



BIRDS



FEATHERS



NESTS



EGGS

ANNA COMSTOCK'S

# HANDBOOK OF NATURE-STUDY

# Handbook of Nature-Study: Birds

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## CONTENTS

### BIRDS

BIRDS	3
BEGINNING BIRD STUDY IN THE PRIMARY GRADES	4
FEATHERS AS CLOTHING	6
FEATHERS AS ORNAMENT	11
HOW BIRDS FLY	16
MIGRATION OF BIRDS	20
EYES AND EARS OF BIRDS	24
THE FORM AND USE OF BEAKS	26
THE FEET OF BIRDS	30
SONGS OF BIRDS	33
ATTRACTING BIRDS	36
VALUE OF BIRDS	38
CHICKEN WAYS	43
PIGEONS	48
THE CANARY AND THE GOLDFINCH	54
THE GOLDFINCH OR THISTLE BIRD	56
NESTING HABITS TO BE OBSERVED IN THE SPRING	59
THE GOLDFINCH	60
THE ROBIN	62
THE BLUEBIRD	71
THE WHITE-BREASTED NUTHATCH	77
THE CHICKADEE	82
THE DOWNY WOODPECKER	86
THE SAPSUCKER	93
THE RED-HEADED WOODPECKER	97
THE FLICKER OR YELLOW-HAMMER	100
THE MEADOW-LARK	105
THE ENGLISH SPARROW	110
THE CHIPPING SPARROW	116
THE SONG SPARROW	121
THE SING-AWAY BIRD	125
THE MOCKINGBIRD	126
THE CATBIRD	132
THE BELTED KINGFISHER	137

THE SCREECH OWL	142
THE HAWKS	149
THE SWALLOWS AND THE CHIMNEY SWIFT	156
THE HUMMINGBIRD	166
THE RED-WINGED BLACKBIRD	169
THE BALTIMORE ORIOLE	173
THE CROW	179
THE CARDINAL GROSBEAK	185
GEESE	191
THE TURKEY	201



ANDY MORFFEY

*A loggerhead shrike adult feeding some recent fledglings*

## BIRDS

THE reason for studying any bird is to ascertain what it does; in order to accomplish this, it is necessary to know what the bird is, learning what it is, being simply a step that leads to a knowledge of what it does. But, to hear some of our bird devotees talk, one would think that to be able to identify a bird is all of bird study. On the contrary, the identification of birds is simply the alphabet to the real study, the alphabet by means of which we may spell out the life habits of the bird. To know these habits is the ambition of the true ornithologist, and should likewise be the ambition of the beginner, even though the beginner be a young child.

Several of the most common birds have been selected as subjects for lessons in this book; other common birds, like the phoebe and wrens, have been omitted purposely; after the children have studied the birds, as indicated in the lessons, they will enjoy working out lessons for themselves with other birds. Naturally, the sequence of these lessons does not follow scientific classification; in the first ten lessons, an attempt has been made to lead the child gradually into a knowledge of bird life. Beginning with the chicken there follow naturally the lessons with pigeons and the canary; then there follows the careful



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*These 20 day old barn swallows are starting to take small test flights but are still being fed in the nest.*

and detailed study of the robins and constant comparison of them with the blue birds. This is enough for the first year in the primary grades. The next year the work begins with the birds that remain in the North during the winter, the chickadee, nuthatch and downy

woodpecker. After these have been studied carefully, the teacher may be an opportunist when spring comes and select any of the lessons when the bird subjects are at hand. The classification suggested for the woodpeckers and the swallows is for more advanced pupils, as are the lessons on the geese and turkeys. It is to be hoped that these lessons will lead the child directly to the use of the bird manuals, of which there are several excellent ones.

### **BEGINNING BIRD STUDY IN THE PRIMARY GRADES**

The hen is especially adapted as an object lesson for the young beginner of bird study. First of all, she is a bird, notwithstanding the adverse opinions of two of my small pupils who stoutly maintained that "a robin is a bird, but a hen is a hen." Moreover, the hen is a bird always available for nature-study; she looks askance at us from the crates of the world's marts; she comes to meet us in the country barnyard, stepping toward us sedately; looking at us earnestly, with one eye, then turning her head so as to check up her observations with the other; meantime she asks us a little question in a wheedling, soft tone, which we understand perfectly to mean "have you perchance brought me something to eat?" Not only is the hen an interesting bird in her-



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*A common blackbird (Turdus merula) on her nest.*

self, but she is a bird with problems; and by studying her carefully we may be introduced into the very heart and center of bird life.

