an excellent picture.

A very useful accessory to the bird-nest photographer's outfit is a pair of pruning clippers for removing small twigs and leaves.

The surroundings of the nest should not be disturbed more than one can help, since this gives an artificial appearance to the picture and is apt to frighten away the owners.

Chapter V

HINTS ON THE REARING AND KEEPING OF BIRDS

MOST of the hard-billed birds and many of the soft-billed may be reared with ease, but the latter are rather more delicate. The hard-billed birds, so called, include the finches, sparrows, and any birds that break seed. The soft-billed are those that eat chiefly insects and fruit.

People often complain that their birds die from no apparent cause : my experience has been quite different, for though I have reared a good many birds of various kinds, I have never had but one death in my bird family, and that was a young redstart which had fallen from the top of a tree, where its nest was situated. I attribute my good fortune to the fact that my young birds get their meals with regularity *and with each meal a drink of water.*

I believe it is the lack of water that is responsible for so many deaths, especially when the birds are very young.

The best time to take fledglings is about a day or so before they are ready to leave the nest ; they are then fairly strong and have something to boast of in the way of looks.

When the nest happens to be a long way from home, it is necessary to feed the birds every hour *en route.* With any of the frugivorous varieties a blackcap or any thoroughly ripe berry may be given, but it should first be masticated. For regular diet during the first *two weeks* or so feed with mashed boiled potato thoroughly mixed with the yolk of eggs hard boiled ; this must not be used if in the least sour, and to guard against this it should be made fresh every day. A small smooth stick of hard, non-absorbent wood, such as clay-modellers employ, may be used for a spoon ; after each meal it should be dipped into water and a few drops put into the bird's mouth ; every hour this performance takes place, from six in the morning till nearly dark. You see



FAMILY OF BLUE-WINGED WARBLERS, SHOWING THE YOUNG ON THE DAY OF LEAVING THEIR NEST

bird children are almost as much trouble as the human variety, and no one should keep them who is not willing to take infinite pains.

The next article of diet should be ants' eggs (which may be procured from any bird fancier), mixed with the potato and eggs—a little at first, and gradually increasing the amount ; finally, with hard-billed birds, seed may be given as soon as the bill is hard enough, though at first it is sometimes necessary to crack the hemp-seed before giving it.

For soft-billed birds I know of nothing better than what is known as "mocking-bird food" ; this may be bought either in the dry or the moist form. The latter kind can be made from the following recipe :

- 6 parts corn-meal.
- 6 parts pea-meal.
- 6 parts German moss-meal.

Add a little melted lard and molasses, fry well for half an hour, keeping it well stirred. If put in a covered jar it will keep for a long time.

This is rather rich, and if found to disagree with the bird the dry form of food should be substituted, mixing it fresh every day with grated carrot and water sufficient to moisten it. Birds must be watched carefully to see that their food agrees with them ; except when moulting they should be lively and have good appetites ; if such is not the case, it is probable that the food does not suit them, and a change should be made immediately. Occasionally birds have fits ; that is to say, they drop down without any warning, and either lie perfectly still, with feet upturned as though dead, or they revolve rapidly while on the ground. This happened to one of my favourite pet birds, and in despair I consulted a bird dealer, who told me to cut the nail and thus draw blood. I did so, but without any result. Several times on alternate days the poor bird had these fits, and every time we believed him to be dying. Finally, as a last resource, we changed his diet from the moist to the dry food with plenty of carrot, and from that day he has been perfectly well, very much to our delight.

It is advisable to give birds as much *ripe* fruit and green stuff as they wish. Young lettuce they are particularly fond of, but they will eat almost any young leaves.

Hints on the Rearing and Keeping of Birds

Frequent baths will do much toward keeping birds clean and healthy ; every day or two they should be given, but it will be noticed that during the period of moulting the bath will be but little used.

Never put young birds, no matter how young they may be, in any artificial nest that differs essentially in texture from their own ; for example, a young crow or catbird should have sticks and not soft rags or cotton, but a young phœbe may get along very well in a cotton nest. The reason for this is that some birds require greater development of the leg muscles than others, and when quite young they keep their feet in constant motion, grasping the small twigs that form the inside of the nest ; in this way they develop and strengthen the necessary muscles of the leg. When unnatural conditions have prevented this exercise, I have known the birds to become partly paralysed and die, and I have no doubt that the absence of suitable rough material was the direct cause. Nature is very wise in regard to her children, and you will do well to follow her example whenever you are at a loss.

Should young birds become droopy, a little diluted whiskey or paregoric put in their mouths with a medicine-dropper will generally restore them to normal condition.

Cage-fighting invariably takes place sooner or later ; as a rule it only lasts a day or so, but if persisted in cover the cage with fine wire mosquito netting, so that the bird may not be able to get his beak through.

At night the cage should always be covered, otherwise the birds wake at amazingly early hours ; this applies more particularly to fledglings, as their waking means they *must* be fed, and it is not always pleasant to have to get up at daylight to minister to their wants.



MALE ROSE-BREADED GROSBEAK, ONE YEAR OLD, TAKING A SUN-BATH

Chapter VI

NOTES

THE illustrations of nests in this book are from photographs, which, with few exceptions, were taken without disturbing either the nest or its surroundings. In a few instances, such as the nests of the bluebird, downy woodpecker, and crested flycatcher, the branch was cut down, and an opening made in order to show the eggs. The photographs of both young and old birds are from life.

Under the headings of breeding range the reference is only to the United States, and only the land birds that breed in the Eastern States are described. The description of the plumage of each bird is not meant to be very complete; the principal characteristics are given so that the bird may be recognised. No attempt has been made to give the notes or songs of the birds.

The number before the name of each bird is the number adopted by the American Ornithologists' Union check-list, and will save looking through the index when referring to other works on birds.

The book is arranged so that all the birds that build open nests on the open ground are in one chapter, those that build open nests in woods or thickets are in another chapter, and so on. In cases where a bird builds usually in a bush but sometimes in the open fields the description is given under the heading of nests in bushes, etc., and the name of the bird, together with the colour of the eggs, is referred to in its numerical order in the chapter of nests in open fields, etc. Thus, for example, if an arched nest is found in a field or swamp, it will be necessary to look in Chapter III. But it may be the nest of a seaside sparrow, which is rarely arched; in that case you will be referred to Chapter I for the description. All measurements of birds and eggs are given in inches and hundredths.

The sign ♂ signifies male, and ♀ female.

Notes

I must acknowledge my indebtedness to many works, in particular to the following : Frank M. Chapman's "Handbook of Birds," Davie's "Nests and Eggs of North American Birds," H. D. Minot's "The Land Birds and Game Birds of New England," Charles Bendire's "Life Histories of North American Birds, with Special Reference to their Breeding Habits and Eggs," and the A. O. U. check-list of North American birds.

APPROXIMATE DATES WHEN BIRDS BEGIN TO NEST

THESE DATES APPLY TO THE VICINITY OF NEW YORK (WITHIN ONE
HUNDRED MILES OF THE CITY) EXCEPT WHEN THE BIRD'S RANGE
IS NOT WITHIN THAT AREA, OR WHEN OTHERWISE SPECIFIED

January : First week.	352	Bald Eagle (Fla.)
February : Fourth week.	349	Golden Eagle (Cal.)
" " "	375	Great Horned Owl
" " "	484	Canada Jay (Me.)
" " "	521	American Crossbill
March : First week.	328	White-tailed Kite (S. C.)
" " "	331	Marsh Hawk
" " "	362	Audubon's Caracara
" Second "	368	Barred Owl
" Third "	367	Short-eared Owl (Ohio)
" " "	474 ^b	Prairie Horned Lark (Iowa)
" Fourth "	372	Sawwhet Owl
" " "	373	Screech Owl
" " "	392	Ivory-billed Woodpecker (?)
	326	Black Vulture
	330	Swallow-tailed Kite
	339 ^a	Florida Red-shouldered Hawk (Fla.)
Some time during March.	356	Duck Hawk (Southern States)
	395	Red Cockaded Woodpecker (?)
	479	Florida Jay (Fla.)
	729	Brown-headed Nuthatch
April : First week.	316	Mourning Dove
" " "	332	Sharped-shinned Hawk
" " "	337	Red-tailed Hawk
" " "	343	Broad-winged Hawk

Approximate Dates When Birds Begin to Nest

April : First week.	366	American Long-eared Owl
“ “ “	488	American Crow
“ “ “	766	Bluebird
“ Second “	360	American Sparrow Hawk
“ “ “	456	Phœbe
“ “ “	727	White-breasted Nuthatch
“ “ “	761	American Robin
“ Third “	300	Ruffed Grouse
“ “ “	305	Prairie Hen (Kansas)
“ “ “	333	Cooper's Hawk
“ “ “	365	American Barn Owl
“ “ “	511	Purple Grackle
“ “ “	547	Henslow's Sparrow (Ill.)
“ “ “	593	Cardinal
“ Fourth “	329	Mississippi Kite
“ “ “	364	American Osprey ; Fish Hawk
“ “ “	394	Downy Woodpecker
“ “ “	663	Yellow-throated Warbler
Some time during April.	289 ^a	Florida Bob-white (Fla.)
	320	Ground Dove
	325	Turkey Vulture
	327	Swallow-tailed Kite
	339	Red-shouldered Hawk
	378 ^a	Florida Burrowing Owl (Fla.)
	416	Chuck-will's-widow (Fla.)
	513	Boat-tailed Grackle (Fla.)
	575 ^a	Bachman's Sparrow
	731	Tufted Titmouse
May : First week.	390	Belted Kingfisher
“ “ “	406	Red-headed Woodpecker
“ “ “	409	Red-bellied Woodpecker
“ “ “	412	Golden-winged Woodpecker ; Flicker.
“ “ “	477	Blue Jay
“ “ “	501	Meadow-lark.
“ “ “	533	Pine Finch ; Siskin (New Eng- land)
“ “ “	560	Chipping Sparrow
“ “ “	563	Field Sparrow
“ “ “	581	Song Sparrow

Approximate Dates When Birds Begin to Nest

May : First week.	613	Barn Swallow
“ “ “	617	Rough-winged Swallow
“ “ “	676	Louisiana Water-thrush
“ “ “	703	Mockingbird (Va.)
“ “ “	718	Carolina Wren
“ Second “	393	Hairy Woodpecker
“ “ “	467	Least Flycatcher
“ “ “	494	Bobolink
“ “ “	498	Red-winged Blackbird
“ “ “	542 ^a	Savanna Sparrow
“ “ “	546	Yellow-winged or Grasshopper Sparrow
“ “ “	584	Swamp Sparrow
“ “ “	587	Chewink ; Towhee
“ “ “	601	Painted Bunting
“ “ “	610	Summer Tanager
“ “ “	611	Purple Martin
“ “ “	614	Tree Swallow
“ “ “	616	Bank Swallow
“ “ “	638	Swainson's Warbler
“ “ “	652	Yellow Warbler
“ “ “	654	Black-throated Blue Warbler
“ “ “	658	Cerulean Warbler (?)
“ “ “	674	Oven-bird
“ “ “	675	Water Thrush
“ “ “	683	Yellow-breasted Chat
“ “ “	704	Catbird
“ “ “	705	Brown Thrasher
“ “ “	721	House Wren
“ “ “	726	Brown Creeper
“ “ “	735	Chickadee
“ “ “	755	Wood Thrush
“ Third “	289	Bob-white
“ “ “	388	Black-billed Cuckoo
“ “ “	420	Nighthawk (New England)
“ “ “	423	Chimney Swift
“ “ “	452	Crested Flycatcher
“ “ “	461	Wood Pewee
“ “ “	490	Fish Crow
“ “ “	506	Orchard Oriole

