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Wisconsin
Bird-Study
.. Bulletin ..

1906



BY

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C. P. Cary, *State Superintendent*

MADISON

Democrat Printing Co., State Printers

1906



The State Superintendent.

This bulletin is published in the hope that through it children may become better acquainted with their neighbors, the birds; that they may learn to know them, love them and protect them.

The birds selected are common ones. They may be found in nearly every part of the state at some time during the year. The robin and bluejay have been omitted, as it is thought they are already known by the great majority of pupils.

Teachers should use the descriptions of birds given in the following pages in their classwork, and should afford their pupils opportunity to use the same, and to study the colored plates, which are particularly valuable in teaching ready recognition of the birds.

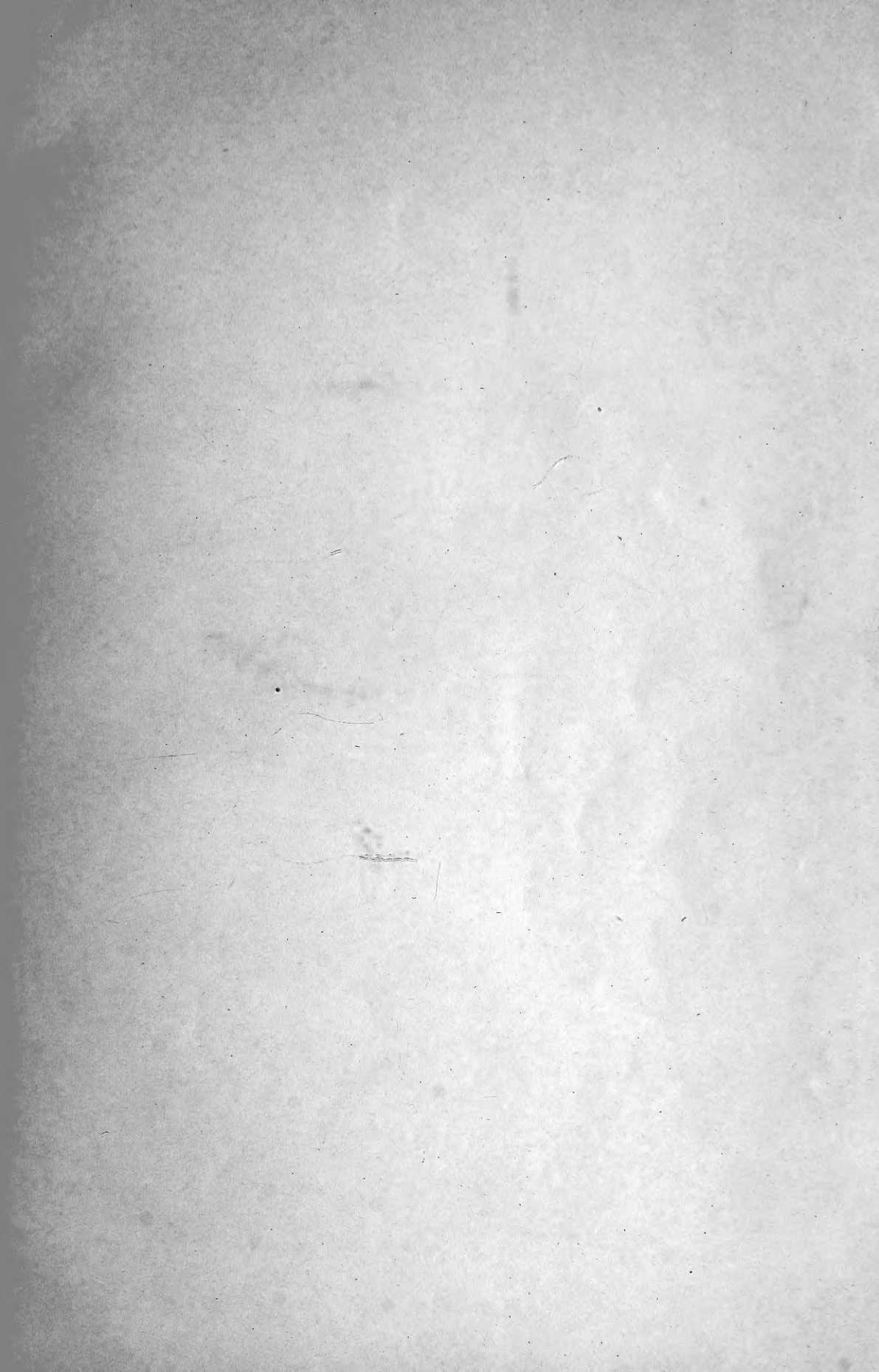
Records should be kept showing the arrival and departure of the different birds. Pupils should be encouraged to observe the birds and to talk about what they have seen. They should also be encouraged to keep note books showing the results of observation.

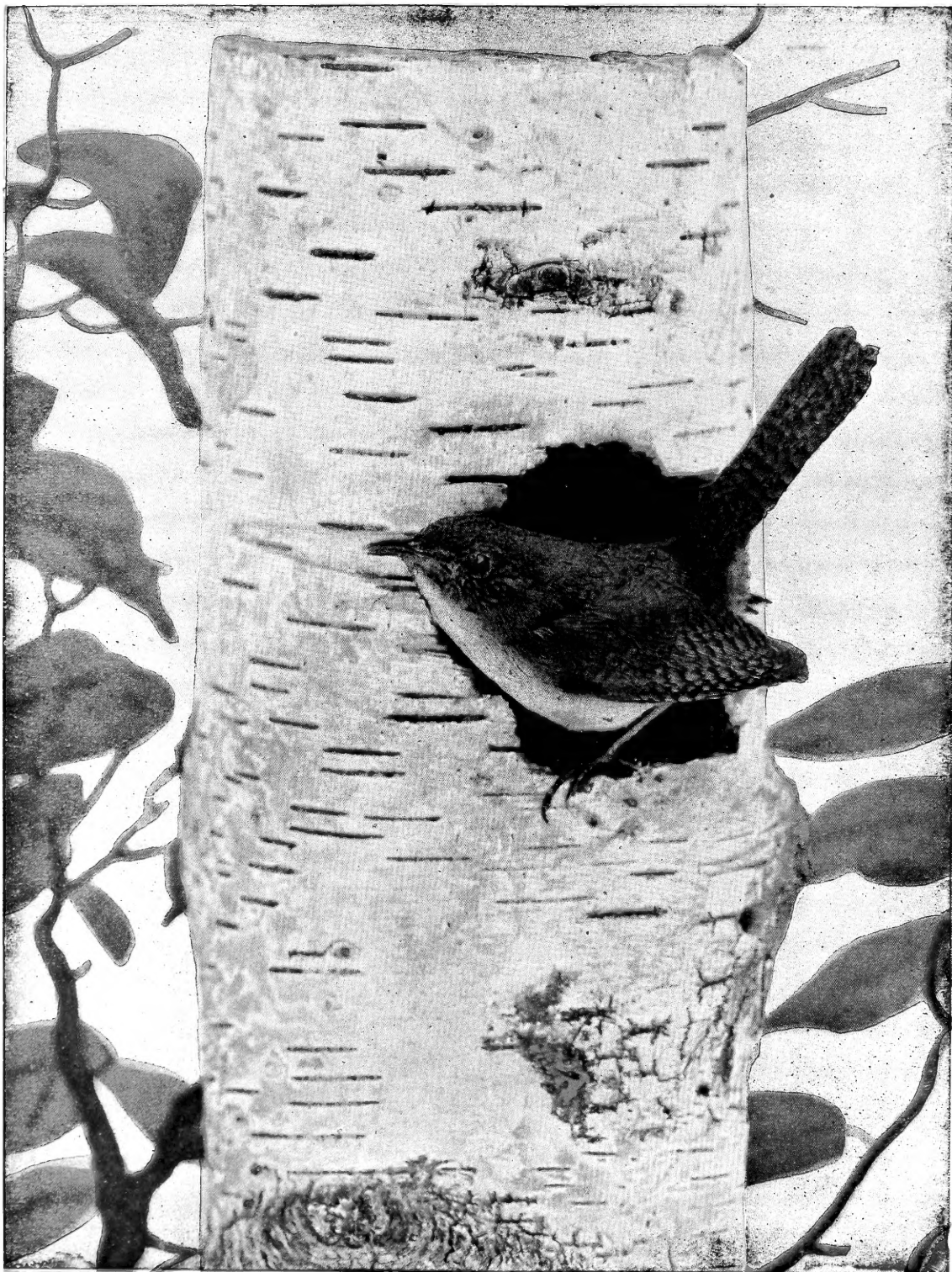
Before the close of the coming summer each pupil should be able to recognize easily such of the birds included in this pamphlet, as are common to his neighborhood, and should also have acquired a considerable knowledge of their habits and economic value.