This lesson may be presented in two ways: First, if the pupils live in the country where they have poultry at home, the whole series of lessons may best be accomplished through interested talks on the part of the teacher, which should be followed on the part of the children, by observations, which should be made at home and the results given in school in oral or written lessons. Second, if the pupils are not familiar with fowls, a hen and a chick, if possible, should be kept in a cage in the schoolroom for a few days, and a duck or gosling should be brought in one day for observation. The crates in which fowls are sent to market make very good cages. One of the teachers of the Elmira, N. Y. Schools introduced into the basement of the schoolhouse a hen, which there hatched her brood of chicks, much to the children's delight and edification. After the pupils have become thoroughly interested in the hen and are familiar with her ways, after they have fed her and watched her, and have for her a sense of ownership, the following lessons may be given in an informal manner, as if they were naturally suggested to the teacher's mind through watching the fowl.



*An American Robin*

## The Robin

### **TEACHER'S STORY**

MOST of us think we know the robin well, but very few of us know definitely the habits of this, our commonest bird. The object of this lesson is to form in the pupils a habit of careful observation, and enable them to read for themselves the interesting story of this little life which is lived every year before their eyes. Moreover, a robin notebook, if well kept, is a treasure for any child; and the close observation necessary for this lesson trains the pupils to note in a comprehending way the habits of other birds. It is the very best preparation for bird study of the right sort.

A few robins occasionally find a swamp where they can obtain food to nourish them during the northern winter, but for the most part, they go in flocks to our Southern States where they settle in swamps and cedar forests and live upon berries. They are killed in great numbers by the native hunters who eat them or sell them for table use, a



performance not understandable to the northerner. The robins do not nest nor sing while in Southland, and no wonder! When the robins first come to us in the spring they feed on wild berries, being especially fond of those of the Virginia creeper. As soon as the frost is out of the ground they begin feeding on earthworms, cutworms, white grubs, and other insects. The male robins come first, but do not sing until their mates arrive.

The robin is ten inches long and the English sparrow is only six and one-third inches long; the pupils should get the sizes of these two birds fixed in their minds for comparison in measuring other birds. The father robin is much more decided in color than his mate; his beak is yellow, there is a yellow ring about the eye and a white spot above it. The head is black and the back slaty-brown; the breast is brilliant reddish brown or bay and the throat is white, streaked with black. The mother bird has paler back and breast and has no black upon the head. The wings of both are a little darker than the back, the tail is black with the two outer feathers tipped with white. These white spots do not show except when the bird is flying and are "call colors," that is, they enable the birds to see each other and thus keep together when flying in flocks during the night. The white patch made by the under tail-coverts serves a similar purpose. The feet and legs are strong and dark in color.

The robin has many sweet songs and he may be heard in the earliest dawn and also in the evenings; if he wishes to cheer his mate he may burst into song at any time. He feels especially songful before the summer showers when he seems to sing, "I have a theory, a theory, it's going to rain." And he might well say that he also has a theory, based on experience, that a soaking shower will drive many of the worms and larvae in the soil up to the surface where he can get them. Besides these songs the robins have a great variety of notes which the female shares, although she is not a singer. The agonizing, angry cries they utter when they see a cat or squirrel must express their feelings fully; while they give a very different warning note when they see crow or hawk, a note hard to describe, but which is a long, not very loud squeak.

A robin can run or hop as pleases him best, and it is interesting to



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*A newly hatched American robin among unhatched eggs in a nest in Charlotte, North Carolina.*

see one, while hunting earthworms, run a little distance, then stop to bend the head and listen for his prey, and when he finally seizes the earthworm he braces himself on his strong legs and tugs manfully until he sometimes almost falls over backward as the worm lets go its hold. The robins, especially at nesting time, eat many insects as well as earthworms.