Approximate Dates When Birds Begin to Nest

May : Third week.	507	Baltimore Oriole
“ “ “	517	Purple Finch
“ “ “	540	Vesper Sparrow
“ “ “	549	Sharp-tailed Sparrow
“ “ “	550	Seaside Sparrow
“ “ “	595	Rose-breasted Grosbeak
“ “ “	612	Cliff Swallow
“ “ “	624	Red-eyed Vireo
“ “ “	627	Warbling Vireo
“ “ “	631	White-eyed Vireo
“ “ “	636	Black-and-white Warbler
“ “ “	639	Bachman's Warbler
“ “ “	659	Chestnut-sided Warbler
“ “ “	681	Maryland Yellow-throat
“ “ “	687	American Redstart
“ “ “	722	Winter Wren
“ “ “	724	Short-billed Marsh Wren
“ “ “	725	Long-billed Marsh Wren
“ “ “	756	Wilson's Thrush
“ Fourth “	428	Ruby-throated Hummingbird
“ “ “	444	Kingbird
“ “ “	459	Olive-sided Flycatcher
“ “ “	598	Indigo Bunting.
“ “ “	608	Scarlet Tanager
“ “ “	641	Blue-winged Warbler
“ “ “	648	Parula
“ “ “	655	Myrtle Warbler
“ “ “	662	Blackburnian Warbler
“ “ “	677	Kentucky Warbler
“ “ “	684	Hooded Warbler
“ “ “	759 ^b	Hermit Thrush
	298	Canada Grouse
	445	Gray Kingbird
	567 ^e	Carolina Junco
Some time during May.	575	Pine-woods Sparrow
	597	Blue Grosbeak
	604	Dickcissel
	622	Loggerhead Shrike
	637	Prothonotary Warbler
	751	Blue-gray Gnatcatcher

Approximate Dates When Birds Begin to Nest

June : First week.	387	Yellow-billed Cuckoo
“ “ “	400	Arctic Three - toed Wood- pecker (?)
“ “ “	417	Whip-poor-will
“ “ “	465	Acadian Flycatcher
“ “ “	558	White-throated Sparrow (New England)
“ “ “	619	Cedarbird
“ “ “	645	Nashville Warbler
“ “ “	657	Magnolia Warbler
“ “ “	686	Canadian Warbler
“ Second “	758 ^a	Olive-backed Thrush
“ Third “	529	American Goldfinch
“ Fourth “	661	Blackpoll Warbler
Some time during June.	{	552 Lark Sparrow
		567 Junco ; Snowbird
		583 Lincoln's Sparrow (Col.)
		667 Black-throated Green Warbler
		728 Red-breasted Nuthatch

PART II

Chapter I

OPEN NESTS ON THE GROUND, IN OPEN FIELDS, MARSHES, AND GENERALLY OPEN COUNTRY

289. Bob-white; Quail: *Colinus virginianus* (Linn.)

Adult ♂—Plumage: Upper parts reddish brown, with more or less complete black bars; rump warm rich gray, slightly mottled and streaked with nearly black marks; tail very gray; head black in front of crown; black band across breast; throat and superciliary line white, belly whitish. Length—10.00.

Adult ♀—Duller, black band on breast indistinct.

Breeding Range—Throughout the Eastern States, from Maine to the Gulf of Mexico.

Nest on the ground in open fields, grain fields, scrubby places, and frequently along a roadside, near a stone wall or fence. Usually the nest is open, but it is sometimes roughly arched; it is loosely made of grasses, leaves, weeds, and straw. The eggs are white, more or less stained with light brown, varying in number from 10 to 18, though sometimes as many as 25 are laid (Davie). Size—1.20 × .95.

The Quail, Bob-white, or Partridge is so well known that but little need here be said of it. Except during the breeding season, the birds are always to be found in bevvies, or they might be called families, which, when scattered by the sportsman, reunite and continue living in or about the same locality. The mating season begins very early in May, and eggs are to be found from the third week in May until late in the summer, and rarely

Open Nests on the Ground

even in early fall, two or three broods being reared by a single pair. Incubation occupies 24 days, both birds assisting. Minot, in his book, "The Land Birds and Game Birds of New England," says, "It is not uncommon to find a covey of young quail hardly able to fly even in November."

The nest is fairly easy to find, especially when the parent bird is not sitting, as the white eggs are very conspicuous; but when the old bird is on the nest her protective colouring serves its purpose and makes her difficult to see. A likely place for the nest is on a farm, in the dry, grassy fields, or along the farm roads where there is a rank growth of weeds.

289a. Florida Bob-white: *C. v. floridanus* (Coues)

This is a sub-species of the more northern quail, being smaller and darker in colour. Length—8.50. The breeding habits are described as identical, except that "they begin to pair early in March."

305. Prairie Hen: *Tympanuchus americanus* (Reich.)

Adult ♂—"Upper parts barred with rufous and black, and spotted with rufous; sides of the neck with tufts generally composed of ten or more narrow, stiffened black feathers marked with buffy and rufous, their ends rounded, the skin beneath these tufts bare; tail rounded, fuscous, the inner feathers somewhat mottled with ochraceous-buff, tip white, throat buffy, breast and belly white, evenly barred with black.

Adult ♀—"Similar, but the neck tufts much smaller and the tail barred with ochraceous or rufous. Length—18.00." (Chapman.)

Breeding Range—The prairies of the Mississippi Valley, east to Kentucky and western Ohio, and north to southern Manitoba.

The nest, which is placed in a slight hollow in the ground, is made of grasses and feathers; it is usually found in the prairie grass, "and at the foot of bushes on the barren ground." 8 to 14 eggs are laid; they are grayish buff, sometimes speckled with brown. Size—1.70 × 1.25.

The Prairie Hen is said to be now much less common throughout its eastern range than it was formerly, though it is



BOB-WHITE'S NEST FULL OF EGGS.

still the common game bird of the Central States. The habits during the mating season have been well described by Colonel Goss. "They select a smooth open courtship ground (usually called a scratching ground), where the males assemble at the early dawn to vie with each other in courage and pompous display, uttering at the same time their love call, a loud booming noise; as soon as this is heard by the hen birds desirous of mating, they quietly put in an appearance, squat upon the ground, apparently indifferent observers, until claimed by victorious rivals."

They breed towards the end of April in Kansas and Nebraska. Incubation occupies from three to four weeks.

325. Turkey Vulture or Buzzard: *Cathartes aura* (Linn.)

Eggs creamy white with brownish or reddish blotches and purplish spots.

See Page 57, Chapter II.

326. Black Vulture: *Catharista atrata* (Bartr.)

Eggs bluish white with dark brown blotches.

See Page 58, Chapter II.

331. Marsh Harrier or Marsh Hawk: *Circus hudsonius* (Linn.)

Adult ♂—Upper parts light bluish gray; rump white; tail barred black or brownish; breast light gray at upper part shading into white; belly white barred warm brown.

Adult ♀—Upper parts dark brownish; wing coverts edged with light rusty brown; under parts dark buff streaked with brown.

Immature birds resemble the adult ♀ without the streaks on the belly. ♂ Length—19.00.

Breeding Range—The entire United States.

The nest is placed on the ground, and is "from three to seven inches high and a foot or more in diameter;" it is formed of grass, twigs, and sometimes moss. The eggs are white or bluish white, occasionally marked with pale brown spots. Size—1.80 × 1.45.

Open Nests on the Ground

The Marsh Harrier, or Blue Hawk as it is sometimes called, is easily recognisable by its white rump, which during flight is very conspicuous. They may be seen in almost any marshy or low scrub land, flying within a few feet of the ground or hovering in mid-air watching for their prey. During the mating season the male bird performs the most remarkable evolutions in mid-air, with the evident intention of winning the admiration of his would-be mate. They "frequently begin to incubate with the first egg and the young are hatched at intervals." The nesting season begins in Massachusetts early in May. Davie says that fresh eggs may be found from May 1st to June 15th or 20th, according to locality. The nests are placed in open marshes or low lands.

364. American Osprey or Fish Hawk: *Pandion haliaëtus carolinensis* (Gmel.)

Eggs very variable in colour. At times white or creamy white, either unmarked, oftener very heavily blotched with browns and chocolate.

See Page 129, Chapter VIII.

367. Short-eared Owl: *Asio accipitrinus* (Pall.)

Adult—Upper parts except tail brownish, the feathers edged with buff; the tail has bands of deep buff and dark brown; breast light to dark buff with streaks of dark brown, heavily marked on breast and more finely on belly; the ear-tufts are very short and close together. Length—15.50.

Breeding Range—Throughout the United States.

The nest is made of soft grass, sticks, and a few feathers from the parent bird, and is placed on the ground in a depression, beneath a log or in a burrow (Davie). 4 to 7 white eggs are laid. Size—1.55 × 1.25.

The Short-eared or Marsh Owl, unlike most other members of its family, lives away from the woods and may generally be found in large swamps or marshes. Formerly it was known to breed in Massachusetts, but Brewster says, "I know of no authentic record of its breeding in any part of New England

within the past ten years." In Ohio the nesting season begins about the end of March.

**420. Night-hawk; Bull-bat: *Chordeiles virginianus*
(Gmel.)**

Adult ♂—Upper parts dark blackish brown mottled with buff; wings dark brown with conspicuous white patch; breast black, feathers tipped with white or buff; throat white; belly grayish white, barred with black; tail dark brownish, barred with buff, a white band near the end of all but the two middle feathers.

Adult ♀—Nearly the same, the throat being buff instead of white and no white on tail. Length—10.00.

Breeding Range—Throughout the Eastern States.

There is no nest, the eggs, two in number, being laid on the bare ground in a field, on rocks, or even on the flat roof of a building either in the country or in the big cities. The eggs are olive-buff, light gray, or greenish, with numerous irregular blotches and specks or thickly marked with evenly distributed spots of darker gray, olive, and purplish. Size—1.20 × .86. See Fig. 9, Plate B.

These birds, though called Night-hawks, do a great deal of flying during the daytime, especially towards the end of summer, when they may be seen at almost any time of day flying about over the open country. They are sometimes mistaken for the whip-poor-will, though the white patch on the wing and the white throat should serve to identify them. Their flight is also very different, and generally, though by no means always, they fly higher than the whip-poor-will. Late in the afternoon they may be seen flying high above the city, looking almost like large bats.