This bulletin will be followed by other similar bulletins, so that in the course of a few years the youth of Wisconsin may be familiar with the majority of the birds in the state. The series should be carefully preserved.

The descriptions contained herein are entirely the work of Mr. and Mrs. I. N. Mitchell, Milwaukee, Wis., to whom grateful thanks are due.

M. B.





HOUSE WREN.
721. *Troglodytes aedon*. (Vieill.)
Life-size.

COPYRIGHT 1900, BY A. W. MUMFORD, CHICAGO

Wisconsin Bird-Study Bulletin.

HOUSE WREN.

Abundant summer resident; length five inches; sexes alike; nest of twigs lined with grasses or feathers, in vines about buildings or in a hole or box; eggs five to eight; broods two or three; song a strong cheery warble.

The robin, bluebird and tree-swallow have settled down to their housekeeping by the time this little brown sprite makes his appearance and begins to look around for a cozy nook or hole or box.

He generally comes in full song and that morning is a happy one that hears his joyous warble for the first time. To the grown-up this first spring song of the wren is much the same as the first snow-fall to the child.

What a singer this busy little body is! From early in the morning till dusk he repeats his short but whole-souled warble. The rests between songs are about as long—or short as the song itself, so this musical mite is singing about half of the time. The robin sings his “cheer-up” well into the summer, but it becomes conspicuously a morning and evening song. The bluebird soon settles down into quiet watchfulness; his heavenly blue still pleases the eye but the ear listens in vain for the accompanying flute-notes. A brief period of courtship occurs between the flying of the first brood and the completion of the second set of eggs. In this short interval the welcome song is again heard but it soon gives way to the serious duties of life. The wren on the contrary, is a good lover. He is never too serious to sing. He is a veritable Mark Tapley: the cares of life only serve to increase his good nature. As long as there is an egg unhatched or a youngster to be fed, he cheers his mate and his neighbors with his song.

Ever on the alert, he gives timely warning of the approach of their arch-enemy the cat, and vigorously resents the close approach of their human friends by a rapid clicking or chattering note that amounts almost to a hiss.

He reminds one of Sir William Jones's lines:

“What constitutes a state?

Men who their duties know,

But know their rights, and, knowing, dare maintain.”

The wrens are models of industry. Two to three broods a year with from five to eight youngsters in a brood leave no chance for race suicide. With so many little ones to care for they need more than an eight hour day. The wren begins his song and his search for insects by half past four in the morning and keeps up both as long as he can see. He and Mrs. Wren are said to make as many as three hundred visits to the nest per day. This is probably when the young are about ready to leave the nest.

The wrens hunt on and near the ground, under and among plants and bushes. They run along the ground like a streak and in the dusk are easily mistaken for mice.

The gardener can afford to be friendly to these little brown mites, for their hundreds of visits each day to the bean patch and lettuce bed mean the destruction of great numbers of caterpillars and full grown insects that would live on the vegetables if they were given a chance.

Almost anyone may have the pleasure of the company of a pair of wrens if he will extend the proper invitation. Nor is the invitation a difficult one to extend. Any box with a small hole in it if placed in a tree, on a pole, or among vines where he can easily find it will prove attractive. The door way should be only a little larger than a silver quarter, say one and one-eighth inches, and should be about three or four inches above the bottom of the box. If the doorway is much larger than a quarter, the bluebird, tree swallow or English sparrow is likely to appropriate the box. An old wooden shoe, a boot, a tomato can, an olive bottle, a coat pocket, a gourd with a hole in it, a knothole in the side of a house are among the forms of invitation that have proved acceptable to the wrens.

There seems to be a family feud between the wrens and bluebirds. If, therefore, the bluebirds are already established on the premises, it would be wise to place the wren box as far away as possible; even then the bluebird may drive the wren to a neighboring yard.

This is more likely to happen in the spring before the vines and leaves offer the wren good hiding places.

The wren is probably the cause of this ill feeling. He can not resist the temptation to enter every hole he finds. He has a passion for house cleaning or for mischief, maybe for both. He slips into the boxes of the bluebirds and swallows and throws out their nesting material, not for use in his own nest, but apparently just for fun. He will bring bit after bit, feather after feather to the doorway and flirt it out. With head tilted to one side he watches, with apparent pleasure, the bit or feather fall or float away.

No wonder that the bluebird does not wish him for a neighbor.



BALTIMORE ORIOLE.
507. *Icterus galbula*. (Linn.)
½ Life-size.

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BALTIMORE ORIOLE, FIRE BIRD, HANG-NEST.

Abundant summer resident; length seven and one-half inches; sexes unlike; nest a deep, hanging pocket woven of strings, hair, grass, plant fibers at or near the end of a branch; favorite tree, the elm; eggs four to six.

The bright, flaming orange body with the black head, neck and back of this bird make him an easy mark for the beginner. The female is harder to know, because her colors are less bright. The back is a rusty orange; the under parts a dull orange; the head and back are mottled with black.

The oriole flashes into the landscape of the southern half of Wisconsin in the first week of May. It is then that we turn to Lowell's "Under the Willows":

"Hush! 't is he!

My oriole, my glance of summer fire,
Is come at last, and ever on the watch,
Twitches the pack-thread I had lightly wound
About the bough to help his housekeeping,—
Heave, ho! Heave, ho! he whistles as the twine
Slackens its hold; *once more, now!* and a flash
Lightens across the sunlight to the elm
Where his mate dangles at her cup of felt."

He comes in full song and usually a few days in advance of his mate, or of her who is to be his mate.

His song is a bright cheery whistle. He seems to say *here, here, come here, dear,* and, *sweet-heart, come here! here!* as he hunts over the bark of the apple tree. Notice how long and sharp his bill is. It is just the thing for reaching the eggs and caterpillars of insects that are hidden in the deep crevices of the bark. The oriole is known to destroy the contents of the cocoons of moths. With his sharp bill he pierces a hole through the tough silken case and eats the pupa that lies snugly within waiting for the warm weather to complete its wonderful change to a beautiful moth. But, alas! that change never comes to those that the oriole attacks. The tent caterpillars suffer much at his *bill*. He tears open their great web tents in the apple and walnut trees and destroys the inmates as they try to escape.

Watch him at his work. How carefully he searches over the limbs, eating and whistling. He reminds one of a hound. As the hound shows his enjoyment of the chase by frequent bayings, so the oriole hunts and sings. Now a bug, *thanks!* now a caterpillar, *thank you!* now a click-beetle, *thank you, ma'am!* he seems to say. In his spring cleaning of the trees, he is paying in advance for the few cherries or grapes or peas that he may take in the summer.

The oriole is one of the most skillful of bird architects. Her deep

nest swings lightly from a swaying bough, and her young are rocked in the cradle of the air. Their most appropriate lullaby would be:

“Rock-a-bye birdie in the tree-top,
When the wind blows, the cradle will rock.”

The nest is usually fastened securely to three branches. The fibers, grasses, strings and hairs are skillfully interwoven into a firm pouch or sack about five inches deep. The birds work together in building the nest, but only the female occupies it.

The oriole takes kindly to civilization, probably because men take kindly to him and protect him in return for his bright plumage, his cheerful song and his great value as an insect destroyer.

His friendliness and curiosity are prettily shown by an incident that occurred in a Milwaukee home. Within a clematis covered window which overlooked the garden, hung the cage of Lorenzo D., the canary.