The beginning of a robin's nest is very interesting; much strong grass, fine straw, leaves and rootlets are brought and placed on a secure support. When enough of this material is collected and arranged, the bird goes to the nearest mud puddle or stream margin and fills its beak with soft mud and going back "peppers" it into the nest material, and after the latter is soaked the bird gets into it and molds it to the body by nestling and turning around and around. In one case which the author watched the mother bird did this part of the building, although the father worked industriously in bringing the other materials. After the nest is molded but not yet hardened, it is lined with fine grass or rootlets. If the season is very dry and there is no soft mud at hand, the robins can build without the aid of this plaster. There are usually four eggs laid which are exquisite greenish blue in color.

Both parents share the monotonous business of incubating, and in the instance under the eyes of the author the mother bird was on the nest at night; the period of incubating is from eleven to fourteen days. The most noticeable thing about a very young robin is its wide, yellow-margined mouth, which it opens like a satchel every time the nest is jarred. This wide mouth cannot but suggest to anyone that it is meant to be stuffed, and the two parents work very hard to fill it. Both parents feed the young and often the father feeds the mother bird while she is brooding. Professor Treadwell experimented



*A robin feeding its hungry young*

with young robins and found that each would take 68 earthworms daily; these worms if laid end to end would measure about 14 feet. Think of 14 feet of earthworm being wound into the little being in the nest, no wonder that it grows so fast! I am convinced that each pair of robins about our house has its own special territory for hunting worms, and that any trespasser is quickly driven off. The young bird's eyes are unsealed when they are from six to eight days old, and by that time the feather tracts, that is, the place where the feathers are to grow, are covered by the spine-like pin-feathers; these feathers push the down out and it often clings to their tips. In eleven days the birds are pretty well feathered; their wing feathers are fairly developed but alas, they have no tail feathers! When a young robin flies from the nest he is a very uncertain and tippy youngster, not having any tail to steer him while flying, nor to balance him when alighting.

It is an anxious time for the old robins when the young ones leave the nest, and they flutter about and scold at any one who comes in



*Young robins. Their spotted breasts show their relationship to the thrushes*

sight, so afraid are they that injury will come to their inexperienced young ones; for some time the parents care for the fledglings, solicitously feeding them and giving them warnings of danger. The young robin shows in its plumage its relation to the thrush family, for it is yellowish and very spotted and speckled, especially the breast. The parents may raise several broods, but they never use the same nest for two consecutive broods, both because it may be infested with parasites and because it is more or less soiled; although the mother robin works hard to keep it clean, carrying away all waste matter in her beak and dropping it. Robins do not sing much after the breeding season is over until after they have molted. They are fond of cherries and other pulp fruits and often do much damage to such crops. The wise orchardist will plant a few Russian mulberry trees at a reasonable distance from his cherry trees, and thus, by giving the robins a fruit which they like better, and which ripens a little earlier, he may save his cherries. It has been proven conclusively that the robins are far more beneficial than damaging to the farmer; they destroy many noxious insects, two-thirds of their food the entire year consisting of insects; during April and May they do a great work in destroying cutworms.

The robins stay with us later than most migrating birds, not leaving us entirely before November. Their chief enemies in northern climates are cats, crows and squirrels. Cats should be taught to let birds alone (see lesson on cat) or should be killed. The crows have driven the robins into villages where they can build their nests under the protection of man. If crows venture near a house to attack the robins, firing a gun at them once or twice will give them a hint which they are not slow to take. The robins of an entire neighborhood will attack a nest-robbing crow, but usually too late to save the nestlings. The robins can defend themselves fairly well against the red squirrel unless he steals the contents of the nest while the owners are away. There can be no doubt that the same pair of robins return to the same nesting place year after year. On the Cornell Campus a robin lacking the white tip on one side of his tail was noted to have returned to the same particular feeding ground for several years; and we are very certain that the same female bird built in the vines of our piazza for seven consecutive years; it took two years to win her confidence; but after that, she seemed to feel as if she were a part of the family and regarded us all as friends. We were sure that during her fifth year she brought a new young husband to the old nesting site; probably her faithful old husband had been served for a dinner in some Tennessee hotel during the previous winter.