The eggs are exceedingly difficult to find, as their colouring so closely matches the ground; even when the bird is startled from the eggs and tries, as many birds do, to divert attention from the eggs to herself, by a pretended broken wing or leg, it is often only after a long and careful search that the eggs are discovered.

The nesting season in New England begins about the end of May.

420b. Florida Night-hawk: *C. v. chapmani* (Coues)

This bird differs from the preceding in that it is smaller, being little more than $8\frac{1}{2}$ inches in length instead of 10 inches, and the lighter markings on the upper parts are more numerous.

474b. Prairie Horned Lark: *Otocoris alpestris pratensis* Hensh.

Adult ♂ —Forehead and line over eye whitish; crown black with tufts on either side; from the eye to the bill, and sides of throat, black; throat white or very pale yellow; back salmon brown; lower parts white or whitish; breast has a crescent-shaped black patch.

Adult ♀ —Differing but little from the ♂, the markings being less defined. Length—7.25.

Breeding Range—Upper Mississippi Valley, to eastern New York and western Massachusetts.

The nest, which is placed on the ground in a slight depression, is made of "dry grasses and corn leaves, lined with a few feathers and horse hairs." 3 to 4 eggs are laid. They are very pale bluish green, or pale olive thickly and evenly speckled with light brownish and lilac. Size—.84 × .62. See Fig. 10, Plate B.

This bird so nearly resembles the horned lark that it may easily be confused with it, unless both kinds be at hand for comparison. Its smaller size and lighter colour should serve to distinguish it, and if found nesting, the fact that it breeds within the United States, whilst the horned lark seeks the more northern parts of North America and Europe. Formerly it was not known to breed in the more eastern States, being an inhabitant of the prairies, but since conditions have changed with the advent of civilisation and large tracts of country have been cleared, it has become fairly common in parts of its eastern range.

Two or three broods are reared during the season, the first nest being built as early as the end of March (in Iowa), and the third as late as the beginning of August. The first nest is said to be elaborately made, while the second and third are put together in a slovenly manner. This may be attributed to the fact that during the earlier part of the season the weather is likely to be bad for ground nests, owing to the frequent rains, thus neces-



NEST AND EGGS OF BOBOLINK ON THE GROUND IN A MEADOW

sitating the building of a stronger nest than would be required during the finer weather of June and July.

The nests may usually be found in dry fields of either grass or corn.

494. Bobolink: *Dolichonyx oryzivorus* (Linn.)

Adult ♂—Breeding plumage: Forehead, throat, and under parts black, the feathers being slightly tipped with light buff during the earlier part of the season; back of head and neck light buff; back, dark dusky feathers with buff markings; upper part of rump whitish; wings and tail black, the tail feathers having pointed tips.

Adult ♀—Upper parts dark buff with black streaks; wings and tail brown; under parts light buff.

Adult ♂—Except during breeding season and when immature resembles the female. Length—7.25.

Breeding Range—Southern New York to Nova Scotia, west as far as Utah.

The nest is placed on the ground in meadows, and is formed of grass with occasionally a few leaves, the inside being lined with fine grass. Usually it is an open nest about one and a half inches deep inside, but sometimes it is partly concealed by grass bent over so as to form a sort of rough arch. 3 to 6 and rarely 7 eggs are laid. They vary greatly both in colour and size, ranging from white with distinct chocolate markings, to grayish buff with large brown blotches which nearly cover the ground colour; in size they range from about $.55 \times .79$ to $.66 \times .90$ —the average is about $.63 \times .85$. See Fig. 2, Plate B.

He who has not had the pleasure of hearing and seeing the Bobolink during the breeding season has a great treat in store. This sweet little songster seems to be the very embodiment of pure happiness, spending most of his time singing the song that has inspired both poet and author. Probably no bird of the New World has been so frequently mentioned in the literature of the country. While the bird is in flight the song is particularly enchanting, reminding one to a certain extent of the European skylark, though it is perhaps richer in tone.

To find the bird is very different from finding the nest; it takes many hours of patient searching. You may hide near the

edge of some likely looking field, and watch each female bob-link as she drops in the long grass to where you think her nest may be ; but when you arrive at the place she flies up, and in vain you may search for the carefully concealed nest. The most satisfactory method is for two persons to walk through the field holding either end of a cord along which sticks should be fastened at intervals. These striking the grass frighten the sitting bird, and she flies up directly from the nest, instead of running along through the grass, as she usually does when she sees her disturber.

The best place to find these birds during the breeding time is in the large tracts of moderately moist meadow land, usually not very far from water. The nest is completed about May 15th in northern New Jersey.

Long before the breeding season the male is conspicuous with his fine feathers, but in early August he dons the same colours as his mate and children, when they all start in large flocks for their winter quarters in South America, stopping in a leisurely manner *en route* among the reedy swamps, and visiting again the rice-fields which were in the springtime the scene of the depredations of the old birds. Then it is no longer a day of riotous song ; that day is forgotten, for now it is that the so-called sportsman claims them under the name of Reedbird, and instead of being seen perched on the tall swaying grass or reed, you may look for them in the markets, hung up in bundles of a dozen or so, each happy little life gone, leaving but a mouthful or two of food.

501. Meadowlark: *Sturnella magna* (Linn.)

Eggs white spotted with reddish brown, chiefly at the larger end.

See Page 73, Chapter III.

540. Vesper Sparrow; Bay-winged Bunting: *Pooecætes gramineus* (Gmel.)

Adult—Upper parts brownish gray with dark streaks ; tail dark brown, *the outer feathers white* ; under parts grayish buff streaked with black. Length—6.12.

Breeding Range—From southern Virginia northward ; westward to the plains.



VESPER SPARROW'S NEST

The nest is always placed on the ground, generally at the root of a tall weed or small bush in an open field ; it is slightly made of coarse and fine grass and small roots, lined with horse-hair. 4 or 5 eggs are laid ; they are whitish, thinly spotted and blotched with warm brown and lilac, with sometimes a few black markings. Size—.80 × .60. See Fig. 13, Plate B.

These sparrows are distinguished by the white outside tail feathers, which are extremely noticeable when the bird flies. Do not mistake it for a junco or titlark ! They are among the commonest of the sparrows in parts of Long Island and in New England, where they commence breeding towards the end of May, raising as many as three broods during the season. They are called Vesper Sparrows from their habit of singing until quite late in the evening.

542a. Savanna Sparrow: *Ammodramus sandwichensis savanna* (Wils.)

Adult—Upper parts brownish, darkly streaked ; pale yellow line over the eye and at the bend of the wing ; under parts white or whitish streaked with dark brown. Length—5.65.

Breeding Range—From southern New Jersey northward to Labrador.

The nest is built on the ground in fields or pasture land inland, or in the salt marshes and grassy places on or near the coast ; it is a flimsy structure of grasses, rarely of moss, lined with fine grass and occasionally horse-hair. The number of eggs varies from 3 to 6 ; they are white or greenish white, with fine brown spots or large blotches of cinnamon. The variations in colour are so great that any accurate description is scarcely possible. Size—.78 × .56. See Fig. 15, Plate B.

This little sparrow is generally to be seen along the sea-coast, though it is also found inland. Minot speaks of seeing them breeding in the White Mountains, where he found a nest containing fresh eggs the 23d of July. They begin nesting in May, and rear two or three broods.

Care should be taken that the Savanna Sparrow is not confused with either the sharp-tailed, seaside, or Ipswich sparrow ; the latter, however, does not breed in the United States, but is a northern-breeding species, which, after the breeding season, comes on our northern Atlantic seaboard.

546. Yellow-winged or Grasshopper Sparrow: *Ammodramus savannarum passerinus* (Wils.)

Adult—Upper parts dark or dusky, the feathers being bordered with buff; back of neck warm brown; tail feathers rather short and pointed; under parts buffy, shading into white on the belly. The most distinctive features of this bird are the bright yellow at the bend of the wing and the darker yellow in front of the eye. Length—5.20.

Immature birds have the breast spotted with dark brown or nearly black.

Breeding Range—From the Gulf States to New England, probably not north of Massachusetts.

The nest is either arched or opened. It is made of grass, with fine grass and occasionally horse-hair for lining, and may be found in open fields, usually where the grass is short; often it is placed under an upturned sod or beneath a tussock. 4 to 5 eggs are laid; they are white, with few or many reddish brown spots, mostly around the larger end. Size—.73 × .56. See Fig. 14, Plate B.

The Yellow-winged Sparrow spends nearly all the time on the ground, running through the grass, and only taking wing when forced to do so. When he does fly he gets up with a great deal of noise for so small a bird, and takes a zig-zag course during his short flight, which is seldom more than a few yards.

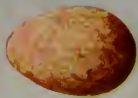
The nesting season in the neighbourhood of New York begins about the middle of May. In Illinois eggs have been found from April 20th to August 12th. Two broods are reared during the season.

547. Henslow's Sparrow: *Ammodramus henslowii* (Aud.)

Adult—Head dark olive-green; either side of crown black; back warm brown; tail feathers sharply pointed, the middle feathers longest; breast buffy with black streaks; belly white or whitish; yellow at bend of wing and in front of eye. Length—5.00.

This bird might be mistaken for the yellow-winged sparrow; its darker colour, greenish tone on back of head, longer tail, with the outside feathers the shortest, should serve to distinguish it.

Immature birds in first plumage have no spots on the breast. (Chapman.)



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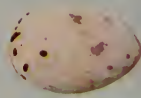
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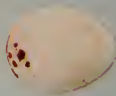
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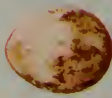
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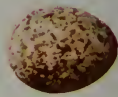
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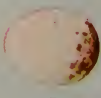
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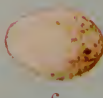
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PLATE B.—Common Eggs.

- 1. Sharp-tailed Sparrow.
- 2. Bobolink
- 3. Lark Sparrow.
- 4. Song Sparrow.
- 5. Field Sparrow.
- 6. American Redstart

- 7. White-throated Sparrow.
- 8. Brown Thrasher.
- 9. Nighthawk.
- 10. Prairie Horned Lark.
- 11. Seaside Sparrow.

- 12. Cedar Waxwing.
- 13. Vesper Sparrow.
- 14. Grasshopper Sparrow.
- 15. Savanna Sparrow.
- 16. Prairie Warbler.
- 17. Bewick's Wren.

Breeding Range—The Eastern States, from Virginia to Massachusetts, “westward to the edge of the plains.”

The nest is somewhat roughly built of coarse grass, placed on the ground often in a slight depression, or close against a tussock in the open fields. The eggs, 3 to 5 in number, are white or nearly white, with distinct brown and purplish spots, more numerous at the larger end. Size—.73 × .56.