One day an oriole was noticed clambering in the vines next to the window. The bird was observed by the family, who were at dinner, to be apparently attracted by something inside the window. After investigating for a few minutes he flew away. The next day he came again and again showed the same curiosity. After exchanging call notes with the canary several times he again flew off. The lady of the house, attracted by the calls, now placed the bird cage on a window-seat in front of the open window. In a few minutes Lord Baltimore returned. The lady, from an adjoining room, watched proceedings with great interest. The oriole entered the window, flew upon the cage and the two birds touched bills in a friendly way. The oriole then flew to the back of a chair from which point he looked curiously about. While he was thus engaged, Lady Baltimore appeared in the clematis and called. At her call Lord B. attempted to fly out to the vine, but as usual with birds, he could not appreciate glass, and struck against it. He fell below the sash, however, and easily escaped. Either his curiosity was satisfied or Lady Baltimore entered a protest against such conduct for the visit to the canary was not repeated.

“How falls it, Oriole, thou hast come to fly
In tropic splendor through our northern sky?
At some glad moment was it Nature's choice
To dower a scrap of sunset with a voice?
Or did some orange tulip flaked with black,
In some forgotten garden, ages back,
Yearning toward Heaven until its wish was heard,
Desire unspeakably to be a bird?!”*

*“To an Oriole,” by Edgar Fawcett, from *With the Birds of Indiana*, compiled by The Public Library Commission.



CHIMNEY SWIFT.

423. *Chaetura pelagica*. (Linn.)

$\frac{2}{3}$ Life-size.

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CHIMNEY SWIFT, CHIMNEY SWEEP.

Abundant summer resident; length about five and one-half inches; sexes alike; nest made of light twigs or leaf stems glued together against some wall by saliva in such a way as to form a shallow, half saucer-shaped bit of lattice work; eggs four to six, pure white.

The chimney swift with his long, narrow, scythe-shaped wings, looks and acts so much like a swallow that it is often mistaken for one. It has even come to be called the chimney swallow.

The swifts are dusky little birds of a sooty black color, lighter on the throat. The bill is quite short but the mouth is very wide at its base. The tail is noticeably different from the ordinary bird's tail. The feathers are short and the quills or shafts extend beyond the vanes for about a quarter of an inch. These spiny tips of the tail feathers serve as a brace to help support the body while clinging against a surface just as the stiff tail-feathers of the woodpeckers form a sort of camp-stool for that tribe.

The chimney swifts do not rush off for the north on the first balmy spring breezes as the robins and bluebirds do. It is the last week in April or the first week in May before they venture into southern Wisconsin. By that time the air is again filled with insects and their food supply is sure.

To know the swifts, one must look for them on the wing for they are tireless sailors of the azure sea. Their wing strokes are rapid and produce a twinkling motion that is readily recognized. Unless too high in the air, the end of the short tail may be seen as a pointed oval.

These birds are masters of the air. They even pick their building material from the trees without alighting. They sweep through the sky, they circle and turn, they chase each other as though playing some kind of air tag and as they fly they make a twittering noise that is in keeping with their twinkling wings.

Their food consists entirely of insects and is taken on the wing. As most of the insects captured are very small, these little fly and mosquito hunters must be very active in order to get enough to eat, to say nothing of caring for their young.

Suppose that boys could get something to eat only while playing tag or shinny or while skating; suppose further, that the food came in bits hardly large enough to taste, what runners and skaters they would come to be! They too would probably earn the name of swifts.

We are told in the books that many animals are protected by their colors; for instance, that the weasel, being white in winter and brown in summer is less easily seen while hunting or being hunted because he matches or harmonizes with his surroundings; or that Mrs. Bob White is safer while on the nest because her feathers are

the same color as the nest and the ground on which it is built. Doubtless this same instinctive desire to be in keeping with its surroundings that has guided the bird in choosing the materials for its nest has had everything to do with the modern nest building habits of the swifts. Where could they find a nesting place that would more completely match their color than a sooty-black chimney! We are often inclined to think, cart-before-horse fashion, that they are sooty black because they live in chimneys.

The swifts lived, of course, long before there were any chimneys and lived then as they do now where there are no chimneys, in hollow trees. Their presence in such great numbers about the homes of man in city and country seems to show that they prefer civilization with its chimneys to the forest with its hollow trees.

Moses Coit Tyler has said that our real names are not those that were given us by our parents but those that we have earned for ourselves. On this ground the swift should have two good names, for he has earned two; one by his rapid flight, the other by his building in chimneys. What more natural than to call him the little *chimney sweep*? a name already recorded by Mr. Bendire.

The picture shows nicely the form and size of the nest and how it is glued to the bricks. Notice that it has no lining. The six eggs nearly fill it. How then can it hold the growing nestlings? Mr. Otto Widman of Missouri and other observers have found that the nest does not hold them long. They tell us that the parent birds take turns in sitting on the nest: that they sit with the bill against the wall over the middle of the nest, wings outspread to cover it: that the young sit in a half circle, heads together, against the wall, their tails sticking over the edge; but that in a fortnight or less they are too big for the nest, clamber out and thereafter cling to the wall, at first under the nest as if they were hiding.

We had the pleasure once, of finding a nest in a bath-house on the shore of Lake Michigan. There were no chimneys near. The nest was glued to the rough boards about eight feet from the floor. The young were out of the nest when found. They did not hide under it but scattered out over a square yard or more of the board wall. The old birds entered through a small window hole near the top of the door. When they came with food and began feeding one youngster, the others scuttled over to the fortunate one with much spreading of wings and a chorus of squealing, purring notes. On the departure of the old bird, the young ones again scattered over the wall.

We took one of the little fellows from the boards and let him cling to the back of our hand. His claws pricked like pins and we were glad to replace him.



AMERICAN GOLDFINCH.
529. *Spinus tristis*. (Linn.)
 $\frac{2}{3}$ Life-size.

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AMERICAN GOLDFINCH, THISTLE BIRD.

Resident; length about five inches; sexes unlike; nest a thick walled, compact, well made cup, outside of fine grasses, fibres of bark, wool and moss, inside thickly lined with thistle-down, wool and cotton; eggs three to six.

This is the yellow bird that so many people in Wisconsin call the wild canary.* The resemblance between our wild finch and the cultivated immigrant from the Canary Islands is so striking, sometimes, both in color and voice, that the name seems almost justified. Let us be patriotic, however, and claim our own bird as the *American goldfinch*. How well the name suggests his clear, beautiful, yellow body color. This, with his black crown, wings and tail make the male bird an easy one to know. The female, though dressed in the same general colors, is much harder to identify. The yellow is darkened to a brownish olive, and the black of the wings and tail is a dusky, brownish black. The crown patch is wanting. She may be known by the company she keeps better perhaps, than by the colors of her coat. In the fall the male changes color and then looks like the female.

The goldfinch is one of the birds that is easy to recognize by the manner of flight. He adopted the coaster-brake style of locomotion ages before the days of the bicycle. He pumps vigorously for a few strokes and sends himself forward on an upward, wave-like curve, then takes it easy for a bit and falls through another graceful curve. He seems to enjoy the coasting slide and sings "Now, here we go" as he falls. The wavy line of flight and the song "per-chic-o-ree" as so many know it, are nicely illustrated in Mr. Frank M. Chapman's *Hand Book of Birds*.

The voice of the goldfinch is peculiarly soft and clear. His call is a short "sweet" and "dearie" that arouses in his human hearer feelings of tenderness and affection caused by no other wild bird and rivalled only by those suggested by the sweetest notes of the canary. In the mating season the song is prolonged and canary like. To hear a flock of them singing in chorus is an event of a season.

Being a seed eater, the goldfinch finds it possible to remain in Wisconsin throughout the winter. They are so much less noticeable in their winter plumage that many people do not recognize them. They rove through the fields in large flocks feeding on the seeds of the weeds that stick above the snow.

They are most abundant during the last week of April and the first week of May. This may be because many of them have returned from farther south, or they may only seem commoner because the male has again put on his summer coat and because they go in flocks. The

*In some parts of the country the yellow warbler is called wild canary.

goldfinches are a happy, jolly, care-free lot of rovers. They seem to be strongly attached to each other and prolong the life in the flock well into the summer; then they go off in pairs to begin their house making and house keeping duties in the crotch of some bush or tree.

From the viewpoint of the farmer and gardener the goldfinch is a most desirable neighbor. He takes no liberties with anything that man in his selfishness has tried to appropriate to his own exclusive use. He is not only negatively good, he is very positively good. He is one of the unpaid but very efficient assistants of the weed commissioner, and never hesitates to invade a thistle patch for fear of hurting the feelings of the owner of the land, nor for fear of injuring his own chances of reelection. He helps with the dandelions and plantain, with the ragweed and dock. He is fond of sunflower seeds but gets hardly a taste of them if English sparrows are about.