### LESSON

*Leading thought*— To understand all we can about the life and ways of the robin.

*Methods*— For first and second grades this work may be done by means of an extra blackboard, or what is far better, sheets of ordinary, buff, manilla wrapping paper fastened together at the upper end, so that they may be hung and turned over like a calendar. On the outside page make a picture of a robin in colored chalk or crayons, coloring according to the children's answers to questions of series "b". Devote each page to one series of questions, as given below. Do not show these questions to the pupils until the time is ripe for the observations. Those pupils giving accurate answers to these questions should have their names on a roll of honor on the last page of the chart.

For third or higher grades the pupils should have individual note-books in which each one may write his own answers to the questions of the successive series, which should be written on the blackboard at proper time for the observations. This note-book should have a page about 6x8 inches and may be made of any blank paper. The cover or first page should show the picture of the robin colored by the pupil, and may contain other illustrative drawings, and any poems or other literature pertinent to the subject. If prizes are awarded in the school, a bird book should be given as award for the best note-book in the class.

*Observations by pupils—*

SERIES A (TO BE GIVEN IN MARCH).

1. At what date did you see the first robin this year?
2. Where did the robin spend the winter; did it build a nest or sing when in its winter quarters?
3. What does it find to eat when it first comes in the spring? How does this differ from its ordinary food?
4. Does the robin begin to sing as soon as it comes North?

SERIES B (TO BE GIVEN THE FIRST WEEK OF APRIL).

1. How large is the robin compared with the English sparrow?
2. What is the color of the beak? The eye? Around and above the eye?
3. The color of the top of the head? The back? The throat? The breast?
4. Do all the robins have equally bright colors on head, back and breast?
5. What is the color of the wing feathers?
6. What is the color of the tail feathers? Where is the white on them? Can the white spots be seen except during flight of the bird? Of what use to the robin are these spots?
7. Is there white on the underside of the robin as it flies over you? Where?
8. What is the color of the feet and legs?

SERIES C (TO BE GIVEN THE SECOND WEEK OF APRIL).

1. At what time of day does the robin sing? Is it likely to sing before a rain? How many different songs does a robin sing?
2. What note does a robin give when it sees a cat?
3. What sounds do the robins make when they see a crow or a hawk?
4. Does a robin run or walk or hop?
5. Do you think it finds the hidden earthworm by listening? If so describe the act.
6. Describe how a robin acts as it pulls a big earthworm out of the ground.
7. Do robins eat other food than earthworms?

SERIES D (TO BE GIVEN BY THE MIDDLE OF APRIL).

1. At what date did your pair of robins begin to build their nest?
2. Where was the nest placed and with what material was it begun?
3. Can you tell the difference in colors between the father and mother birds? Do both parents help in making the nest?
4. How and with what material is the plastering done? How is the nest molded into shape? Do both birds do this part of the work?
5. Where is the mud obtained and how carried to the nest?
6. How is the nest lined?

SERIES E (TO BE GIVEN A WEEK AFTER SERIES D ).

1. What is the number and color of the eggs in the nest?
2. Do both parents do the sitting? Which sits on the nest during the night?
3. Give the date when the first nestling hatches.
4. How does the young robin look? The color and size of its beak? Why is its beak so large? Can it see? Is it covered with down? Compare it to a young chick and describe the difference between the two.
5. What does the young robin do if it feels any jar against the nest? Why does it do this?
6. Do the young robins make any noise?
7. What do the parents feed their young? Do both parents feed them? Are the young fed in turns?
8. Does each pair of robins have a certain territory for hunting worms which is not trespassed upon by other robins?

SERIES F (TO BE GIVEN THREE DAYS AFTER SERIES E ).

1. How long after hatching before the young robin's eyes are open? Can you see where the feathers are going to grow? How do the young feathers look?
2. How long after hatching before the young birds are covered with feathers?
3. Do their wing or tail feathers come first?
4. How is the nest kept clean?
5. Give the date when the young robins leave the nest. How do the old robins act at this important crisis?
6. Describe the young robin's flight. Why is it so unsteady?
7. How do the young robins differ in colors of breast from the parents?
8. Do the parents stay with the young for a time? What care do they give them?
9. If the parents raise a second brood do they use the same nest?