This shy and unobtrusive sparrow is rather difficult to find, owing to its habit of remaining in the thick grass unless forced to fly. In its short, jerky flight it resembles its near relation, the yellow-winged or grasshopper sparrow. Generally speaking, it prefers the more moist fields to those that are very dry. The nest, as in the case of other birds of similar habits, is well and carefully hidden in the grass. In Illinois, eggs have been found as early as April 20th and as late as August 12th. Mr. Brewster says that this sparrow breeds commonly but very locally in the eastern part of Massachusetts, quite numerous in portions of Worcester County, sparingly and locally in Berkshire County.

**549. Sharp-tailed Sparrow: *Ammodramus caudacutus*
(Gmel.)**

Adult—Upper parts greenish brown; a light gray line through centre of crown, which is brown; bend of wing light yellow; throat and belly white or whitish; breast light buffy brown with dark streaks. The tail feathers, as the bird's name implies, are very sharply pointed, the outer feathers being much shorter than those in the middle. Length—5.85.

Breeding Range—From South Carolina along the coast to New Hampshire.

The nest is placed on the ground in the sedge or grass in or near the salt marshes; it is built of dry sea-weed and grasses, fine grasses being used for the lining. 4 or 5 eggs are laid, usually 5; they are white or whitish with numerous fine brown or reddish spots chiefly at the larger end. Size—.77 × .55. See Fig. 1, Plate B.

The Sharp-tailed Sparrow resembles the seaside sparrow in its choice of locality, being found always near the salt water, choosing for its nesting place either the brackish or salt-water swamps, or

Open Nests on the Ground

the sandy ground near the swamps, where it may be seen running in and out among the coarse grass, more like a mouse than a bird. Great care should be observed in identifying the nests, as they may easily be mistaken for the nests of the seaside sparrow, both birds generally breeding near each other in the same swamp. The eggs of the sharp-tailed sparrow are somewhat smaller and more finely marked; the nest is usually placed where it is rather drier; it is also more bulky.

The breeding season lasts from May to late July, two broods being reared during that period. The young may be found until well into August.

550. Seaside Sparrow: *Ammodramus maritimus* (Wils.)

Adult—General appearance dusky gray; upper parts grayish; tail brown with narrow, sharply pointed feathers; throat and breast gray, slightly streaked with darker gray; belly white, shading into gray at sides; light yellow patch in front of eye and at bend of wing; the toes are rather long, and the bill is long and slightly thicker than the sharp-tailed sparrow's, though much the same shape. Length—6.00.

Breeding Range—Along the Atlantic coast from North Carolina northward, rarely on the coast of Massachusetts.

Nest, resembling closely that of the sharp-tailed sparrow, only not so bulky, placed on the ground in or near brackish or salt water swamps, built of reeds and grasses lined with fine grass. Usually 4 eggs are laid; they are white or whitish, finely speckled with light reddish brown and lilac. Size—.80 × .63. See Fig. 11, Plate B.

All that has been said of the sharp-tailed sparrow applies equally to these lovers of the sea-coast. In exceptional cases the nests are said to be found arched over.

550a. Scott's Seaside Sparrow: *A. m. peninsulæ* Allen

This is a southern sub-species of the seaside sparrow, being found from the more northern parts of Florida on the Atlantic coast to South Carolina, and on the Gulf coast from Florida to Texas. The most noticeable difference is in the dark streaks on



NEST AND EGGS OF FIELD SPARROW ON GROUND IN FIELD OF DEAD GRASS



PARENT FIELD SPARROW FEEDING ITS YOUNG ON THE DAY THEY LEFT THEIR NEST.
Like most birds whose nests are on the ground, the Field Sparrows abandon their homes very early in life.

the breast and sides, which are much more sharply defined in the southern variety. The nesting habits are described as being identical.

552. Lark Sparrow: *Chondestes grammacus* (Say)

Adult—Head reddish brown with a whitish line through crown and over the eye ; upper parts ashy brown with dark streaks ; tail feathers dark brown with white tips ; under parts white or whitish, a black line on either side of throat, and a black spot on breast. Length—6.25.

Breeding Range—“ Throughout the Mississippi Valley, from eastern Texas and Louisiana on the south to Iowa and southern Michigan on the north.” Accidental on the Atlantic coast.

The nest is usually placed on the ground in prairie land or pastures ; it is made of grasses, twigs, and fine roots, lined with hairs. 3 to 4, and not more than 5, eggs are laid. In some cases they are said to resemble closely the eggs of the Baltimore oriole, though as a rule the markings, consisting of very dark brown and lilac scrawl-like lines, are more confined to the larger end ; the ground colour is white, sometimes tinged with blue or buff. Size—.80 × .63. See Fig. 3, Plate B.

The Lark Sparrow, Lark Finch, Quailbird, or Road-bird, as he is variously named, has scarcely the right to be called a resident of the Eastern States, being but an occasional visitor. In localities where they are regular residents they are said to “ often repair the nests of the mocking-bird and orchard oriole with a lining of grass, horse hairs, etc.” Their eggs have also been found “ in the nest of the scissor-tailed flycatcher,” and though occasionally the nest is built in bushes or even trees, it is usually on the ground. The breeding season lasts from May to July.

558. White-throated Sparrow: *Zonotrichia albicollis* (Gmel.)

Eggs white, tinged with either blue or yellow, with fine marks and heavy blotches of various browns.

See Page 60, Chapter II.

Open Nests on the Ground

563. Field Sparrow: *Spizella pusilla* (Wils.)

Adult—Upper parts light chestnut brown, finely streaked with brown; under parts light buff shading into white on the belly; *bill pinkish*. Length—5.68.

“Young in first plumage have breast streaked with black.” (Chapman.)

Breeding Range—From South Carolina to Canada.

The nest, which is placed either on the ground or in low bushes, is built of grass, fine roots, and occasionally leaves, with the lining of hair or fine grass. 3 to 5 eggs are laid, varying considerably in their colour and markings; some eggs have the ground colour, which is white or greenish white, nearly covered with small reddish spots—rarely blotches—while others have scarcely any spots. Size—.70 × .52. See Fig. 5, Plate B.

These delightful little sparrows are easily recognised by the distinctive reddish or coral-coloured bill and by the long light chestnut tail. They lay their eggs about May 1st near New York, laying two or three sets during the season, which lasts with them until late July. The nests may be found in the open fields, in thickets, and sometimes in scrubby clearings; they are, as a rule, placed on the ground, or in a tussock of either green or dead grass. In some places, however, they are most often to be found in low bushes. While on the nests these birds are usually averse to human visitors; they glide off quietly through the grass, flying up when at some distance to a bush or tall weed, where they give utterance to their anxious little note of reproach. Their song, though small in volume, is decidedly sweet in tone; it may be heard most often in the early hours of the morning, almost before dawn, or late in the afternoon and evening.

567. Snowbird; Junco: *Junco hyemalis* (Linn.)

Eggs greenish or bluish white with fine spots and sometimes blotches of reddish brown and lilac, chiefly in a wreath round the larger end.

See Page 61, Chapter II.



SONG SPARROW'S NEST.

581. Song Sparrow: *Melospiza fasciata* (Gmel.)

Adult—Upper parts rich brown streaked with black, the head having a light gray line in the centre, either side of the crown being brown; throat and breast light gray, with brown marks which usually form an irregular blotch on the breast. Length—6.30.

Breeding Range—Throughout the Eastern States. "East of the Alleghanies, it breeds from South Carolina north to the British provinces."

The nest varies greatly both as to the materials used in its construction and to where it is placed; sometimes it is a bulky structure of coarse grass, weeds, leaves, and bark, lined with hair, being as much as two and a half inches deep inside, and then again it may be a flimsy, shallow affair made of grass and lined with fine grass; it is placed on the ground, in open fields or in woody places, or it is sometimes built in bushes as high as five feet from the ground. The eggs vary greatly, both as to colour and size, ranging from .76 to .85 in length and from .55 to .60 in diameter; the ground colour is white, sometimes tinged with green or blue, with irregular brownish blotches and markings, which in some cases nearly conceal the ground colour. See Fig. 4, Plate B.

The Song Sparrow shows a nature of such extraordinary adaptability to all sorts of conditions that in this one respect he proves himself to be a remarkable little character—a character very well worth studying. Everything about him is made and done with apparently but little regard to rules of any kind. Each season he rears an indefinite number of families, ranging from one to four. The nests are made in various sizes, of various materials, and built in any sort of place, from an old tin can to a hole in a tree, but usually either on the ground or in a bush; if on the ground it may be in a fine large breezy meadow, where the ground is dry, or on the top of a tussock in a swampy thicket.

The time for singing his familiar song varies greatly both as to hour and season; one must not be surprised if at any hour of the day or night his song is heard, whether it be on a bleak March day or when the trees have taken on the glories of the rich autumn colouring; time and place matter but little to this happy songster. Nesting begins about May 1st.

Open Nests on the Ground

583. Lincoln's Sparrow: *Melospiza lincolni* (Aud.)

Eggs greenish white or brownish white spotted and blotched with lavender and chestnut or brown, more thickly at the larger end.

See Page 62, Chapter II.

604. Dickcissel; Black-throated Bunting: *Spiza americana* (Gmel.)

Adult ♂—Forehead yellowish; head gray; back brownish, dark streaked; yellow line over and back of eye and on side of throat; throat white with black patch; breast yellow shading into white on the belly.

Adult ♀—General colour duller, with black patch on throat. Length—6.00.

Breeding Range—"From Texas to Minnesota" (Recent Eastern Records).

The nest may be found either on the ground in open fields and prairies or in bushes or trees; it is built of "leaves, grasses, rootlets, corn-husks, and weed stems; the lining is of fine grass and often horse hair." 3 to 5 pale blue eggs are laid. Size—.80 × .60.

In Iowa the nesting season begins in May, continuing until August.

705. Brown Thrasher: *Harporynchus rufus* (Linn.)

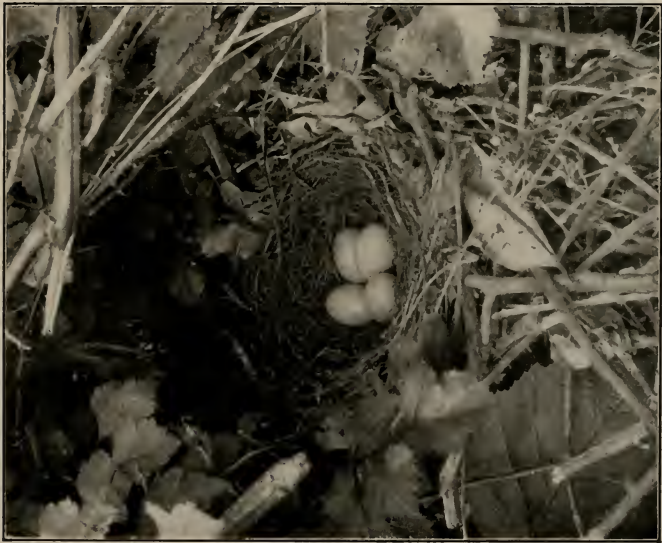
Adult—Upper parts bright orange-brown or rufous; under parts white with black spots forming longitudinal streaks; bill long with downward curve; the tail is over five inches long. Length—11.42.