These beautiful birds are more than weed-seed destroyers. Like their relatives, the finches and sparrows, they feed their young on insects and thus help to hold in check the beetles and grasshoppers and the rest of that pestilential army.



YELLOW WARBLER.

652. *Dendroica aestiva*. (Gmel.)
♂ Life-size.

COPYRIGHT 1900, BY A. W. MUMFORD, CHICAGO

YELLOW WARBLER, SUMMER YELLOW BIRD.

Abundant summer resident; length five inches; sexes nearly alike; nest of fine grass, plant-down and fibers placed in bush or tree, sometimes about the home grounds, more frequently in woods or clearings.

This little fellow is a member of the largest and to many, the most interesting family of birds that visit Wisconsin—the warblers. With one exception they are small, dainty birds; so trim and prettily dressed and so active and graceful that they merit the title given them by Mr. Henry Van Dyke, “The little dandies of the air.”

Not one of them is a winter resident with us, and only two or three stay through the summer, unless it be in the very northern part of the state. They go to extremes: to Central and South America for the winter and to British America for the summer. The warbler tide sweeps northward over Wisconsin during the first half of May. Then the air is full of them. They loiter among the bushes and trees. They give a touch of life and an added beauty to the blooming orchards. They coquette with the sweet scented clusters of the wild plum and crab-apple blossoms. They invite one out into the open with note-book and opera glass to view their passing show; and no one has been properly initiated into the great fraternity of bird-lovers who has not accepted their invitation and caught the warbler fever.

The yellow warbler is a common summer resident in our state. He comes to us, in company with that other flash of golden yellow, the Baltimore oriole, on the third day of May. Like pupils with a record for punctuality to maintain, some of them come a little early for the sake of being on time, and may be seen the last day or two of April.

The picture shows the male bird. Note that the whole body is yellow—an orange or reddish yellow. It is easy, therefore to distinguish him from the goldfinch with his black and lemon plumage. The back of this warbler is a little greenish and the under parts are streaked with reddish brown. The female has few if any of the brownish streaks and is a little greener above.

The picture gives a good idea of the nest with its full clutch of eggs. The male stands above the nest alert and, it may be, anxious; at all events it is a period of great anxiety on the part of himself and mate.

Thus far all is well: the nest is complete: maybe the female has begun to sit and is now off for exercise and food. What a pity it would be to have all their trouble for nothing—not only that, but to go on having trouble, a growing trouble that shall fill the nest and spoil everything! They have reason to be anxious for they have an enemy lurking about. A red squirrel? Well, he is an enemy, but it is not he. A bluejay? Little birds are much alarmed when a bluejay comes about, if they have eggs or young in the nest, but it is not the bluejay nor his big black relative the crow; no, nor a snake. They are all bad enough, but they would destroy the eggs or young and have done

with it. The lurking enemy is a black bird, a bird that would rather tend the cows than tend her own cradle: in fact she has no cradle to tend, she never makes one. She prefers to lay her eggs in the nests of other birds and leave all of the work of sitting and rearing to the foster parents. This cowbird's egg, for you have already guessed that the dreaded enemy is the cowbird, is a good bit larger than the warbler's egg and therefore makes a larger nestling. This big fellow crowds the little ones back at feeding time and gets more food than they. It therefore grows faster than they and finally starves or smothers all of the little warblers or crowds them out of the nest to their destruction. The foster parents go on feeding the intruder and care for it till full grown. The yellow warbler is only one of many small birds that are imposed upon by the cowbirds.

Why do the little birds stand it? Perhaps some of them do not appreciate the situation till too late. It is certain, however, that many birds do appreciate the danger, but are not able to roll the big egg out of the nest and are not intelligent enough to think out any other way of getting rid of it. The mother instinct keeps them from abandoning their own eggs so they suffer the imposition and, as a rule, never get even. But occasionally there is a warbler or other bird that does get even. The nest is sometimes abandoned, sometimes the eggs only are sacrificed, a new nest being built on top of the old one and a new clutch of eggs being laid.

Florence A. Merriam in her delightful book, *Birds of Village and Field*, states that "sometimes the shameless cowbird lays eggs in this second nest, when the undaunted warblers actually build a third story and start again."

The warblers are very valuable friends of the farmer because they eat vast numbers of small insects and the eggs and young of insects.

They search over the finer parts of shrubs and trees, the twigs and leaves, flowers and fruits, picking off the enemies of these parts. Like the cedar-bird and flycatchers they dart off into the air for passing insects, returning again and again to the same or to a neighboring perch.



BOB-WHITE.
289. *Colinus virginianus*. (Linn.)
♂ Life-size.

BOB WHITE, QUAIL.

Resident in Central and Southern Wisconsin; length ten inches; sexes much alike; white of male replaced by buff on the female; nest on the ground, made of grasses, twigs, weeds and leaves; eggs ten to twenty-five, usually ten to eighteen.

Bob——White!——Old——Bob—White! There he is, just beyond the fence on that stump! How fine he looks! There he goes again, Bob——White! What a clear ringing whistle! I wonder if we can call him nearer. With my fingers, I imitate his alto notes Bob——White! and he whistles back, Bob——White! I try again, he answers again. We whistle back and forth for several minutes. Now he disappears from the stump; we wait patiently, partly hidden by some roadside bushes; now and then we catch glimpses of his head bobbing forward and back through the grass. Again we whistle, —Old——Bob——White! comes the answer, not far away. There he is! on the fence, on the middle rail, see him? what a beauty! Here he comes, now he is on the ground: how white his throat is, and the line above the eye: how tidy he is, and how well his browns and grays blend with the old leaves and stuff about him!

Ah! that automobile is going to scare him. Away he sails into the thicket beyond the brook. Very likely his home is there, and Mrs. White is busy with her nest full of eggs, for it is the first week in June. Twenty-four days will pass before the chicks appear. Then both old birds will hunt with them through the stubble for eighteen or twenty days when they will be left to the care of Mr. White and Madame will arrange for the second brood. In the fall the whole family will hunt together through the fields.

Formerly the quail was very common in Wisconsin, later they were nearly all destroyed.* Between 1890 and 1902 many birds were imported into the state from Kansas and other places and set free. These and the remaining native birds having been protected by a continuous closed season have greatly increased in numbers in parts of the state. The present game law prohibits the killing of quail before October, 1910. It is hoped that by that time they will have become common again.

In some places they come about the gardens and farm buildings. They even mingle with the chickens and are fed with them. In the fall of 1902 a farmer near Baraboo found a small covey in his garden. They were fed and coaxed off to the barnyard where they took up their winter quarters in a cornstalk shelter built for them by the farmer and his son. They were fed through the winter, often with the fowls, became quite tame and have returned to the shelter for the past two winters. The covey, meantime, has increased to a large flock.

**The Birds of Wisconsin*, L. Kumlien and N. Hollister. Bulletin of the Wisconsin Natural History Society, 1903.

Sometimes the winter is harder on the quails than the hunters or other enemies are. They roost on the ground and are often snowed in. This does not matter—indeed they like it, for it is warmer in their snow house and they are not so easily seen by their enemies. But, once in a while a crust forms above them and they cannot get out. Unless the crust soon melts or some watchful farmer or school-boy releases them—as he sometimes does—they starve or smother. When the snow goes off, the farmer finds the record of their little tragedy in the bunch of dead birds huddled in a circle, tails to the center in the regular roosting fashion.

The quail feeds upon seeds and insects. He helps the farmer by eating weed seeds and grasshoppers of which it takes a great many to raise a family of ten to eighteen chicks. And think of a family of twenty-five little Bob Whites! Mr. A. R. Dugmore, in *Bird Homes* states that twenty-five eggs are sometimes found in a nest.

Bob White helps Mrs. White in all the family cares from the making of the nest to the rearing of the brood.