SERIES G (TO BE GIVEN FOR SUMMER READING AND OBSERVATIONS).

1. Do the robins sing all summer? Why?
2. Do the robins take your berries and cherries? How can you prevent them from doing this?
3. How does the robin help us?
4. How long does it stay with us in the fall?
5. What are the chief enemies of the robin and how does it fight or escape them? How can we help protect it?
6. Do you think the same robins come back to us each year?

*Supplementary reading— Nestlings of Forest and Marsh, Wheelock, p. 62; Our Birds and their Nestlings, Walker, pp. 26, 37, 41, 42; True Bird Stories, Miller, pp. 37, 138; The Bird Book, Eckstrom, p. 248; Familiar Wild Animals, Lottridge; The History of the Robins, Trimmer; Field Book of Wild Birds and their Music, Mathews, p. 246; Birds in Their Relation to Man, Weed and Dearborn, p. 90; Songs of Nature, Burroughs, p. 94; Wake Robin, Burroughs; Audubon Leaflet No. 4.*





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*A pair of Eastern Bluebirds in Michigan, USA.*

## The Bluebird

### **TEACHER'S STORY**

STERN as were our Pilgrim Fathers, they could not fail to welcome certain birds with plumage the color of June skies, whose sweet voices brought hope and cheer to their homesick hearts at the close of that first, long, hard winter of 1621. The red breasts of these birds brought to memory the robins of old England and so they were called “Blue robins”; and this name expresses well the relationship implied, because the bluebirds and robins of America are both members of the thrush family, a family noted for exquisite song.

The bluebirds are usually ahead of the robins in the northward journey and arrive in New York often amid the blizzards of early March, their soft, rich “curly” notes bringing, even to the doubting mind, glad convictions of coming spring. There is a family resemblance between voices of bluebird and robin, a certain rich quality of tone, but the



*A hollow fence post is a common home of the bluebird.  
The young are fed chiefly on insects*

robin's song is far more assertive and complex than is the soft, "purling" song of the bluebird, which has been vocalized as "tru-al-ly, tru-al-ly." These love songs cease with the hard work of feeding the nestlings in April, but may be heard again as a prelude to the second brood in June. The red breast of the bluebird is its only color resemblance to the robin, although the young bluebirds and robins are both spotted, showing the thrush colors. The robin is so much larger than the bluebird that commonly the relationship is not noticed. This is easily explained because there is

nothing to suggest a robin in the exquisite cerulean blue of the bluebird's head, back, tail and wings. This color is most brilliant when the bird is on the wing, in the sunshine. However, there is a certain mirror-like quality in these blue feathers; and among leaf shadows or even among bare branches they in a measure, reflect the surroundings and render the bird less noticeable. The female is paler, being grayish blue above and with only a tinge of red-brown on the breast; both birds are white beneath.

The bluebirds haunt open woods, fields of second growth and especially old orchards. They flit about in companies of three or four until they mate for nesting. While feeding, the bluebird usually sits on a low branch keeping a keen eye on the ground below, now and then dropping suddenly on an unsuspecting insect and then returning to

its perch; it does not remain on the ground hunting food as does the robin. The nest is usually built in a hole in a tree or post and is made of soft grass. A hollow apple tree is a favorite nesting site.

In building birdhouses we should bear in mind that a cavity about ten inches deep and six inches in height and width will give a pair of bluebirds room for building a nest. The opening should not be more than two or two and one-half inches in diameter and there should be no threshold; this latter is a very particular point. If

there is a threshold or place to alight upon, the sparrows are likely to dispute with the bluebirds and drive them away, but the sparrow does not care for a place which has no threshold. The box for the bluebird may be made out of old boards or may be a section of an old tree trunk; it should be fastened from six to fifteen feet above the ground, and should be in nowise noticeable in color from its surroundings. To protect the nest from cats, barbed wire should be wound around the tree or post below the box. If the box for the nest is placed upon a post the barbed wire will also protect it from the squirrels. The eggs are bluish white; the young birds, in their first feathers, are spotted on the back and have whitish breasts mottled with brown. The food of the nestlings is almost entirely insects. In fact, this bird during its entire life is a great friend to man. The food of the adult is more than three-fourths insects and the remainder is wild berries and fruits, the winter food being largely mistletoe berries. It makes a specialty of injurious beetles, caterpillars and grasshoppers, and never touches any of our cultivated fruits. We should do everything in our power to en-



*Bluebirds often nest in man-made houses*

courage and protect these birds from their enemies, which are chiefly cats, squirrels and English sparrows.