Breeding Range—From the Gulf States to Canada.

The nest is placed indiscriminately on the ground or in low bushes; it is rather bulky and roughly made of twigs, vine tendrils, roots, bark, and leaves, "lined with horse hair and a few feathers" (Davie). Those that I have found in New Jersey were in every case lined with fine black rootlets. 3 to 5 and rarely 6 eggs



NEST OF BROWN THRASHER ON THE GROUND



NEST AND EGGS OF BROWN THRASHER

are laid ; they are whitish, bluish, or greenish, with numerous fine light brown specks evenly distributed. Size—1.08 × .80. See Fig. 8, Plate B.

The Brown Thrasher is also known under the names of Ground Thrush, Brown Thrush, and in Virginia he is known as the Sandy Mocking-bird, and further south as the French Mocking-bird. In some localities they prefer bushes and thickets, while in others they build almost exclusively on the ground. My own experience has been that most of the nests were found on the ground, near tall weeds, in an open field ; very few were in bushes.

While on the nest these birds, like their relatives the wrens, sit very close, allowing themselves to be almost caught, but once they leave the nest their manner changes and they become intensely noisy, making a great pretence of attacking the intruder, uttering repeatedly their harsh, scolding note.

During the very early hours of the morning or late in the afternoon the brown thrasher may be seen perched on the top-most branch of a tree, singing a song, full and rich in tone, resembling somewhat that of the European song thrush.

The nesting season begins about the second week in May.

Chapter II

OPEN NESTS IN WOODS, THICKETS, SWAMPY THICKETS

289. Bob-white; Quail: *Colinus virginianus* (Linn.)

White eggs.

See Page 35, Chapter I.

289a. Florida Quail: *Colinus virginianus floridanus* (Coues)

White eggs.

See Page 36, Chapter I.

298. Canada Grouse; Spruce Partridge: *Dendragapus canadensis* (Linn.)

Adult ♂—General colour dark grayish brown or nearly black, barred on the back; breast mottled with whitish and buff, excepting lower part of breast, which is black tipped with white. *Bright red skin over eye.*

Adult ♀—Upper parts lighter than in the ♂. Length—15.00.

Breeding Range—The more northern parts of New England and New York, northward.

The nest, which is carefully hidden, generally beneath a low-lying spruce branch, is composed of leaves, dry ferns, moss, twigs, and sometimes weedy grass, placed on somewhat swampy ground in the dense northern forest. The eggs, numbering from 8 to 16, are buff-coloured, with irregular blotches and spots of brown. Size—1.71 × 1.22.

The Canada Grouse, or Spruce Partridge as it is more commonly called, is an inhabitant of the dense forest region of the more northern parts of Maine and New York in the United States,



NEST AND EGGS OF RUFFED GROUSE

and in Canada as far north as the arctic timber line, where it lives a secluded life among the trees—spruce, larches, and fir trees being its favourites.

As a game bird it is fairly well known, though its extreme tameness renders it by no means an exciting quarry. So tame is it that in some places it has been caught by means of a noose attached to the end of a fishing-rod. During the breeding season this bird *drums*, after the manner of the ruffed grouse.

In Maine they breed in May. Incubation occupies 17 days.

300. Ruffed Grouse: *Bonasa umbellus* (Linn.)

Adult ♂—General colour yellowish brown or rusty; upper parts mottled with black and gray; under parts light buff to white or buffy white on the belly, with irregular dark mottled bars, which are more pronounced on the breast and at the sides; on either side of the neck are large tufts of black feathers, which may be distended at will.

Adult ♀—Somewhat lighter than the ♂, and with very small tufts on the neck. Length—17.00.

Breeding Range—Throughout the Eastern States, from the higher regions of Georgia northward.

The nest is on the ground, usually at the base of a tree, sometimes against a fallen log or under a bush. It is made of dead leaves with a few feathers, and is either very shallow or fully five inches deep inside. From 8 to 14 and rarely 16 eggs are laid; they are creamy white, often much stained, and sometimes speckled with brown. Size—1.56 × 1.13.

Under the different names of Ruffed Grouse, Pheasant, and Partridge this bird is well known to all sportsmen as perhaps the finest of our Eastern game birds. Its extraordinary habit of drumming has been the cause of many a surprise, and even of fright, to the novice, who, not knowing whence the sound proceeded, has attributed it to all sorts of wild and ferocious animals. That it is really made by a bird is hard to believe. The sound is made by the rapid striking of the wings either against the sides of the body or against the air (this is a much-disputed question) while the bird is standing on a fallen tree or a low bush; and though this is the mating call, it may be heard throughout the shooting season in Maine and probably elsewhere.

Open Nests in Woods, Thickets, Swampy Thickets

The nesting season in the neighbourhood of New York begins about April 25th. The period of incubation occupies about 18 days, the young leaving the nest as soon as hatched, and after a few days being able to fly.

When the old bird is driven from her nest she starts off with one or both wings, and perhaps a leg, apparently broken, and after scrambling on the ground for a few yards, she scales along until about a hundred feet away, and then takes flight. If she is found with her brood of chicks she acts in a most remarkable manner, either attacking the disturber or else feigning complete powerlessness, thus diverting attention long enough to enable the young to hide.

Near where I am now living (South Orange, N. J.) the woodsmen say that the partridge always build at the foot of a white oak. There seems to be some truth in the saying, so far as this immediate neighbourhood is concerned, as all the nests I have seen hereabouts were at the foot of white oaks.

300a. Canadian Ruffed Grouse: *B. u. togata* (Linn.)

This is a sub-species of the ruffed grouse. Its grayish instead of buffy or rusty colour on the back, and the bars being more distinct on the under parts, especially on the belly, are the chief points of variance.

Breeding Range—Northern New York, Maine, and Vermont, northwards.

These birds vary greatly in colour; in some instances they may be mistaken for the common ruffed grouse, as specimens showing all the intermediate gradations of colour have been taken.

306. Heath Hen: *Tympanuchus cupido* (Linn.)

These birds bear a close resemblance to the prairie hen, the principal difference being in the neck tufts, which are *pointed* instead of *rounded*. Length—18.00.

Breeding Range—Martha's Vineyard.

Nest on the ground; eggs brownish drab or buff. Size— 1.73×1.29 .

The Heath Hen is almost extinct, being restricted to the island of *Martha's Vineyard*, where they are "in imminent danger of total extinction."

310. Wild Turkey: *Meleagris gallopavo* Linn.

Differing in some degree from the darker varieties of the domestic turkey, the smaller wattles and the dark buff or chestnut tip to the tail coverts and tail are characteristic of the wild bird. The adult male is very much larger than the female, weighing usually about 25 pounds, and sometimes as much as 40 pounds, while the female weighs about 8 pounds. Length of adult ♂—48.00.

Breeding Range—Canada to Florida; extinct in New England.

The nest is built on the ground among briars and thick weedy places. 9 to 15 eggs are laid (some writers putting the number as high as 24). They are cream-coloured with fine brownish-red spots. Size—2.55 × 1.80.

Unfortunately, the Wild Turkey is becoming so scarce that in a few years' time it will be a rare bird. Laws made for its preservation were adopted too late, and in many places are utterly disregarded, which means that the birds will become restricted to inaccessible places, such as the large tracts of swampy woodland. It has never been my good fortune to find a wild turkey's nest, so I cannot give any original data in connection with their breeding habits. During the mating season each male fights for the possession of a drove of hens, varying in number from 4 to about 8 or even more; at other times the two sexes flock together, though it is usual for the very old gobblers to remain solitary. Mr. Davis says that when the eggs are once touched the female will abandon her nest.

310b. Florida Wild Turkey: *M. g. osceola* Scott.

The Florida Wild Turkey varies but little from the more northern species, being somewhat smaller, darker in colour, and has irregular white markings on the wings in place of the wide white bars.

Breeding Range—Southern Florida.

Open Nests in Woods, Thickets, Swampy Thickets

The breeding habits are described as almost identical with those of the northern wild turkey.

These magnificent birds are still fairly common in parts of Florida, though much less so than they were a few years ago. When I was in southern Florida in 1892 I sometimes saw in one day as many as seven droves, numbering in all from twenty-five to forty birds. During the seventeen days I camped out I secured thirty-two specimens without very much trouble. This was just before the mating season. The droves contained from three to nine birds, and where both sexes were together the males were usually birds of the previous year. The older males were most often in flocks of about three, with no hens; the very old gobblers were invariably solitary. The males ranged in weight from eight pounds (yearling birds) to twenty-three pounds. The hens weighed rather under seven and a half pounds.

316. Mourning Dove: *Zenaidura macroura* (Linn.)

Eggs white.

See Page 133, Chapter VIII.

317. Zenaida Dove: *Zenaida zenaida* (Bonap.)

Eggs white.

See Page 133, Chapter VIII.

320. Ground Dove; Mourning Dove: *Columbigallina passerina terrestris* Chapm.

Adult ♂—Various shades of "dove colour"; breast somewhat spotted; iridescent feathers forward of the shoulder; bill red.

Adult ♀—Grayer. Length—6.75.

Breeding Range—The Gulf States and Florida, north to North Carolina.

The nest is a flimsy structure of twigs, with sometimes straw or pine needles. It is placed either on the ground or in bushes, rarely at any height from the ground. 2 white eggs are laid. Size—.85 × .65.

The Ground Dove is easily recognised from its size alone, it

Open Nests in Woods, Thickets, Swampy Thickets

being much the smallest of our native doves. As its name implies, it spends the greater part of its time on the ground, where it may be seen moving its head, while walking or running, after the habit of the domestic pigeon.

The nests are usually near cultivated land, frequently in abandoned gardens or yards, and though the ground is perhaps the favourite place for building, yet bushes, trees, or even tree stumps are sometimes chosen. The breeding season lasts from April to July; eggs have been taken as late as October, but this is probably quite exceptional.

322. Quail Dove: *Geotrygon martinica* (Linn).

Eggs white or buffy white.

See Page 133, Chapter VIII.

325. Turkey Vulture; Turkey Buzzard: *Cathartes aura* (Linn.)

Adult—Black tinged with brown; head and neck red, bare of feathers. Length—About 30.00.

Breeding Range—From New Jersey southward; accidental in New England.

The eggs are laid inside a hollow log or stump, or on the ground, often beneath palmetto or small bushes in fairly open places, or among rocks; the eggs are yellowish or grayish white, splashed with chocolate and black, chiefly at the larger end; the number varies from 1 to 4. Size— 2.75×1.90 . See Fig. 1, Plate A.