The quails, like the grouse, sandpipers and some other birds are extremely skillful and courageous in the protection of their little ones. If disturbed while hunting about for food, it is the habit of the old bird to give the alarm, when, quick as a wink, the little ones scatter and hide under leaves, tufts of grass or anything that offers them shelter. Their color so nicely matches the ground colors, that even if exposed, they are hard to discover. If disturbed so suddenly that the chicks have scant time to hide, the old bird plays a very pretty trick. She flops in front of the intruder as though wounded and unable to fly, meantime giving her warning to the chicks. With matchless skill she attracts all attention to herself. Away she limps and flutters, adroitly keeping just a little beyond reach and acting her part so perfectly that even the wood-wise hunter is at times made to think that really this one is actually hurt, this is no sham, when, off she goes as sound as any bird in the wood. Then the hunter, feeling a little foolish at having been tricked by a bird that he knew all the time to be full of such deceits, turns back thinking that he may discover some of the little ones for whose safety all this pretty acting has been done. But no, he is fooled again: he can not be sure just where he was when he began his efforts to rescue the poor wounded bird. There is not a sign of a chick anywhere to be seen. He turns over leaves, pieces of bark, a dead branch here, a tuft of grass there, but no—he has lost his place, the chicks are safe and the mother's point is gained. When the danger is past, she clucks them together again and they go on with their search for seeds and insects.



CEDAR WAXWING.

619. *Ampelis cedrorum*. (Vieill.)
♂ Life-size.

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CEDAR WAXWING, CEDAR BIRD.

An erratic resident at least in southern Wisconsin; length about seven inches; sexes alike; nest bulky, made of grasses, root and bark fibers and similar material lined with finer fibers; often placed in fruit trees about home grounds and in cedars; eggs, three to five. The wandering habits of the winter flocks are probably due to lack of food supply.

If we were to accuse any bird of wearing a tailor-made gown, it would be this trim, dainty waxwing. The modest, unruffled beauty of the plumage makes it a general favorite. Can you imagine a softer or prettier combination of browns? How tastefully its sober tones are picked out here and there by brilliant bits of color! The scarlet tips of the wing feathers, the yellow edging of the tail, the touch of white under the eye and the black bar through it. Could old Polonius, in Hamlet, have hit off better the dress of the waxwing than he did the attire to be preferred by his son Laertes?

“Costly thy habit as thy purse can buy;
Yet, not expressed in fancy; rich, not gaudy.”

The conspicuous crest of the waxwing, slightly raised in the picture, together with the black and white about the eye give him an animated, wide awake appearance, yet he is not noisy nor active nor quarrelsome. On the contrary, he is a genteel bird, as quiet, moderate and well-behaved as he is well dressed. Occasionally they seem to overdo the “after you, my dear Alfonso” act as is shown by the following observation narrated by Mabel Osgood Wright in *Birdcraft*:

“Last May a flock of fifty or more lodged for a whole morning in a half-dead ash tree, near the house, so that seated at ease, I could focus my glass carefully, and watch them at leisure. They were as solemn as so many demure Quakers sitting stiffly in rows; once in a while they shifted about, and seemed to do a great deal of apologizing for fancied jostlings. Their movements interested me greatly, until finally, to my surprise, I saw an illustration of the old story of their extreme politeness in passing food to one another, which I had always regarded as a pretty bit of fiction. A stout, green worm (for they eat animal as well as vegetable food) was passed up and down a row of eight birds; once, twice it went the rounds, until half way on its third trip it became a wreck and dropped to the ground, so that no one enjoyed it.”

The waxwings live in flocks except during the breeding season. They live chiefly on wild fruits. In winter they are most commonly seen in the mountain-ash trees feeding on the berries. They are fond of the buds of the elm and often the walk under a feeding flock is sprinkled with the bud-scales that they have rejected. The young are fed on insects, during the breeding season, therefore, the waxwings

are valuable assistants on the farm as bug-exterminators. They are expert flycatchers. Taking up a position on some commanding limb or tree-stub, they dart off into the air after a passing insect, returning to the same perch time after time after the fashion of the pewee and phoebe.

The waxwings know as well as the farmer when the early cherries are fit to eat and they help themselves so freely that they have earned the unfortunate name of cherry-bird and with it the farmer's ill-will. The name is unfortunate because people who know him by that name only would naturally think him to be a bad bird, whereas his habit of eating injurious insects makes him one of the desirable birds.

As the waxwings do not seriously harm the late cherries but prefer the wild ones and other wild fruits then in season, it would seem that they take the early ones not so much from choice as from necessity. Perhaps they feel about the wild cherry as Mr. Henry Van Dyke feels about "That concentrated essence of all the pungent sweetness of the wildwood"* the wild strawberry; "Doubtless God could have made a better berry, but doubtless God never did."

The waxwings are classified with the song-birds more from their structure and habits—or from courtesy—than from any performance of which they are capable as singers.

A remark of Mr. Chapman's about the flycatchers† applies equally well, if not more nicely, to these birds: "When music was distributed, I believe most of our flycatchers had back seats. It was an unfortunate circumstance, for their sedentary habits and apparently thoughtful, serious, even poetic dispositions make one believe that with proper training they might have taken high rank as musicians."

We might fancy that the waxwings occupied front seats at the distribution but that their serious minds were opposed to music as being frivolous, in fact, that when they assumed the Quaker garb, they accepted also, as the Quakers did, the injunction, "Let your communication be Yea, yea; Nay, nay." At all events, these brief expressions uttered in a thin, high-pitched, nasal whistle are their whole stock in conversational trade.

Sitting in a treetop one after another whistles his faint little nay, nay that may be heard hardly more than two hundred feet. Suddenly the flock takes wing and they send forth, almost in chorus, a rapid succession of yea, yea, yeas.

The Bohemian waxwing is found sparingly in Wisconsin in winter. It is most frequent in the northern part and along the region bordering Lake Michigan.

The colors and markings are very similar to those of the cedar waxwing but the bird is noticeably larger.

*"The Wild Strawberry" in *Fisherman's Luck* by Henry Van Dyke.
 †*Handbook of Birds of Eastern North America*, F. M. Chapman.



YELLOW-BELLIED SAPSUCKER.

102. *Sphyrapicus varius*. (Linn.)
½ Life-size.

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YELLOW-BELLIED SAPSUCKER, YELLOW-BELLIED
WOODPECKER.

Summer resident throughout the state except the very southern part; length eight and one-half inches; sexes much alike; nest a deep cavity in a tree trunk, the bottom softened with fine chips; eggs five to seven.

As shown in the cut, the striking features of the male sapsucker are the bright scarlet on crown and throat, the double band, black and white, bordering the throat patch and the long white bar on the side of the wing. The female's throat is white and the crown is sometimes black.

How well this woodpecker shows the marks of his family! His position on the tree says—woodpecker; his strong sharp, pick-axe-like bill says—woodpecker; his toes—two in front and two behind—say woodpecker, and even his tail with its stiff feathers braced against the bark for a support tells the same tale.

If you would know the sapsucker when you see him, remember that long white bar on the side of the wing. You can see this bar as far as you can see the bird, and frequently when the scarlet crown and throat can not be seen. It is not easy to confuse the sapsucker with the red-headed woodpecker—as some do—if one remembers that while the whole head and neck of the red-head are red, only the crown and throat of the sapsucker are red. In parts of the country the sapsucker is appropriately called the red-throated woodpecker.

This last name is more fitting than yellow-bellied woodpecker, there is so little yellow on the under parts, but the name that fits him best is the one that he has earned—sapsucker. He arrives in Wisconsin late in March or early in April soon after the sap has begun to flow in the trees. The hard or sugar maple seems to be his favorite tree and he promptly goes to work digging holes in the bark, often rows of holes half way or more around the tree. These pits soon fill with sap and he delights in emptying his little artesian wells. He sometimes sits near a hole for hours at a time collecting the sap as it comes, more frequently he goes from hole to hole or from tree to tree.

But, does he dig holes only in the maple? Look at the basswood! No wonder the little boy wondered if it had had the smallpox! Look at the poplar, birch, hickory, apple and slippery elm trees! Evidently he is fond of the juicy inner bark of these trees for their holes do not fill with sap as those of the maple do. These trees give our well digger meat only while the maple gives him meat and drink.

The sapsucker is not the only one to sip the sugar water from the flowing wells. Butterflies, moths, wasps, flies and bees, pressed by hunger and finding flowers few and far between at this early day find there an abundant supply of food. Their presence is not at all dis-

tasteful to the red-throat, on the contrary he likes it and varies his diet by eating the visitors in large numbers.