The migration takes place in flocks during autumn, but it is done in a most leisurely manner with frequent stops where food is plenty. The bluebirds we see in September are probably not the ones we have had with us during the summer, but are those which have come from farther north.

They winter largely in the Gulf States; the writer has often heard them singing in midwinter in Southern Mississippi. The bluebirds seem to be the only ones that sing while at their winter resorts. They live the year round in the Bermudas, contrasting their heavenly blue plumage with the vivid red of the cardinals. The bluebird should not be confused with the indigo bunting; the latter is darker blue and has a blue breast.

*References*— Bulletin, Some Common Birds in Their Relation to Man, U. S. Dept. of Agr.; Bulletin, The Food of Nestling Birds, U. S. Dept. of Agr.; Birds in Their Relation to Man, Weed & Dearborn, pp. 86-88; Nature-Study and Life, Hodge, chapters 18-21; Junior Audubon Leaflets; Birds of Eastern North America, Chapman, 9. 403; Field Book of Wild Birds and Their Music, Mathews, pp. 251-254; Nature-Study in Elementary Schools, Wilson, p. 188.

*“Winged lute that we call a bluebird,  
You blend in a silver strain  
The sound of the laughing waters,  
The patter of spring’s sweet rain,  
The voice of the winds, the sunshine,  
And fragrance of blossoming things.  
Ah! You are an April poem,  
That God has dowered with wings.”*

—THE BLUEBIRD, REXFORD.



## LESSON

*Leading thought*— The bluebird is related to the robins and thrushes and is as beneficial as it is beautiful. We should study its habits and learn how to make nesting boxes for it, and protect it in all ways.

*Methods*— The observations of this lesson must be made in the field and by the pupils individually. Give to each an outline of questions to answer through see-

ing. There should follow reading lessons on the bluebird's value to us and its winter migrations, and the lesson should end in discussions of best way to build boxes for its use in nesting season, its protection from cats and other enemies.

*Observations*—

1. Which comes North earlier in spring, the robin or the bluebird?
2. How do the two resemble each other and differ from each other?
3. Describe the bluebirds' song. Do they sing all summer?
4. Describe the colors of the bluebird as follows: The head, back, breast, under parts, wings, tail. How does the male bluebird differ from his mate in colors?
5. Where were the bluebirds you saw? What were they doing? If feeding, how did they act?
6. Can you see the color of the bluebird as plainly when it is in a tree as when it is flying? If not, why?
7. Where do the bluebirds build their nests? Of what material are the nests made? Do both parents work at the nest building?

8. What is the color of the eggs? How do the young birds look, when old enough to leave the nest, as compared with their parents?

9. What do the bluebirds eat? How do they benefit us? Do they do our fruit any injury?

10. What can we do to induce the bluebirds to live near our houses? How can we protect them?

11. Where do the bluebirds spend the winter?

12. Make a colored picture of a bluebird. How can we tell the bluebird from the indigo bunting?

13. What are the bluebirds' chief enemies?

*Supplementary reading— Nestlings of Forest and Marsh, Wheelock, p. 62; True Bird Stories, Miller, p. 12; How to Attract the Birds, Blanchan; Bird Neighbors, Blanchan; Our Birds and their Nestlings, Walker, p. 17; Familiar Wild Animals, Lottridge; Audubon Leaflet, No. 24.*

*Hark! 'tis the bluebird's venturous strain  
High on the old fringed elm at the gate—  
Sweet-voiced, valiant on the swaying bough,  
Alert, elate,  
Dodging the fitful spits of snow,  
New England's poet-laureate  
Telling us Spring has come again!*

—THOMAS BAILEY ALDRICH.