These birds, so graceful in flight yet so awkward when on the ground, are perhaps the most useful of the southern birds; as they, with their near relatives, the black vultures, are the scavengers that leave no track or trace of anything that might pollute the air. The question, on which so much has been written and which has, I believe, never been satisfactorily decided, is whether it is by the sense of smell or sight that these birds discover the whereabouts of food; that their sight is wonderful must be admitted, while their power of smelling does not appear to be at all remarkable. It is scarcely possible that a bird flying at a height that renders him scarcely visible to the naked eye, and which

must be at least several thousand feet, should be able to get the scent of anything on the earth while the wind is blowing at the rate of fifteen or twenty miles an hour; yet when I have skinned a small animal and thrown down the body, the birds, that were seen to be flying at an immense height, immediately descended and attacked the carcass. Another time, in order to test their olfactory nerves, I took an alligator that had been dead several days, and at night cut it in half; the one-half was hidden by a piece of sacking. These two pieces were placed about thirty feet apart, and in the morning both black vultures and turkey vultures were there in numbers. After finishing the exposed half, they jumped about after their usual fashion and actually stood upon the covered portion, but its presence was not discovered by them. Surely, if they had such a highly developed sense of smell, they would not have acted in this way.

The young are covered with white down for some time after being hatched, and if handled have the disagreeable habit of disgorging offensive matter; so it is advisable to leave them alone. The breeding season begins in April.

326. Black Vulture: *Catharista atrata* (Bartr.)

Adult—Black; the head and neck black, and bare of feathers.

Breeding Range—North Carolina and the lower Mississippi Valley, southward.

The nest, of which there is but a trace, is placed on the ground beneath scrubby growth, in hollow prostrate logs, on stumps, or among rocks. 2 or 3, usually 2 eggs, are laid; they vary greatly in colour; the average is dull white or pale blue, rather heavily spotted and blotched with dark brown and chocolate of various shades. Size—3.00 × 2.00.

The Black Vulture resembles in general characteristics its near relation the turkey buzzard, but it is not as common inland. The nesting habits of both species are very similar. These birds usually make a path to their nests, along which they jump in an awkward manner. The male assists in the tedious duty of incubating, which occupies about twenty-eight or thirty days.

The breeding season commences about the end of February or the beginning of March.

**416. Chuck-will's-widow: *Antrostomus carolinensis*
(Gmel.)**

Breeding Range—From Virginia southward ; most common in Florida.

This is a variety of the whip-poor-will breeding in the warmer parts of the country. In general appearance it is much the same, being somewhat larger, lighter in colour, and having hair-like branches to the bristles at the base of the bill. Length—12.00.

The eggs, two in number, are placed on the bare ground or on leaves in thickets or woods. They are white or buff, marbled with pale brown and lilac blotches and spots. Size—1.40 × 1.00. See Fig. 5, Plate A.

One of the most peculiar things about this bird is its habit of carrying its eggs, or young, from place to place, inside its enormous mouth. In its habits it resembles the more northern species ; the notes are slightly different, having one more syllable. The nesting season begins about the first week in April.

417. Whip-poor-will: *Antrostomus vociferus* (Wils.)

Adult ♂—The general colour is a mixture of rich browns, buff, gray, and black, with a white or whitish band below the throat, and white ends to the three outer tail feathers ; mouth very large, with bristles at base of bill. The middle toe is toothed on the inner side.

Adult ♀—Has the white replaced by cream colour. Length—9.75.

Breeding Range—Throughout the northeastern States.

The eggs are laid on the ground, generally among dry leaves, with no pretence of a nest. The ground colour is creamy white or grayish, with dark or very faint lilac and brown markings and spots ; only two eggs are laid. Size—1.18 × .84.

There are few common eggs more difficult to find than those of the Whip-poor-will. The bird matches to perfection, both in colour and marking, the surroundings chosen for the nesting, or I should perhaps say the ground on which the eggs are deposited, there being no nest. The eggs also are decidedly incon-

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spicuous. The place generally chosen is in the dark woods, where the ground is thickly strewn with dead leaves. The birds look like large bats or moths as they glide away in noiseless flight among the trees, to perch lengthways on a horizontal branch, becoming, to all appearance, part of the bark. In order to find the eggs, it is advisable to use a dog; otherwise it is a most discouraging task. As the birds remove the eggs if they have been handled, it is as well to secure them at the time of finding, as otherwise they may have disappeared when the place is revisited. The young are said to "run about much like young partridge."

In New Jersey the eggs are deposited about June 1st.

558. White-throated Sparrow: *Zonotrichia albicollis* (Gmel.)

Adult—Upper parts reddish brown streaked with black; head black on either side of crown, white between and below the streaks; throat white; yellow between bill and eye, and at bend of wing; under parts gray.

Immature—Breast darker, almost spotted; throat whitish, with two undefined lines; the white on the head replaced by a grayish colour. Length—6.74.

Breeding Range—From northern Michigan and northern New York and northern New England, northward.

The nest is usually placed on the ground in woodland, or sometimes in open pasture land, and occasionally built in a bush or among the branches of a fallen tree. It is made of grasses, weeds, fine roots, and moss, with a lining of fine grass. 4 or 5 eggs are laid; they have the ground colour varying from white to bluish, or sometimes yellowish white, with fine marks and heavy blotches of different shades of brown. Size—.79 × .61 to .89 × .64. See Fig. 7, Plate B.

Next to the white-crowned sparrow, the Peabody-bird or White-throated Sparrow is the handsomest of the sparrows that visit our Eastern States, but he is known to most of us only as an autumn and spring visitor—ever welcome with his plaintive little song.

In New England the breeding season commences about June 1st.

567. Snowbird; Junco: *Junco hyemalis* (Linn.)

Adult ♂—Dark slate colour with slight brownish tinge, except the lower part of breast and belly, which, together with the outer tail feathers, is white.

Adult ♀—Is less decided and lighter in colour. Length—6.27. "Young in first plumage resemble the adults, but have the upper parts, throat, and breast streaked with black." (Chapman.)

Breeding Range—The more northern parts of New England, New York, and Pennsylvania, southward along the Alleghanies to Virginia.

The nest may be found among the roots of a fallen tree, in crevices of banks, or in bushes, but usually it is on the ground in a tangle of undergrowth. It is built of dry grass and moss, well lined with fine grass and hair. The eggs are greenish or bluish white with fine spots and sometimes blotches of reddish purple-brown and lilac, chiefly in a wreath round the larger end. Size—.76 × .56. See Fig. 14, Plate C.

Most of us have met this quiet-coloured bird, but only when nearly all of our summer birds have gone to warmer climes; he then frequents the vicinity of dwellings, spending most of his time either on the roadside or in places where he can find the seeds that form his winter food. During the breeding season few of us are fortunate enough to see him, as he betakes himself to higher altitudes or to the more northern parts of New England. In Ontario the Snowbird is said to begin nesting "the first week of May, and nests with eggs are found as late as August." Minot says that in the White Mountains they lay their eggs in June.

567e. Carolina Snowbird or Junco: *J. h. carolinensis* Brewst.

Resembles the common snowbird, but is slightly larger and is without the brownish tinge to the slate colour of the head, breast, and back.

Breeding Range—The southern part of the Alleghanies, in Virginia and the Carolinas.

The nest is described as being similar to that of the common

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snowbird, but larger, and built of coarser materials ; the eggs are similar but larger.

The habits during the breeding season do not differ materially from those of the preceding species ; the nests being found in bushes, trees, on the ground in open fields, in thickets, and in banks. Two sets of eggs are laid, the first being laid in May.

575. Pine-woods Sparrow: *Peucaea aestivalis* (Licht.)

Adult—Resembling somewhat the field sparrow in shape, having the tail rather long ; upper parts warm brown or chestnut streaked with black, the individual feathers being edged with gray ; breast ash-coloured, occasionally spotted with black ; belly white or whitish ; bend of wing yellow ; the outer tail feathers are very short. Length—5.80.

Breeding Range—Throughout the piney woods of southern Georgia and Florida.

The nest is placed on the ground in the pine woods, amongst the scrub or saw palmetto ; it is a compact structure of fine grasses. 3 to 4 white eggs are laid in May or June. Size—.72 × .61.

As far as I know, not a great deal of data has been collected in connection with the breeding habits of this little sparrow. Its nest is difficult to find, owing to the vastness of the area of suitable country and to the fact that it is carefully hidden among the palmetto, which in itself forms an adequate protection. Mr. Chapman considers the song of this bird superior to that of any of our northern sparrows.

581. Song Sparrow: *Melospiza fasciata* (Gmel.)

Eggs white tinged with green or blue, with irregular brownish blotches.

See Page 49, Chapter I.

583. Lincoln's Sparrow: *Melospiza lincolni* (Aud.)

Adult—Upper parts grayish brown streaked with black and darker brown ; the tail has short outer feathers ; under parts gray and cream colour slightly streaked with black, and a buff band on breast, which should serve to distinguish

it from other sparrows of somewhat similar appearance. Length—5.75.

Breeding Range—Not very far south of the northern border of the United States, and in the high mountain regions further south.

These nests, which are not very often seen, are placed on the ground, much after the manner of the song sparrow's; they are "composed entirely of grasses." The eggs, 3 to 5 in number, are greenish white or brownish white, spotted and blotched with lavender and chestnut or brown, more thickly so at the larger end. Size—.80 × .59.

The habit of skulking through the grass or bushes, so marked in this sparrow, renders him inconspicuous, and consequently he is often thought to be much less common than he really is. In Colorado eggs have been taken in June and July.

584. Swamp Sparrow: *Melospiza georgiana* (Lath.)

Adult—Upper parts deep chestnut or warm brown with dark streaks; lower parts ashy gray; throat white or whitish gray. Length—5.89.

Breeding Range—The northern United States, northward.

The nest is placed in a tussock of grass, usually in a swamp, marshy thicket, or damp meadow, rarely in a low bush; it is made of grasses, lined with fine grass and sometimes horse-hair. 4 or 5 eggs are laid; they resemble the eggs of the song sparrow, but are more broadly and less distinctly blotched; they vary greatly in their markings, which are chocolate or reddish brown, the ground colour being white slightly tinged with green, yellow, or pinkish brown. Size—.80 × .60. See Fig. 15, Plate C.

The Swamp Sparrow is very frequently confused with its near relation, the song sparrow; the duller and more uniform colour of the back, the absence of dark streaks on the under parts, and the patch on the breast should serve to distinguish it. The fact that it flies without jerking its tail is also worth remembering. By any one who has sufficient perseverance the nest may be found from about the middle of May; it is carefully hidden in the rank swamp growth. Two sets of eggs are laid.

Open Nests in Woods, Thickets, Swampy Thickets

587. Towhee; Chewink: *Pipilo erythrophthalmus* (Linn.)

Adult ♂—Head, throat, breast, and back black; tail black with white tips to the three outer feathers; side bright chestnut; belly white; the eye has the iris red.

Adult ♀—The parts that in the male are black are replaced by brown. Length—8.35. "Young in first plumage have the back and under parts streaked with black." (Chapman.)