In the spring the sapsucker shows himself to be what all birds are—great drinkers. At this season he may turn on the tap for a while, but the rest of the year, like the other birds, he must find running or standing water or do as the oriole does, tap some kind of juicy fruit as the apple or grape. This ought to be a suggestion to the bird-lover and the fruit grower. If you wish to attract the birds about the home, or to keep them from injuring the fruit, follow Mr. Lawrence Bruner's advice* and keep a pan of water where they may freely use it for drinking and bathing.

Sometimes the sapsucker is injurious to trees. He strips the outer bark off to get at the inner bark; sometimes he drills so many holes that the tree is really girdled and set back in its growth or even killed. But when we note how many of the great, thrifty basswoods, poplars, hickories and red-elms *have had the smallpox* and are covered with pits, we conclude that the bird is not as harmful as some people suppose him to be.

You would think that when the woodpeckers had once mastered the art of digging their food out of the limbs and trunks of trees they would stick to their trade, but at least two of them do not. The flicker and the sapsucker have departed from the ways of their fathers and have learned to prefer ants to wood-boring grubs. The flicker is the greatest ant-eater among Wisconsin birds and the sapsucker is next. Over one-third of his food consists of ants.

The regular woodpecker tongue is a barbed spear and is used for piercing grubs and drawing them from their burrows for food. Not so the tongue of the sapsucker. His tongue is brushy at the end, like that of the flicker, and is much better for getting sap from pits and ants from their holes than a spear-pointed tongue would be.

*"The Oriole," in *Notes on Nebraska Birds*, Lawrence Bruner.





BLUEBIRD.

766. *Sialia sialis*. (Linn.)
Life size.

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BLUEBIRD.

Common summer resident; length seven inches; sexes much alike female duller; nest in hollow stumps, trees, posts and in bird-boxes; eggs four to six; note a short but very pleasing contralto warble.

To think of the bluebird is to think of Spring. The long weeks of winter have had their rugged pleasures. The bird lover may have taken snow-shoe tramps afield to search for traces of the quail and grouse, to share a meal with the friendly chickadee, to watch the woodpeckers or tree sparrows, or to discover some occasional resident as the robin or red-winged blackbird, shrike or crossbill; but in the main, the fields have been deserted and the wild life, like the woods, has seemed wrapped in a long, restful sleep. We begin to long for the ringing up of the white curtain and the lowering of the green one. How glad we are when the warble of the bluebird, the cackle of the robin, and the joyous whistle of the meadow-lark give us warning that the change of curtains is about to be made.

The bluebird ventures back to the southern half of Wisconsin the first week in March. His back never looks so blue as when in contrast with the March and April snow. It is in harmony with the sky from the first, but his breast must help to melt away the lingering snow before it can be in keeping with the rich, brown earth.

Returning together, the bluebird and his mate soon set about looking over available nesting places. The English sparrow is, at this time, their only competitor, but a severe competitor he is. As cold weather approached in the fall, he appropriated for winter quarters every bird-box into which he could squeeze; more than that, he began carrying in new nesting materials on any mild, sunny day in February. Now he feels that the box is his both by right of discovery and possession and possession is nine points of the law with birds as with higher animals. Unless some one comes to the aid of the bluebirds they must leave their last year's home in the hands of the enemy—"The little beast" as Mr. Van Dyke calls the English sparrow, and go off to the woods in search of a hollow tree or stump. This seizing of nesting places is the chief way in which the *beast* drives our native birds from the city into the country and from the country home to the woods and fences. If then, we wish to keep the bluebird, tree swallow and martins about our homes in city and country we must work out some plan for beating the *beast*. To that end it is well to take down the bird boxes in November and to put them up again in the spring, for the bluebird, the fifth or sixth of March, for the tree-swallow, the fifth or sixth of April, for the purple martins, the first of May.

There will be a fight for the boxes just the same, but the chances of war will be more evenly balanced. The native birds may be aided further if the doorway of the birdhouse is guarded by a little door so arranged that it may be pulled aside from the ground by a string.

The sparrows may thus be shut out till the other birds arrive and the houses then be opened at once without taking them down. An air gun or a shotgun used on the sparrows whenever seen on the premises will help very much, but they are watchful, persistent and intelligent and it is a difficult matter to keep them away. Dr. Hodge, in *Nature Study and Life* advises poisoning them during the winter when there is no danger of harming other birds. Even this is hard to do, not only because one dislikes to do it, but because the birds become suspicious after any have died and will not eat the poisoned food.

The birdhouse without a landing suggested by Mr. Henry Nehrling, has with us proven to be no bar against the sparrow, he enters it as readily as a wren or a swallow.

If the bluebirds find a box ready for them, they will sometimes begin building as soon as they arrive. They are much more likely to look over the box, try the door way by turns, sit on the front porch if there is one, or up on the ridge-pole for a while, then go off for a week or more, returning for brief visits at intervals to try the fit of the sitting room once more.

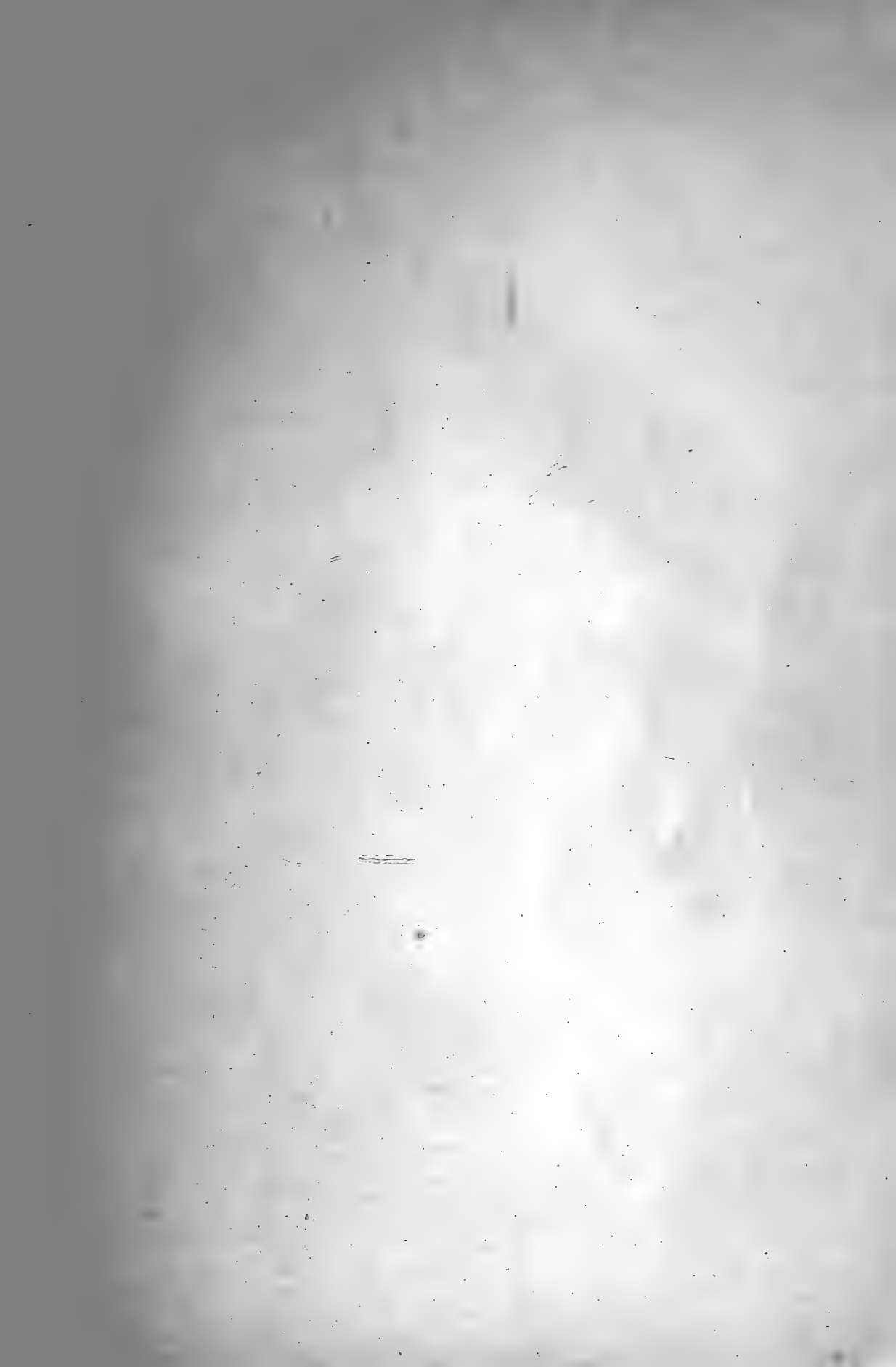
If all goes well, they begin building in earnest about the middle of April. Sometimes, however, things do not go well. In their absence, the tree swallows return, take possession of the box and go to building. Then there is trouble indeed. The bluebirds insist that they had the house first; the swallows claim it by actual possession. They fight fiercely; one is surprised to see that the mild, timid little swallow can battle so effectively. The result depends upon the progress made upon the nest. If it is but nicely begun the bluebirds are likely to regain possession, if it is well advanced they may as well hunt another home for they cannot dislodge the swallows.