Breeding Range—Georgia, northward to Canada, westward as far as eastern Dakota.

The nest is rather large and roughly made of dead leaves, fine roots, grass, twigs, grape-vine bark and tendrils, and lined with fine grass and roots. It is placed on the ground or in exceptional cases in bushes. Damp or dry woods, sunny slopes, thickets, or thick grassy clearings may be chosen for the nesting place. 4 and sometimes 5 eggs are laid; they are white, or white tinged with pink or blue, speckled and rarely blotched with brown, chestnut, and lilac, chiefly at the larger end. Size—.95 × .72. See Fig. 8, Plate C.

These birds, so spick and span in their fine plumage, are conspicuous only by their peculiar note, which sounds something like the word "chewink," pronounced with a rising inflection. They may be seen in the thickets or scrubby woods or in brush heaps, ever alert and on the move, jumping from twig to twig, or scratching vigorously among the dead leaves, creating as much bustle and disturbance as would a barn-yard hen. Their nest is so arranged that it is exceedingly difficult to find, the materials used in its construction corresponding both in colour and texture with the immediate surroundings. When near their home the birds are silent, unless you happen to find and disturb the nest, when both male and female join together in making the most piteous cries. The eggs are laid about the second week in May; probably but one brood is reared. Chewinks are also known as Ground Robins and Jorees.

587a. White-eyed Chewink: *P. e. alleni* Coues

Breeding Range—Florida and southeastern part of South Carolina.

The White-eyed Towhee differs from the northern bird in being somewhat smaller, in having only two instead of three of



A MOTHER WORM-EATING WARBLER AND HER YOUNG FAMILY



A YOUNG TOWHEE HIDING BENEATH A DEAD OAK LEAF



NEST OF THE WORM-EATING WARBLER IN A BANK

Open Nests in Woods, Thickets, Swampy Thickets

the tail feathers tipped with white, and in having, as, the name indicates, the iris of the eye nearly white. Length—8.00.

In most respects the habits of these two birds are very similar; the nest of the white-eyed is perhaps more frequently built in bushes, and pine needles, in addition to the other materials, are used in its construction. The eggs are bluish white, unmarked, or "thickly speckled with pinkish-vinaceous and pearl gray" (Davie).

636. Black and White Warbler or Creeper: *Mniotilta varia* (Linn.)

Adult ♂—Streaked all over with black and white, except middle of belly, which is white.

Adult ♀—Very similar, but with almost imperceptible brownish tinge. Length—5.30.

Breeding Range—Eastern States, from Virginia and Kansas northward.

The nests are built on the ground except in very rare instances, when they are placed in holes in trees (Minot). The material used consists of leaves, grass, fine roots, and thin strips of bark, with the lining of hairs. The eggs, 3 to 5 in number, are white, spotted with brown and purple, most of the spots forming a wreath around the larger end. Size—.65 × .55. See Fig. 17, Plate C.

It is impossible to confound these warblers with any other of their family; the colour alone is quite distinctive, as also is their method of creeping along the tree trunks or branches. This is done by no other warbler, except to a very limited extent by the worm-eating. The nuthatches and brown creeper also "creep," but with these there is no chance of confusion. The nests are carefully concealed, generally at the foot of a tree, under a log or projecting stone, in thickly wooded places. The eggs are laid about the third week in May.

639. Worm-eating Warbler: *Helminthus vermivorus* (Gmel.)

Adult—Buff line through centre of crown and above the eye, black lines on either side of crown and back of eye; upper parts greenish buff; under parts buff. Length—5.51.

Open Nests in Woods, Thickets, Swampy Thickets

Breeding Range—Eastern States, from southern New England southward.

The nest is composed of leaves, weed stems, strips of bark, lined with fine roots and occasionally hair ; it is placed on the ground at the foot of a tree, under a log or in a slight depression or hole in a bank. Usually it is in hilly woodland, but sometimes a more open place is chosen. The eggs, 3 to 5 in number, are white or pinkish white, with fine spots of cinnamon and purplish brown, chiefly at the larger end. Size—.72 × .58.

Should you happen to venture at all near to the nest of the Worm-eating Warbler, she will tell you of its proximity by falling on the ground with seemingly broken wings, and apparently on the verge of death from some unknown cause ; she will even roll over and over down the side of a hill while in this condition, in the hope of luring you away from her home, which is usually concealed with the utmost care. When on the nest the parent bird will almost allow herself to be caught, so close does she sit. As a rule, these warblers live and feed on or very near the ground, most frequently in damp woods or thickets, but I have seen them creeping along the overhanging branches somewhat after the manner of the black-and-white creeper. I do not, however, think this is a common habit, as I have seldom seen it done. The nesting season commences towards the end of May in the vicinity of New York.

641. Blue-Winged Warbler: *Helminthophila pinus* (Linn.)

Adult ♂—Upper parts light olive green ; wings and tail bluish ; wing shows two broken white bars ; crown and under parts brilliant yellow. The black line in front and back of the eye is a distinctive feature.

Adult ♀—Under parts somewhat less bright. Length—4.80. The young in first plumage are nearly as bright as the adult ♀.

Breeding Range—Eastern States, from Connecticut and southern New York southward.

The nest is placed on the ground in clearings, scrubby places, and in the undergrowth of woodland or second growth. It varies greatly, being sometimes a very rough structure of



NEST OF BLUE-WINGED WARBLER ON GROUND IN DAMP SCRUB



THE SAME NEST SHOWING YOUNG BIRD JUST OUT OF THE EGG



BLUE-WINGED WARBLER ON NEST

Open Nests in Woods, Thickets, Swampy Thickets

coarse grass, weeds, leaves, bark, and tendrils, and sometimes a compact and well-made nest of the same materials. to 6 eggs are laid ; they are white, with very few spots of brownish red, except round the larger end, where they are more numerous. Size—.62 × .51.

Although in some places this warbler is very common, the nest is always hard to find. I have seen as many as twenty pairs of these birds in a day during the breeding season, and yet not one nest could I find. When the young are hatched it is, of course, much more easy to find the nest, as the female may then be seen carrying food to them. As far as I have been able to ascertain by observation, the female alone supplies the young with food, the male usually accompanying her until within a short distance of the nest, or even to the nest itself, but I have never seen him carry food. When these birds are seen to be very much excited there is every reason for believing that the young, which in all probability have very recently left the nest, are not far away ; they may easily be found, as the parent birds (both male and female take part in feeding the young after they have left the nest) feed them constantly. Near New York nesting begins about the third week in May.

642. Golden-winged Warbler: *Helminthophila chrysoptera* (Linn.)

Adult ♂—Head : Crown bright yellow ; a white line over the eye, then comes a broad black line, level with and below the eye, then a wide white line on either side of the throat, which is black ; upper parts grayish ; wings bluish gray, with yellow patch ; breast and belly white, shading into gray at the sides.

Adult ♀—Duller in colour, dark gray taking the place of the black. Length—5.10.

Breeding Range—"Georgia, North and South Carolina" in the more elevated parts, northward to the more southern parts of New England, also in "Minnesota, Wisconsin, and Michigan, and is a rather common summer resident of Ohio."

The nest may be found either on the ground or in low bushes, usually the former ; it is built of grass, strips of bark, fine roots, and leaves—the leaves being generally outside and underneath ; lining of fine grass. The eggs, 4 to 6 in number, are

Open Nests in Woods, Thickets, Swampy Thickets

white with brownish and lilac spots, mostly at the larger end, where they form an irregular wreath. Size—.62 × .48.

Golden-winged Warblers generally choose rather damp places for their nests, something after the manner of the Maryland yellow-throats or blue-winged warblers; second-growth clearings and such like scrubby places suit their fancy.

Intergradations between the golden-winged warbler and blue-winged warbler are considered hybrids, and are known as Brewster's warbler (*Helminthophila leucobronchialis* [Brewst.]) and Lawrence's warbler (*Helminthophila lawrencei* [Herrick]).

645. Nashville Warbler: *Helminthophila ruficapilla* (Wils.)

Adult—Head bluish gray with chestnut patch on crown; rest of upper parts light olive green; under parts light yellow; no white on any part. Length—4.77.

Breeding Range—Throughout the Northern States, from northern Illinois to Long Island, northward.

The nest is composed of leaves, strips of bark, moss, fine roots, lined with fine grass and often hair; sometimes pine needles are used almost exclusively. It is placed on the ground in open woods, in second-growth woods, and in shrubbery. The eggs are white, thinly or thickly speckled, mostly at the larger end, rarely blotched, with cinnamon brown and lilac. 3 to 5 are laid. Size—.63 × .48.

In Massachusetts the nesting season begins "about the first of June."

675. Water-thrush: *Seiurus noveboracensis* (Gmel.)

Eggs white with rather large spots or markings of cinnamon brown or hazel, more thickly distributed about the larger end.

See Page 91, Chapter V.

675a. Grinnell's Water-thrush: *S. n. notabilis* (Ridgw.)

Eggs identical with those of the water-thrush.

See Page 91, Chapter V.



NEST OF MARYLAND YELLOW-THROAT.

In Raspberry patch.

676. Louisiana Water-thrush: *Seiurus motacilla* (Vieill.)

Eggs creamy white with numerous spots and specks of chestnut and lilac.

See page 92, Chapter V.

677. Kentucky Warbler: *Geothlypis formosa* (Wils.)

Adult ♂—Upper parts light olive green, except the crown, which is black; from the bill, over and back of the eye, is a thin, yellow line; below it there is a black patch, which narrows below the cheek, then again becoming slightly wider; under parts bright yellow.

Adult ♀—Colours rather less brilliant. Length—5.40.

Breeding Range—Throughout the Eastern States, from the Gulf of Mexico to Illinois and Connecticut.

The nest is placed on the ground or among the roots of a fallen tree, usually in woods that are more or less damp; it is a large structure of leaves (mostly on the outside), grasses, and fine roots, lined with fine roots and sometimes hair. The eggs, numbering from 4 to 5, "rarely 6," are white, spotted or blotched, more so at the larger end, with varying shades of brown and gray. Size—.73 × .57.

This bird may be easily mistaken by the novice for the Maryland yellow-throat, being about the same size and colour; the black crown and the light yellow line over the eye, together with the fact that it *walks*, should serve to identify it. Near New York the eggs are laid about the end of May, in Kansas about ten days earlier.

679. Mourning Warbler: *Geothlypis philadelphia* (Wils.)

Eggs white, with reddish-brown spots at the larger end.

See Page 164, Chapter VIII.

681. Maryland Yellow-throat: *Geothlypis trichas* (Linn.)

Adult ♂—Upper parts brownish olive green; forehead, cheeks, and side of throat black, with a light grayish edge back of it; breast, throat, and sides bright yellow; belly grayish white.

Open Nests in Woods, Thickets, Swampy Thickets

Adult ♀—Plumage duller and without the black patch; the sides yellowish brown, shading into grayish white on the belly. Length—5.33.

Breeding Range—Throughout the Eastern States, from Georgia northward; westward to the plains.

The nests are usually placed on the ground; they are also built in low bushes, in almost any kind of place; they vary greatly both in size, shape, and in the materials used in their construction; they may be made of nothing but fine grass, very shallow, resembling the nest of the field sparrow, or they may be very bulky, being as much as six inches high, outside measurement, and made of weeds, strips of bark, tendrils, grass, and leaves, the leaves only on the outside, with the lining of fine grass and hair. Some of the nests are made entirely of reeds and other coarse grass. The eggs are white with fine specks or spots of chocolate and purple, brown and lilac; the spots are not very numerous, and are mostly at the larger end. Usually the number of eggs is 4, sometimes 5 and rarely 6. Size—.70 × .53. See Fig. 16, Plate C.

The Maryland Yellow-throat is perhaps the most common of our warblers during the breeding season; he may be found in almost any thicket, but he undoubtedly prefers places that are damp or even marshy. Wherever he is, he will be found very much in evidence, being of an inquisitive nature and ever on the move, hopping about among the grass or, more often, in a tangle of low bushes.

The nest is described as difficult to find. Why, I do not quite understand; it seems much more easy to find than most of the other ground nests, unless it happens to be arched over, but that is rare. I have found the nests in raspberry vines, as shown in the accompanying illustration, but they are more often found in damp, grassy tangles. The young leave the nest when about five days old.

681b. Florida Yellow-throat: *G. t. ignota* Chapm.

This bird is very similar to the preceding. The bill, tail, and wing are longer, upper parts much browner, the black patch larger, and the yellow rather deeper in colour on the under parts. It is resident in the southern parts of Georgia and in



NEST AND EGGS OF MARYLAND YELLOW-THROAT

Florida. Nesting habits are described as being identical with those of the more northern bird. It is also known as the Palmetto Bird.

686. Canadian Warbler: *Sylvania canadensis* (Linn.)

Eggs creamy white, spotted chiefly at the larger end with reddish brown and lilac.

See Page 92, Chapter V.

705. Brown Thrasher: *Harporhynchus rufus* (Linn.)

Eggs whitish, bluish, or greenish, with numerous fine light reddish-brown specks evenly distributed.

See Page 50, Chapter I.

756. Wilson's Thrush; Veery: *Turdus fuscescens* Steph.

Adult—Upper parts reddish or golden brown; under parts white or grayish white, except the breast, which is tinged with buff and spotted with brown. Length—7.52.

Breeding Range—"From northern Illinois and Pennsylvania to Manitoba and Newfoundland, and southward along the Alleghanies to North Carolina." (Chapman.)

The nest is most commonly placed on the ground, or among the roots of a fallen tree, rarely in bushes, and they "have been found in hollow trunks of trees fifteen feet from ground" (Davie). It is generally a well-made structure about three inches in diameter by two and a half deep inside, and as much as five or six inches deep outside. The materials used in its construction are principally leaves and skeleton leaves, also weeds, fern stalks, reeds, and fine roots, the inside being lined with leaves and fine black roots. 3 to 5 eggs are laid, 3 being perhaps the most common number. They are pale greenish blue, somewhat darker than a robin's eggs. Size—.87 × .64. See Fig. 11, Plate C.

The Wilson's Thrush confines himself chiefly to the low, damp woods, where, in some places, they are very abundant. Their choice of residence, however, renders them almost unknown, except to people who are directly interested in birds. In appearance they may be said to resemble a very dull-coloured

Open Nests in Woods, Thickets, Swampy Thickets

wood thrush without the bright rufous tail, and the markings on the breast are not nearly so conspicuous. Their note is very peculiar, sounding almost like the sharpening of a scythe with a whetstone. It is a sound that cannot be confounded with any other bird's note. The place chosen for nesting is on the ground in the damp woods, not far from water as a rule. The nest is very often built at the foot of a sapling, or between the stems of a bush, or on a mound of moss and grass, and not infrequently in dry clearings with shrubby undergrowth. I have never found a nest in a bush, but I am told that such places are sometimes, though rarely, chosen. From my experience with these denizens of the dark, wet woods I should be inclined to believe they have but scanty confidence in man. I have tried repeatedly, and in vain, to secure a photograph of the sitting bird. The eggs are laid about the third week in May.

759b. Hermit Thrush: *Turdus aonalaschkæ pallasii* (Cab.)

Adult—Upper parts dusky olive brown; tail bright rufous; under parts white or whitish, tinged on the breast with buff, and marked with large dark spots. Length—7.17.

Breeding Range—From Michigan and northern New England (including northwestern Connecticut), the higher regions of New York, northward.

The nest is always on the ground, generally in damp, woody places or on shrubby slopes. It resembles the nest of the Wilson's thrush, but is rather larger, and pine needles and moss, as well as leaves, roots, weeds, etc., are used in its construction. 3 or 4 eggs are laid; they are plain bluish green; in very rare cases they are said to be spotted. Size—.88 × .69.

These birds well deserve the name given them, for their usually solitary habits are truly hermit-like. In the deep, dark forests, where all is hushed and quiet, the sweet sympathetic notes of this famous songster may be heard; few other birds are there to join with him in his song to the woods.

The Hermit Thrush need never be mistaken for any other of the thrush family; his rufous tail and brownish back are entirely distinctive. In northern New England the nesting season commences towards the end of May.



NEST OF WILSON'S THRUSH.
Placed on a mound of moss-covered earth.

Chapter III

COVERED OR ARCHED NESTS ON GROUND

PART I.—IN OPEN COUNTRY

289. Bob-white; Quail: *Colinus virginianus* (Linn.)

Eggs white; nest rarely and but roughly arched.

See Page 35, Chapter I.

501. Meadowlark: *Sturnella magna* (Linn.)

Adult—Summer plumage: Back and head warm lightish brown, marked with black and brown; yellow line from the bill over the eye, dark brown line from eye to back of neck; throat and breast bright yellow, with black crescent on breast beginning above bend of wing; tail—outside feathers white or partly white, middle feathers light brown with dark transverse markings. The winter plumage is much less brilliant. Length—10.75.

Breeding Range—Throughout the Eastern States.

The nest is built on the ground in open fields, generally where there is high grass or young grain. It is formed of grass and is frequently arched or partly so.

The eggs, varying from 4 to 6 in number, are white, speckled chiefly at the larger end with reddish brown and lilac. Size—1.10 × .80. See Fig. 7, Plate C.

The Meadowlark's nest is not easy to find, even where the birds are plentiful, and unless the old bird is seen to rise from it, and the place is then very carefully marked, many weary miles may be walked through grassy fields without a nest being discovered. Built entirely of grass, and placed in a tuft of tall grass or grain, it is difficult to see even when the nest is an open one,

Covered or Arched Nests on Ground

but when arched or covered, and with a winding hidden passage leading to the opening, which is on the side, it is decidedly inconspicuous.

In the neighbourhood of New York the breeding season begins early in May.

546. Yellow-winged or Grasshopper Sparrow: *Ammodramus savannarum passerinus* (Wils.)

Eggs white or whitish, finely spotted with reddish brown.

See Page 44, Chapter I.

550. Sea-side Sparrow: *Ammodramus maritimus* (Wils.)

Eggs white or whitish, finely speckled with light reddish brown and lilac.

See Page 46, Chapter I.

575. Pine-woods Sparrow: *Peucæa æstivalis* (Licht.)

Eggs pure white.

See Page 62, Chapter II.

PART II.—ARCHED NESTS IN WOODS OR THICKETS

575a. Bachman's Sparrow: *Peucæa æstivalis bachmani* (Aud.)

Adult—Upper parts rufous with dark streaks; lower parts light brownish buff; warm gray or buff line over eye; yellow at bend of wing; the tail has the outer feathers the shortest. Length—5.75.

Breeding Range—The Southern States, from Kentucky and North Carolina, and southern Illinois, southward.

The nests in all probability are invariably arched or roofed, with the opening well hidden on the side; grass alone is used in their construction, with the grass tops for lining. The eggs are white, 3 to 4 in number. Size—.75 × .60.

This sparrow resembles closely the pine-woods sparrow, but it has no spots on the under parts, and few, sometimes none at all, on the back. Its habits are terrestrial.



THE MEADOWLARK'S DOME-SHAPED NEST



NEST AND EGGS OF THE YELLOW-WINGED OR GRASSHOPPER SPARROW

The places chosen for nesting are the pine or oak woods, or scrubby open ground, seldom far from trees. The nests are very difficult to find, owing not only to the fact that they are carefully covered, but the bird, instead of flying up directly from the nest, runs along the ground for some distance before taking flight. From April to July nests may be found.

674. Golden-crowned Thrush; Oven-bird: *Selurus aurocapillus* (Linn.)

Adult—Upper parts brownish olive; crown dull orange with dark line on either side; under parts white, slightly tinged with yellow, with numerous dark spots forming lines from the throat downwards. Length—6.17.

Breeding Range—From Virginia and Kentucky northward, and in the higher regions of the Carolinas.

The arched or domed nest is formed of dead leaves, skeleton leaves, and roots, with the lining mostly of fine hair-like roots, and sometimes hair; the opening is at the side, and is fairly large, about three inches high; the nest is placed among dead leaves, either on a bank or on the level ground in dry woods. The eggs vary in number from 3 to 6, sets of 5 being the most common; they are pinkish white, with either few or many fine specks of light chocolate colour or sometimes blotches of reddish or lilac, chiefly at the larger end. Size—.78 × .58. See Fig. 12, Plate C.

This thrush-like warbler may be found throughout our woods—perhaps the most common of the woodland birds, and certainly the one most frequently seen during the earlier part of the breeding season; he is easily identified by his size, being *much* smaller than any of the thrushes except Bicknell's thrush (which is but little larger); by the dull orange crown, the feathers on the head being elevated when the bird becomes excited, and by the fact that he *walks*.

When the nest is threatened these birds become greatly excited, coming close to the intruder, and then feigning broken wings and general demoralisation, uttering all the time a rather sharp and piteous note; the nest is carefully hidden amongst the dead leaves and young spring growth, and is somewhat difficult to find. It is often completed several days before the eggs are laid.

Covered or Arched Nests on Ground

The young remain with and are fed by their parents until fully grown. The old birds show clearly the whereabouts of the young by their excitement when one comes even within a hundred yards of them.

In the vicinity of New York the nests are finished by May 14th; probably two and perhaps three broods are reared, as I have seen the young being fed as late as the end of August.

In Massachusetts the season is about ten days later.

681. Maryland Yellow-throat: *Geothlypus trichas* (Linn.)

Eggs white, with fine specks or spots of chocolate and purple brown, the spots not being very numerous and mostly at the larger end. Nests rarely and then only partly arched.

See Page 69, Chapter II.



BACK VIEW OF THE SAME NEST



FRONT VIEW OF THE OVEN-BIRD'S NEST

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