After their own nest is begun the bluebirds attend strictly to their labors and daddy "twinklewing," as Dr. Hodge calls the male bluebird, is so watchful that so small a bit of birddom as the wren cannot come within a hundred feet of the box without a chase.

After the second brood has left the nest both old and young disappear, but return occasionally for brief inspections of the old quarters. About the middle of October they pay a final visit then leave for the winter.

This inspection of the box so late in the fall makes one wonder if it has any thing to do with the next spring's location. The fact that they do not so readily take up with a new box as an old one leads one to think that the box may be chosen in the fall.

In his habits the bluebird is very praiseworthy. Three-fourths of his food are composed of injurious insects. While he appreciates many wild fruits, he does not harm the cultivated ones.





RED-WINGED BLACKBIRD.
498. *Agelaius phoeniceus*. (Linn.)
½ Life-size.

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RED-WINGED BLACKBIRD.

Abundant summer resident. A few remain all winter; length nine and one-half inches; female quite unlike the male; nest deep and coarse made of marsh grasses, weed stalks and the like, lined with fine grasses and root fibers; placed among bushes or cat-tails in swampy places; eggs three to five; song a musical chuck-a-leé-dlè.

Red-winged black bird so fully describes this beautiful fellow that one needs only to see him to know him.

Perhaps red-shouldered would have been a better name for only a small part of the wing is red, nor is the wing-patch wholly red; its hind margin is more buff or yellow than red.

If you wish to make his acquaintance, go to the low grounds in spring or summer while the nest is being made or tended. You do not have to hunt him there, he announces himself. How nervous and excited he becomes! He is so afraid that you will discover his nest near by; and yet he tells you all about it! He can not understand that you are not an amphibian and must keep to the dry ground. If you only had a pair of rubber boots, he would probably show the way to the nest in his anxiety to keep you from it. How he cackles and chatters and clicks! Now see the red on the wing! Could anything be brighter or prettier than he as he sways on the stalk of a last year's cat-tail or balances himself on a spray of willow!

You would not take his mate to be any relation to him, they are so unlike—she is a dull, brownish-black bird. Her head and back are a dirty black streaked with rusty brown. The breast is covered with short, narrow streaks of black and white. Usually her shoulder has no scarlet epaulet though sometimes it has a reddish tinge.

The farmer again finds a friend in these birds for injurious insects and seeds make up more than three-fourths of their food.

In the summer and early fall they gather in large flocks and forage over the grain and corn fields. Now the farmer thinks they are doing him an injury, and no doubt they are, especially when the flocks are very large; but he should not forget their valuable service through the months of spring and early summer when they were eating cut-worms, army-worms, locusts and grasshoppers. Had it not been for these birds, he would not have as much grain to divide with them.

COWBIRD, COW BLACKBIRD, COW BUNTING.

Abundant summer resident; length about eight inches; sexes quite similar; nest none; eggs eight to twelve.

The male cowbird has a blackish brown head and neck. The rest of the body is a glossy black with bright bluish and greenish burnishings.

The female is a dark brownish gray, lighter on the under parts.

The cowbirds arrive in Wisconsin about the first week in April. They are at first in large flocks. The flocks break up as the breeding season approaches and the birds scatter in small companies of about a dozen each.

The cowbirds have a varied diet: they eat small seeds, grains and berries for the vegetable part and grasshoppers, beetles, flies and other insects for the animal part of their ration.

Their fondness for insects has led them to hunt their food about cattle. Frequently one may see the cows in the pasture attended by a small flock of these birds that walk about them on the ground and even perch upon their backs and hunt there for parasitic insects. It is this habit that has given them their common name.

The most peculiar and interesting habit of the cowbirds is the scheme they have adopted of putting their families out to be reared by other birds.

As stated in the first paragraph, they build no nest at all, yet the female lays from eight to twelve eggs.

When the nesting time of the other birds has come, Mrs. Cowbird lurks stealthily through trees and bushes. Her one thought, now, is to discover a bird's nest. It does not matter much whose nest it is, providing it is not the nest of too large a bird. The cowbird understands that if her egg is placed in the nest of a bird much larger than herself, the nestling from her egg will have no advantage over these from the other eggs; in fact, that it may even be at a disadvantage.

Although such large birds as the mourning dove, red-winged blackbird and meadow lark are imposed upon, it is usually a smaller bird that suffers.

There is another thing that the cowbird understands and that is that her egg must not be placed in a nest upon which the mother bird has begun to sit. That would give the regular eggs an advantage over her egg.

She examines the nest when found, and, if empty, or containing fewer than the regular number of eggs, she lays an egg in the nest and quietly steals away. She does not always leave the eggs in the nest as she found them; sometimes she throws some of them out; sometimes she pierces some or all of them with her claws or bill, evidently for the purpose of injuring them. Mr. Bendire, who has examined a very large number of nests containing one or more cow-

birds' eggs, says that he has never seen a punctured cowbird's egg. He also reports that the cowbird frequently wastes her own eggs by placing them in old unused nests and by dropping them into new nests before the owner has deposited her own eggs. In the latter case the owner of the nest often abandons it. Sometimes a nest is abandoned after the clutch is partly laid if visited by the cowbird. It is commonly thought that the cowbird never lays more than one egg in a nest. Mr. Bendire has found that as many as seven have been laid in the nest of the oven or teacher bird, and that this and other ground building birds are most frequently imposed on in this way.*

Another interesting thing is that the egg of the cowbird hatches in less time than the eggs with which it is laid. As a result the cowbird's chick has a day or more the start of the rightful occupants of the nest. Being usually larger than the others to start with, and having the advantage of growth for a day or two, it is not strange that the big imposter should either smother the others or starve them by appropriating all the food, or crowd them out of the nest to die of hunger and cold. The very unpleasant truth is that none of the nestlings of any of the small birds imposed on by the cowbird ever live more than a few days. The foster parents do not desert the nest, however, even though the young cowbird is the only one left. They work harder in trying to satisfy the hunger of this big burly fellow than they would have done in rearing a whole brood of their own little ones.

Think of a little chipping sparrow trailing around a big, full-grown cowbird, that, like Oliver Twist, is always asking for more and is never satisfied. The patient little foster parents work harder and harder as though they were proud of their "ugly duckling" and expected great things of it, until finally, it finds that it can take care of itself, turns the cold shoulder on its benefactors, and joins a flock of its own kind assembled from a great variety of nests. The soft-voiced mourning dove and the gentle cuckoo have their representatives in that flock. The red-headed woodpecker and the tyrant kingbird, the flycatchers and blackbirds, the bobolink and the orioles, the meadow lark and the goldfinch, the sparrows, thrushes, vireos and warblers -- all have sent delegates to this cowbird convention.

**Life Histories of North American Birds, vol. 2.*

FEEDING WINTER BIRDS.

After the long, leafless winter, the heart of man longs for the April rains to chase away the ice and snow.

Those harbingers of spring, the robin, bluebird and meadow-lark are greeted with as genuine a welcome as meets the return of a long gone friend. After them comes the procession of the birds, slow and straggling at first, then faster and denser as April gives way to May; then a countless throng flitting, darting, flying, sweeping northward, rollicking, singing, visiting as they go. The dullest and busiest of people see robins then! Soon the flood has swept by. The few scores of resident birds become commonplace and the southern migration, beginning in August, goes on so quietly and is so prolonged that it attracts comparatively little attention.

Then comes the most nearly birdless season. A few hardy wayfarers, either winter residents or visitors from the far north, glean from berries, buds and seeds, from wintering insect eggs, and pupae not hidden by the great snow blanket, a more or less satisfactory living.

The increased interest in all birds in recent years, has led, in many places, to a special interest in these winter birds, and efforts are made to attract them about the home not so much for the sake of the birds, for they seldom need human aid, as for the human beings caged in their homes by cold and storm. Then the visit of a chickadee to the window-sill is an event. It gladdens the heart, quickens the sympathies with the outside world and gives a new joy in living.

It is coming to be a fairly frequent sight to see a bird table erected near the home and spread daily or at short intervals with some such materials as grain, cracked corn, cracked nuts, hay seed, crumbs and table scraps, bits of meat especially suet and a dish of water. The table should be fastened to a tree, on a high post out of the reach of cats, or against a convenient window sill. It will be difficult, if not impossible, to keep the English sparrow away except by means of poison or a gun. One would like to be merciful, and let the little beasts feed and welcome were it not for harboring tramps and increasing the troubles of the spring-time nesting.

A suggestion is offered in *Bird Lore* that is worth trying as it is reported to have worked well in New Jersey and Illinois.

A board six inches wide and two feet long is hinged at one end to the window sill in such a way as to allow the outer end of the board to drop. The board is held about level by a string fastened to its outer end and to the top of the window. In this string, i. e., forming a part of it, a thin or light spiral spring is fastened. The food and water dish are placed at the outer end of the board. When a bird alights the feeding board teeters up and down. The author of

*W. W. Grant, Summit, N. J., in *Bird Lore*, Sept.-Oct. 1905.

the scheme states that other birds will feed at the table, but that the English sparrow will not visit it a second time.

If the lunch counter proves attractive, as it doubtless will, many a happy hour is in store for the friends within while they study at close range, the manners of the chickadee, the red-breasted nuthatch, white breasted nuthatch, downy and hairy woodpeckers, bluejay, junco, an occasional robin and, maybe, one or two other visitors. The juncos are not so likely to find the table as the others as they are accustomed to search for their food close to the ground. For these birds, as for the white throated sparrows, white crowned and tree sparrows, the better way is to keep a bit of ground clear of snow and place the food upon it.

Of the last birds mentioned, the junco is the only one that may be expected after severe weather arrives and even the junco will remain, if at all, in the very southernmost part of our state.

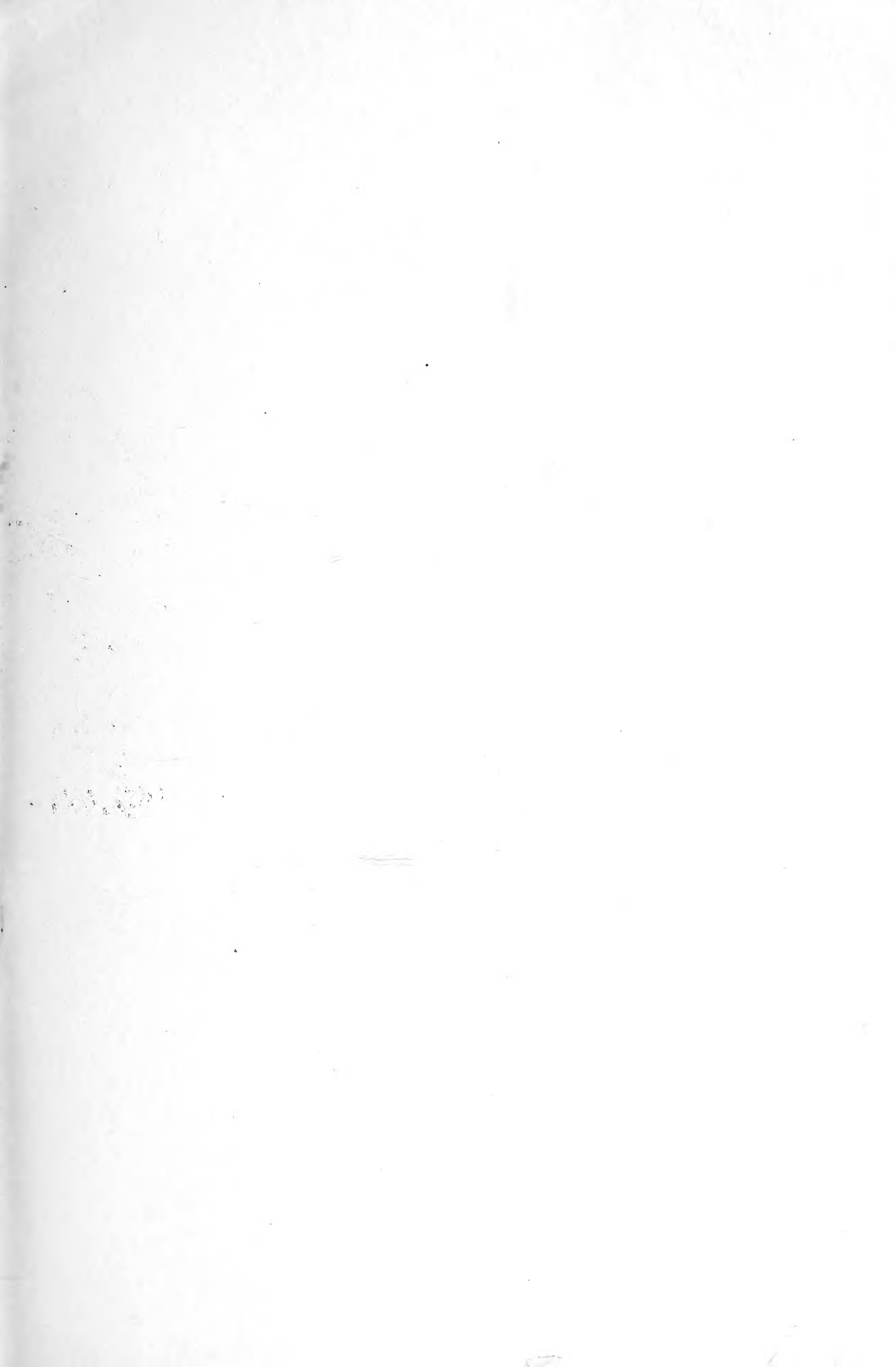
To those living in central and northern Wisconsin, may come the pleasure of watching the pine and evening grosbeaks, the red and the white winged crossbills, Bohemian waxwing and snow bunting.

All winter birds must have a good supply of heat producing food. To most of them suet proves very acceptable. The best way to furnish it is to tie a piece about three inches long in a band of cloth about an inch wide and long enough to go around the limb or trunk of a tree and then fasten the band to a tree near the house.

SPRING ARRIVALS.

In most cases the date given is the average for several years.

	Milwaukee Normal School, I. N. Mitchell.	Milwaukee Public Museum, Henry W. Ward.	Racine, Mrs. Fannie S. Stone.	White- water, Emma L. Shutts.	La Crosse, Mary A. Forbes.	Horicon, Alice M. Freeman.	Marsh- field, Mrs. W. H. Upham.
American gold- finch	May 5 ...	Resident.	April 26..	Resident..	Resident..	May 10..	May 8.
Baltimore oriole..	May 5 ...	April 26..	May 2..	May 1..	May 3..	May 3..	Rare.
Bluebird	Mar. 14..	Mar. 12..	Mar. 10..	Mar. 10..	Mar. 12..	Mar. 8..	June.
Bob White.....	.....	Rare	Rare	Frequent.	.....	.....	Rare.
Cedar waxwing..	Resident.	Resident..	Summer..	Resident..	Resident..	Resident.	June.
Chimney swif ...	April 30..	April 28..	May 9..	April 28..	April 26..	May 1..	May.
Cowbird.....	April 9 ...	April 3 ...	April 3 ...	.....	April 21..	March 21.	May 5
House wren	April 10..	April 6..	April 24..	May 3..	May 4..	.....	May
Red-winged blackbird..	April 4..	Mar. 19..	Mar. 20..	Mar. 14..	Mar. 21..	Mar. 15..	Rare.
Sapsucker	April 4 .	April 3..	Mar. 26..	Mar. 28..	April ..	April 9..	May.
Yellow warbler ..	May 5 .	April 29..	May 3..	May 1..	May 3 .	May 3..	May 10.



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